

**DEVELOPING EXTRACTION TOOL FOR TWITTER:  
TWITTER BOX APPLICATION**

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**By  
DARAH BASSAM KHASAWNEH**

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I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

Name, Last name: Darah Khasawneh

Signature:

Date: 27-02-2017

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## ABSTRACT

Nowadays a lot of people depend on internet and social media to communicate with other people, companies, commercial sites, shopping and sales, etc. The social media such as twitter and Facebook provide a huge number of pages for people, companies, and markets. There are huge information include announcements, images, and textual contents in different life fields. Sometimes the users experience many issues associated with extracting such contents for what their interests and there is no enough time to collect them from all pages. In this dissertation, the researcher suggest to develop a new application to previewing, selecting, and extracting the feeds from the different pages on Twitter in addition to display them by easy and flexible manner and suitable way for all types of users. The proposed application will increase the speed of movements between published information and offer to save people's time.

**Keywords:** Twitter Box, Twitter previewing system, Automatic Twitter navigator, Twitter, Classifier.

## ÖZET

Bugünlerde, birçok insan diğer kişiler, kurumlar, ticari siteler, alışveriş siteleri vb. iletişim kurmak için sosyal medya ve internet kullanmaktadır. Twitter ve Facebook gibi sosyal siteler, kişiler ve şirketler için büyük miktarda sayfa sağlamaktadırlar. Yaşamın birçok alanından olmak üzere, duyural, resimler ve yazılı materyaller bilgi olarak sosyal medyada yer almaktadır. Bazı zamanlarda, kullanıcılar içerik elde etmek için birçok şeyle karşı karşıya kalmaktadırlar ve tüm sayfalardaki içeriği elde etmek çok vakit gerektirmektedir. Bu tezde, her kesimden kullanıcı için, Twitterdeki içeriği görmek, seçmek ve elde etmek için yeni bir uygulama geliştirilmekte ve önerilmektedir. Önerilen uygulama, yayınlanmış bilgiler arasındaki hareketleri hızlandıracağı gibi, kullanıcıların harcayacağı zamanı da kısıltacaktır.

**Anahtar Kelimeler:** Twitter, Twitter İzleme Sistemi , Otomatik Twitter Gezini , Twitter Sınıflandırıcı

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# CHAPTER 1

## INTRODUCTION

### 1.1 Introduction

Recently, the world observed an explosion in the celebrity of social media sites like Facebook, LinkedIn, Twitter, Google+, Snapchat, Instagram and much more, since their widespread has exceeded languages, borders, and cultures. There is no overstatement to say that societies now are witnessing a social media revolution (Brown 2011: p.2).

The social networking sites are one of the most prominent aspects of the new media that Internet revolution contributes

In their appearance and their production processes. In addition, these sites depend on new technologies such as forums, blogs and social networking programs. So the social networks are more and larger sites on the Internet as a means to exercise cultural and social activities that aim at a rapprochement between individuals. Moreover, social networking sites were able to impose themselves forcefully that has become an important source for scholars and specialists to recognize trends in public opinion regarding community issues and concerns. Nevertheless, social media enables users to sharing videos, photos and files and conducting instant messaging conversations which work to expand individual social relationships network with others (Goyal and Diwakar 2011: p.5-6).

According to Lewis (2013: p. 2) social media is defined as a type of online media which helps in the creation and exchange of user generated contents, the most familiar example of social media websites are Facebook and LinkedIn.

On the other hand, social media can be defined as electronic networks via the Internet that allows employee to create a special site and then linked through a social system with other members who share the same interests and hobbies (Aguenza et al. 2012: p.22).

Additionally, Jatana et al. (2011: p. 1) indicated that social media became integral part of the Americans and other countries communication life, as it was found that in 2010. Social media accounted for 22% of all time spent online, since Twitter is considered as most

popular social media as users can follow a lot of the information accounts, thus these accounts save users search time and effort for information relating to all areas.

In addition, social networking sites allow users to combine news and information in one place from multiple sources which help on opening to the outside world, giving individuals an opportunity to exchange views and ideas, see new cultures and close the distance. Also, it allows users to share short messages and multimedia (Goyal and Diwakar 2011: p. 6).

Twitter has become an important communication medium, it attracts its users to generate every single day more than 500 million tweets. Also, people use social media to communicate their ideas and beliefs, and to spread important news. As well as, with the huge size of information exchange happening every day, it is a rather challenging task to process these data and later out the important and relevant information. (Katsios, et al. (2015: p. 1-2). Thus, with the huge number of pages, users, companies, markets and the huge information include announcements, images, and textual content in different life fields, the users faced a lot of problems such as finding a good feed for their interest search, no enough time to collect all pages. This research dissertation suggests a system to develop a new application to preview, select, and extract the feeds from the different pages on Twitter in addition to display them by an easy and flexible manner and suitable way for all types of users, which will increase the speed of movements among the published information to save users time.

## **1.2 Problem Statement**

Nowadays, access to social media has become an important part of our lives and aside of irreplaceable, and no one can deny how these sites could change the patterns of our daily lives. Which be used anytime and anywhere, firms and organizations are utilizing social media increasingly as a venue for product marketing in more easier way and more effectively, and to considerably spread social message with latest updates. Furthermore, social media platforms are considered to be continuously advanced boundary for firms' and organizations' investigations and seeking to achieve and attract new business and induct best expertise and talent (Ruiz 2013: p.32).

In addition, users, clients, customers, business partners, and employees concern to use and best utilize social media and avoid many problems faced with twitter users such as: missed some posts, no access to advertisement for different reasons such as network problems and

lack of rapid modernization or suspend while displaying the pages, web site traffic issues. Therefore, the current research seeks to develop a new application to preview, select, and extract the feeds from the different pages on Twitter in addition to display them by easy and flexible mannered and suitable way for all types of users, and develop a system to increase the speed of movement among published information to save users time.

### **1.3 Research Gap**

After reviewing the previous researches, it can be noted that there are many studies shed light and made efforts on developing extraction tools area for social media platforms. Marcus et al. (2011) combined two systems to extract tweets from twitter that were TweepQL to create user-defined functions and TwitInfo to test user interface with twelve users.

Furthermore, Gattani et al. (2013) aimed to describe an end-to-end industrial system to provide a solution for huge amount of information in social data. The system has been developed and used heavily in the past three years, first at Kosmix, a startup. Also, the developed system uses a Wikipedia-based global "real-time" knowledge base that is well suited for social data.

Ritter et al. (2012) presented TwiCal model to extract and classify calendar of important events from Twitter. The results showed that TwiCal model had high level of efficiency thus based on aggregate events. Moreover, Upadhyay et al. (2014) used twitter API to illustrate how to data mine twitter, since API application is simple and easy to use by any person regardless his/her programming background.

The current research suggests developing a simple application to preview, select, and extract the feeds from the different pages on Twitter. In addition to display those by easy and flexible manner and suitable way for all types of users, and to increase the speed of movement among published information to save users time, besides to added TV channels option.

### **1.4 Research Significant**

Nowadays technological revolution has had impact on all aspects of social, cultural, scientific, economic and political life and also many others, information technology is only a revolution that affects in which people live, as it has significant influence on

changing their lives for the better, and making their issues go faster. The information technology at a social level has led to the establishment of a new type of communities, which called many different names, including: intelligent community, or virtual community, as it governs the convergence and interaction in society by the way people communicate and interact social media (Hameededdin 2010: p.3). Thus, the role of the new media tools is out of control because of the great growth in its types, methods and tactics, such as email, WhatsApp, and social media, so the biggest challenge is to use these methods and new media effectively and chose the appropriate one in addition to determine the way to communicate effectively.

Therefore, due to the notable technological evolution of the various media tools and the emergence of the modern and new tools such as social media as explained above, this research significant stems from its efforts to provide suggested design of the needed and requested application, which may applied and utilized to extract the factual information about an event.

Furthermore, this research tries to develop an application to act as a solution for many problems faced with twitter users such as: missing some posts, no access to advertisement for different reasons such as network problems, and lack of rapid modernization or suspend while displaying the pages, web site traffic issues.

Finally, this research will add new valid data to social media library literature, which came to be a key and important requirement for all media institutions. Moreover, this research will add value to the media sector in term of extraction application and tools in effective and perfect manner to gain social media opportunities in enhancing and increasing users' productivity rate and overcome and limits its disaster risks.

## **1.5 Aim of the Research**

The main aim of this research is to develop a new application to preview, select, and extract the feeds from the different pages on Twitter in addition to display them by easy and flexible manner and suitable way for all types of users, and to increase the speed of movement among published information to save users time.

The dissertation will undertake the following objectives:

- Develop an application to act as a solution for associated issues with twitter users such as: missing some posts, no access to advertisement for different reasons such as network problems and lack of rapid modernization or suspend while displaying the pages, web site traffic issues.
- Develop an integrated application with Twitter to gather all users' notifications easily without getting lost, sharing the content faster and easier, and offer powerful targeting options to reach the feeds directly.

## **CHAPTER 2**

### **LITERATURE SURVEY**

#### **2.1 Introduction**

With the tremendous growth of Information and Communication Technologies (ICTs) and various social changes in almost all civilized communities, this growth led decision maker, employers, officials, and administrators from different sectors to focus on investigating the benefits and the expected influences of these technologies on end users worldwide in all sectors. As they found communication technologies such as cell phones, television, the Internet, and all its derivatives have immediately impact on people anywhere and from different sectors and field, and have affected the way in which groups communicate (Hameededdin2010: p. 7-8).

In fact, with the notable and wide appearance of the social media such as (Facebook, twitter, LinkedIn) which have become a basic part in the lifetimes of several people, and one of the basic ways of social link and communication among people, or with companies and governments around the whole world. Moreover, the increasing and constant renewal of the data that is generated at every moment on the locations of these networks. The social networking support individuals with the best opportunities and services to enable them to achieve all forms of communication and contact social and family, beside that it provide techniques that assist them to gain the hopefully integration and involvement in the electronic societies in various interests in ways allows them to global openness to the different surrounded cultures. Therefore, these social media carry its obvious, notable and heavily affect the persistence and the stability of all people in genera (Brown 2011: p.2).

As known that, Twitter has become an important communication medium, it attracts more than (255 000000) active users who tweet over (500000000) "tweets" each day. Furthermore, people use social media to transfer their thoughts and opinions, and to extent significant news. As well as, with the huge size of the interchange of information happens every day, it is a difficult task somewhat to handle this data and later of the important and relevant information. In addition, twitter work as a large exporter of wealthy information for so many of users on the internet and thus is susceptible for applying dataextracting (Katsios, et al. 2015: p. 1-2). Thus, with the huge number of pages, users, companies,

markets and the huge information include announcements, images, and textual content in different area of expertise, the users experienced a lot of problems such as finding a good feeds for they interest search, no enough time to collect all pages. In conclusion, this chapter presents the social media platform in usual, and Twitter in specific. As the chapter, will also move on to discuss the applications of the extraction tools, and the proposed application "twitter box" and how to select and extract the feeds from the different pages of Twitter, in addition to display them by easy and flexible method and suitable way for all types of users. Finally, a summary of the chapter will be also provided.

## **2.2 Social Media**

The concept of social media defined, as it mentions to telecommunication /publication platforms that created and supported by the relational communication of people during the particular method or device. Also social media defining as the uses of information to connect people by several models for example internet forums, message boards, weblogs, wikis, podcasts, pictures, and video (Neti 2011: p.2). In addition, social media mentions to the usage of web-based and cell phone communications to transform into a communicating chat between users. It is clear that social media such as Facebook, twitter, Orkut, Myspace, skype etc., are utilized widely for the telecommunication with an individual or a group of people (Baruah, 2012: p.1). Moreover, there are seven functional blocks, which are defined the social media: identity, relationships, dialogue, sharing, existence, reputation, and groups (Kietzmann, et al. 2011: p.241).

Social media at this time having a major part in the lifetime of several network users. The posts or comments on a social media website like Twitter or Facebook involve individual status, view sharing, conversations, advertising, campaigning, considered as a new way to share the information. Moreover, social networking sites have come to be an immediate resource of information across which users from all everywhere in the world can stay linked and get to inform about the information from diverse resources. In addition, it allows users to share short messages and multimedia (Goyal and Diwakar 2011: p.6).

Further, social media presents low cost tools to merge between technology and social communication by the use of words. Additionally, social media is the medium to socialize. The social media have many advantages, which are significant to companies, these benefits contain used of web-based technology to speedily spread data and knowledge to the largest possible number of users, authorize to establishment and interchange of user-

produced content. Also, cost decrease by reducing workforce time, and arise income cost. Also, social media are important to companies, it allows them to enables customers helping customers, attract customer enthusiasm, tap into the knowledge of their consumers, and share their expertise and knowledge (Neti 2011: p.3).

Correspondingly, the social media represented by using internet and platforms to edit, share, make, and discuss internet content, that can affect significantly on a company's, sales, reputation, and even existence. Moreover, social media use cell phone and web-based technologies to make extremely communicating platforms for persons and societies share, discuss, and update and change user created content. In addition, it let users to generate their own pages and profiles, list of friends, and they can make add to the friends-of-friends to their own list of friends (Kietzmann, et al. 2011: p.241-242)

There are many positives and negatives to the use of social media. The most significant positive of it is distribution information and news between various types of people online. In addition, social media use to increase the communication skills between different kinds of people, students of educational organizations, and make people close to each other specifically those living in faraway spaces. Furthermore, the social platforms used to monitor the business, competitors, and products, and allow companies to reach out to their clienteles by the social net to transfer messages about their offers (Baruah 2012: p.1).

On the other hand, the dark sides of use the social media devices are misapply by people, which chiefs to the attack and interference on other privacy. This attack and interference leads to dangerous dimensions from the ethical side of the use of social media. Moreover, most of the social media platforms sites are now seen as a way of advertisement and a way of raise contributes in a direct connection between brands and the community costumers in an online environment and this allow for customers the ability to present, connect, impact, and keep a stronger situation towards brands. In addition, the social media is a way for organizations communicates, and any blog posts and tweets allow companies to build communities, present direct response, or help, and reinforce their products and services (Baruah 2012: p.1)

## **2.3 Twitter**

Twitter is a microblogging technology which earning extensively used in the recent to keep touches with families, friends, and interconnect with the loved ones when the phone



links are cut off. Many people would collect for publishing and share information by using social media networking sites such like (Twitter as well as Facebook and YouTube).

Twitter is one of the means of social communication, which has spread very widely in recently, it was launched as a micro-blogging website in March 2006, and Twitter lets its users to post short post or status messages known overall in tweets, which consists of 140 characters. Tweets can be tweeted from several resources that contain the twitter website, and twitter mobile applications, the users in twitter can control over the privacy features, and chosen of make the tweets public or invisible to every one or make them secretive, and make the access to some users by permission from the user. Moreover, the users can follow other users to take the access to their tweets and homepages. Twitter has a many of features such as: allowing users to reply on other users' tweets by ticking on the reply button on the tweet of the user who one wishes to answer to, users can add hash tag “#” in their tweets by adding hash tag sign previously relevant keywords, which makes the search more easily in twitter. In addition, users can mention other users in their tweets by adding the ‘@’ to the username of another user in a tweet. Also, Twitter allowing users to retweet the tweet of other users. Moreover, the important feature of twitter is the connection of following and being followed are not essentially two ways (Goyal&Diwakar 2011: p.6).

Twitter is also a web log service that allows its users to read and send overtly invisible messages called tweets. This invisible messages " Tweets" are text-based posts or status of up to 140 characters show on the user's profile page. Users may subscribe to other users' tweets (Broughton et al. 2009: p.7).

Twitter uses a pattern of free micro-blogging, which lets users receive and send short public messages named tweets. Tweets are restricted to at most 140 characters, and can involve links to web pages, blogs, videos, images, and all other applications online. Users can begin tweeting in ten minutes, anytime, from their smart phones, computers, or tablets. By following other users and resources, one can develop an immediate, personalized Twitter feeds that describes a full range of benefits, both academic and personal. Many of academics and researchers at all stages of knowledge and throughout all disciplines already use Twitter daily (Mollett et al. 2011: p. 1).

## 2.4 Extraction Tool

People use social media to communicate their ideas and thoughts, and to spread important news. Since Twitter has become an important communication medium, it attracts more than (255 000000) active users tweet over (500 000000) "tweets" each day. As well as, with the large size of data interchange happening each day, it is an extremely defiant task to progression these data and later out the significant and relevant information. Furthermore, tweets can find outstanding information that enable: exemplify the profile of user, describe geographic areas, or just know the present topics of attention at a given time. Twitter users deal with a lot of information, which is hard to accommodate. Thus, it is significant to employ techniques, which can find information that is useful, like data mining (De La Cruz & Paola 2013: p.126)

Vianna et.al (2008: p.1-2) stated that personal information are widespread as digital devices are catching all part of our lives. Data is permanently gathered and saved by users, whichever actively in emails, social media communications, multimedia objects, calendar items, contacts, etc, or passively by different applications such as GPS tracing of mobile devices, archives of utility use, records of monetary dealings, or quantized self-sensors. There are some basic defies for personal data mining count on: (1) huge size of data, (2) spread through devices and cloud services, and (3) saved in hypothetically very different designs in different places.

Moreover, extraction tool characterized with its ability to access a different of obtainable services and recovering and packing users' data, since such ability represent critical phase to the enhancement of an individualized context- aware individual data administration device. Extraction tool seeks to collect personal data of twitter users and then presented a careful analysis of the collection of this data, as this operation supports the hint that: it is difficult for the user to manually manage and extract knowledge from their own personal data without the support of a tool for personal information management (Vianna et.al 2008: p.1-2).

The process of creating extraction tool includes: creates a personal information database, specified, and applied access to different information resources. Store the under-lying personal data in a flexible format implement data integral, search, and discover knowledge. Furthermore, the extraction tool recovers information from a large range of resources: social data (Facebook, Twitter, LinkedIn, Google+), Geolocation data

(Foursquare, GPS), personals (local \_le system, Drop-Box), Email (Gmail), Calendar (Google Calendar), Contacts (Google Contacts). Moreover, data are log on over separate system APIs (when available), IMAP (for email retrieval). In addition, the data gathered contains content, structure, and explicit and implicit context. Besides that, the extraction tool derived additional contextual data, extracts time and location (when available) from every object, it has processed, and augments it with historical weather data recovered from online resources (Viannaet.al 2008: p.1-2).

According to (Piskorski and Yangarber (2013: p.24) summarized the task of Extraction tool in the p process of identifying a specific set of pre-concepts in a particular area, and ignore other relevant information, since a domain contain a corpus of texts together with a clearly specified information need. Arguably, extraction is a tool that seeks to do extracting information from a range of unstructured texts, such extraction process include. Identify some of the structures on a small scale, such as noun phrases indicate a person or people, geographical references and numerical phrases, finding the semantic relationships between them. As is the case in such a scenario, is the need to have some knowledge of a particular field (understanding of the fact that the terrorist attacks could lead to people being killed or injured) in order to compile information extracted partially correctly in a structured form (Piskorski and Yangarber 2013: p.24)

## **2.5 The Proposed Application "Twitter Box"**

Twitter Box can be defined, as a powerful of broadcast television systems brand of the channel, and can be accessed through a standard Web browser. Twitter Box lets the developers of program production and presentation to merge comments from different social network feeds quickly and efficiently in a single stream ready for-broadcast. Furthermore, Twitter Box is a client / server application to use and store data on SQL basis and to promote multi-user opportunities as well as multiple outputs. A single application that can be used across different TV programs and channels. Multiple user accounts may be set, each account then being able to create custom feeds. It can also be configured as private to access each feed, which can be accessed by specific users or available to all users. Twitter box application may contain the following according to (Zubiaga, Ji& Knight 2013: p. 5-6)

- **Selection of Representative Tweets:** to provide a range of representative tweets that defines the main contents of the story being analyzed.
- **Most Frequent:** to determine the most common tweet like those that best equals with the vocabulary used in the entire chat. To find this tweet, each tweet weighs in the story collection frequency of each semester in the whole story. It is assigned a tweet with the most common terms as a highest weight.
- **Modern:** Modern tweet making the biggest change from the tweets were seen in the past few days. The idea of choosing this Tweet is to get rid of those tweets that are repeated in many of the stories trending on Twitter. Thus, it can extract a tweet that is more versatile than the usual tweets. Moreover, this Tweet will be the one that the total diversity values over conditions.
- **Earliest:** Find the nearest or earliest tweet with a common vocabulary compared later tweets in the well. Thus, select a tweet containing one of the top three terms in the story as soon as a tweet or as the nearest tweet. Moreover, showing the nearest tweet as one of the selected neatness tweets, and this also allows users to display the time of beginning the story on Twitter, which appears on the header, next to the title of the story. Therefore, on the interface, tweets grouped into two types: (a) break the tweets, which include most of the Retweet, most commonly, and fashionable, and (ii) the nearest tweet.
- **Users:** extraction tool extract the top users who tweeted or received by others in a conversation. This allows the generation the group of top users that are related to the story. User information does not only include the user's name, but also including a description and location of the user, when available.
- **Images and videos (Media):**each of the media is accompanying by the tweet (s) that contain it, as well as top connected users. Various from the Twitter's original interface, which is exclusive to the thumbnails, the added context aim to explain of the media, also to recognize the top sources.

## 2.6 Summary

In conclusion, the importance and the publicity of social media has doubled as a logic result of the speedy revolution and changes in technology, like computers, cellular, iPhone. Which is used anytime and anywhere, firms and organizations are utilizing social media increasingly as a new way to reach customers in more easier way and more effectively, and to publish news of their actions more speedily. Furthermore, social media

platforms are considered to be continuously advanced boundary for firms and organizations investigations and seeking to achieve and attract new business and induct best expertise and talent. As is the case with the large size of data and information exchange happens each day, it is a difficult task somewhat to handle this data and later out of the important and relevant information. (Katsios et al. (2015: p.1-2).

This chapter viewed some significant and related concepts and aspects to achieve main aim of the research: social media concepts and its wide spread and use. Then shed the light on twitter. Furthermore, the chapter provided some details about extraction tool, and social media box as extraction tool.

## **CHAPTER 3**

### **APPLICATION ANALYSIS AND DESIGN**

#### **3.1 Introduction**

Before research descend into work area, need to define the meanings of some of the fundamental phases, even if it is a "one man band" like who is" doing it everything" of software by itself, the four life cycles need to be an integral , understood part of daily IT life if a developer want to achieve success.

These are four fundamentals phase in most, how it will be built if not all software engineering methodologies, these are( analysis, design, implementation and testing) these steps have to take place no matter what design process that a developer use or whether work opt to develop in-house or via a software development company.

Most importantly, these steps can't be skipped over or skimmed on. Each phase is a critical process for assuring that the finished of application is something worth the time, money, and that deserve effort the spending on it.

#### **3.2 Authentication Twitter**

Twitter provides two factor authentications as a security process for user's identity. Two factors authentication is one of the most important methods used in our daily life for a user authentication that tries to access an account for both online and on a personal computer. Two factor authentications are based on two things: something users know (password) and something users have (mobile phone linked to the account or USB key associated with the account) (Dmitrienko et al. 2014).

To complete the authentication process, this requires verification of user personality and legitimacy to log in to the account so the user must enter the correct password and then user should be used a secret symbol that generated by device that user have associated with the account. Thus, even if anyone knows the password for another account at Twitter, it will not be able to access it without being in possession of the person-concerned mobile phone, which doubles twitter account security several times(Dmitrienko et al. 2014).

### 3.3 Application Analysis

Web services create APIs through which external applications can query or manipulate content on websites. Twitter Box provides interfaces to query Twitter for data based on certain filters. It is an application to preview, select, and extract the feeds from the different pages on Twitter in addition to display them by easy and flexible mannered and suitable way for all types of users, and suggest system to increase the speed of movement among published information to save users time.

Twitter Box is a web-accessible client/server application for previewing, selecting, editing, and extracting feeds from Twitter for the purposes of displaying on a single screen. It is a customizable Twitter user interface allowing the user to follow tweets from various pages on a single screen. This is extremely useful for TV shows, channel and who interested to follow any type of news pages, which have fan pages on different web sites. Comments from those fan pages can be viewed on a single screen, easily selected, edited and placed in a customized list, which can be displayed. This can be done in real time and is very suitable for live shows, where speed is essential. In order to display Twitter box feeds as on screen graphics that need to integrate Twitter Box with Title Box.

The Twitter Box will consist of two main modes that are a home page to display feeds of all social media that are integrated, as well as a setting menu. The home page will combine view of many vertical sections; it will consist of the following submenus:

- Tabs section: create multiple Tabs giving them thematic names (like Sport, Music, News, etc.) users can load as many feeds in the Tabs.
- List section: add an item in your customized list.

On the other hand, the setting menu will consist of the following submenus:

- User Settings: viewing and editing user personal details and view the system's login history.
- About: viewing product information such as product name and version, as well as user license type.
- Logout: to log out of the system.
- Manage System: viewing and editing the available user accounts and integrate social media accounts and Title Box configurations with Twitter box. The Manage System submenu consists of the following items:

- TV Channels: creating TV channels and editing all available TV channels configurations.
- User Accounts: creating user accounts and editing the available user accounts.

Twitter Box has three pre-defined roles: Super Admin, Admin for a single channel and user for a single channel. Each role defines a set of actions (capabilities) a user assigned a role is allowed to perform:

- 1) Super Admin: somebody with access to all available administration features and all other features in Twitter Box. There might be more than one Super Admin in the system, as long as the owner is willing to create them in Settings>System Manage>User Accounts>Create User Account. The following capabilities are available to Super Admins: Have a full access to all available menu settings (including the Manage System feature) with ability to operate within all TV channels in the system, i.e. to create Tabs, to feed them with content, to create Lists and to output feeds.
- 2) Admin: somebody who has access to all administration features within a single TV channel and it is able to operate within it. All administrators have the following capabilities that they are able to configure some menu settings concerning their channel in Settings>Manage System>TV Channels>Edit TV channels setting and assign new users to the channel in addition to a ability to operate within the TV channel(s) that they are assigned to, i.e. to create Tabs, to feed them with content, to create Lists and to output feeds.
- 3) User: they have limited capabilities. They can only select feeds from the Tabs, create Lists and output social media content within their channel.

### **3.4 Technologies Used**

This section will present a brief overview about the technologies used for building the system for collecting data in Twitter Box as well as preparing further analysis.

- Operating system and platform: operating system (OS) is the most important program that runs on a computer. It is used to run programs and applications and to perform basic tasks. The term platform and operating system to mean the same (Windows and MAC are two platforms or operating systems) but it comes to different versions of windows (Windows XP, Windows 7, and



Windows 8...). The Twitter Box is compatible with Windows 7 or newer. Both 32bit and 64-bit versions are supported.

- Browsers: A web browser is a software application for retrieving, presenting, and traversing information resources on the World Wide Web. Although browsers are primarily intended to use the World Wide Web, they can also be used to access information provided by web servers in private networks or files in file systems. The Internet Explorer browser and Google Chrome browser are supported with Twitter Box.
- RAM – 2 GB: 2GB is 2000 million "characters" (2GB) is for storage space it is how much data it can hold. Twitter Box application need for 2 GB from the RAM.
- Minimum hard disk space – 1.5 GB.
- WiBu key driver – version 6.30b: WiBu key driver is a hardware protection key for ARCHICAD and other Graph iSOFT products. Twitter Box application will use WiBu key driver – version 6.30b.

### **3.5 Application Database**

Twitter Box is client/server application using SQL-based data storage and supporting multi-user access as well as multiple outputs. A single application can be used across several television shows and channels and other important fields, multiple user accounts may be assigned each account then being able to create customized feeds, access to each feed can also be configured as private, accessible by designated users or available to all users.

As shown in figure 3.1, application database as described by database schema: entity relationship diagram (ERD). ERD is data modeling technique that graphically represents an information system that illustrates the relationship between users, entities or events within system. It comprises of:

- Users account settings.
- System users' sessions.
- Input plug-in setting Twitter.
- Feeds.
- Thematic feed tabs.
- Input plug-in cache Twitter items.

- Tabs feeds mapping.
- Input plug-in fetch status Twitter.
- statistics \_output
- selected lists
- selected items



## **3.6 User-Testing Method**

### **3.6.1 Definition and Importance**

Application usability is very important to success so it helps to improve the accuracy of web and detects errors. If the application is difficult to use, users will leave. Also, if the main page of an application has failed to show what users want as well as the complexity of dealing with application, they will leave. For example, in E-commerce web sites, if the users could not find what they want from the product, they will not be able to buy it. So websites must facilitate finding what users want by providing a search function or by ordering website ranking to become much easier to get products (Hasan2014).

The evaluation needs a genuine environment, where it is supposed of people who were asked to assessment has never dealt with the application which giving extra real value that helps designer to detect errors. To check usability of the application and how to improve it, designers must test their work. This is done through several methods and techniques that vary depending on the stage of the application itself. There are many ways and methods of usability testing that include user testing method through user monitoring, data collection methods after use by questionnaire or personal interviews, heuristic evaluation, participatory design, quality assurance testing, etc. (Hasan2014).

User testing method is considered as one of the most popular methods of usability methods. User testing method represents the relationship between tools and their beneficiaries, and it is a powerful tool that allows users to perform, manage and use tasks in the best way possible. The application of the current research will test end-users (5 users from Jordan) by applying a user-testing method, after which, they will evaluate and provide their perceptions about application usability (Badr et al. 2015). This method is based on selecting the target that designer want to achieve, for example: testing the extent of success of the application in achieving the goal of an intuitive user pages, follow-up and access. Then, the target passes the performance standards that have been pre-selected to answer the following question: is the goals that are tested achieved or not?

According to Badr et al. (2015), the importance of conduct this test stems in the following things:

- User testing breaks the wall between the developers of the application and its users.
- Making application developer see how users deal with the application on the ground.

- Detecting errors during the development of the application before completion.

### **3.6.2 The Test Requirements**

Before conducting the research, the researcher must make sure of the following things:

- Determining the testing place
- Equipped computers and internet access before the test starts.
- Users have twitter accounts.
- From 3 to 7 users, it should make sure they have not already used the application.
- A way to jot down notes quickly.
- Determine what should be tested.
- A way to record the user testing (audio/video recorder)

### **3.6.3 The Test Procedure**

- When the users come in, designer should disclose the main objective to users as a new application contains errors and you want to explore those problems to fix.
- Before testing starts, designer asks him or her to share anything that you might have in mind through testing audibly.
- Before giving the users the first task, designer ask him or her to postpone any questions that are going on in his mind during the implementation of the task to the end of it, and alerts you when it ends, both of which could be implemented or despaired of them.
- Giving the users the first task, then watched their actions at the application silently and without feedback directly.
- After the end of doing all the tasks, designer takes him or her opinion about the testing by making interview and thanks him or her for the help.
- Summed up the testing and the problems that faced by the user clearly and understandable.

## **3.7 The Performance Standards**

In this research, Twitter box application will be measured by four main performance standers, namely: learnability, usability, accessibility and satisfaction, and it emanates from each of the standards set of indicators that used in evaluating the quality of application.

- 1- Application learnability: is a measure of how easy a website is to learn, or how fast first time visitors can complete tasks on a website. It can be measured by the following principles:
  - a) Efficiency: what time are users take to learn?
  - b) Accuracy: what are the numbers of errors that make?
  - c) Memorability: are tasks that users have made easy to remember?
  - d) Intuitive: is an application designed to be intuitive?
- 2- Application usability: It can be measured by the following principles:
  - a) Availability: to what extent an application is functional to perform tasks?
  - b) Simplicity and obviousness: is an application simple to be used?
  - c) Familiarity: to what extent a user's recognize user interface components and views?
  - d) Consistency: how are elements placed in an application?
  - e) Flexibility: does an application have several different options that enable the user to achieve the tasks?
- 3- Accessibility: It can be measured by the following principles:
  - f) Perceivable: to what extent application information pages and interface components are clearly available?
  - a) Operable: to what extent users are able to operate and navigate application interface?
  - b) Understandable: are content and language used in application clear and understood?
  - c) Robust: is an application design strong and structured?
- 4- Satisfaction: It can be measured by the following principles:
  - a) Impressionable: is the user feel more comfortable with the application?
  - b) Interesting: does the user feel that the application added value after using the application?
  - c) Enjoyable: does user feel pleasure when use the application?
  - d) Positive emotions: does the user feel excited when use the application?

## **CHAPTER 4**

### **APPLICATION IMPLEMENTATION AND EVALUATION**

The main objective of this chapter is to implement the application analyzed in the previous chapters followed by evaluating the application using user testing method. To achieve the purposes of this research, this chapter will present an experiment in a real environment in which the application could be implemented and evaluated.

#### **4.1 The Requirements for implement the application (Twitter- Box)**

For implement, the application of (Twitter- Box), the system needs some requirements to verify that the server or workstation, these system requirements must be checked before start the installation process, which are:

- Operating system and platform: this version of Twitter box is compatible with Windows 7 or newer, both 32bit and 64bit versions are supported.
- Browsers: the following browsers are supported with Twitter box.
- Firefox
- Google Chrome
- RAM – 2 GB.
- Minimum hard disk space – 1.5 GB
- Twitter account and application.

#### **4.2 The Experiment of Twitter Application (Twitter- Box) in a real Environment**

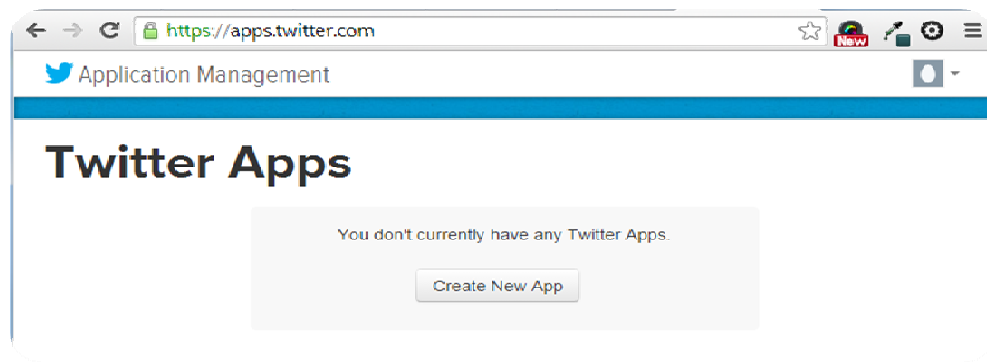
To experiment the Twitter Application (Twitter- Box) in a real environment, this section will provide an explanation about the Twitter application-programming interface (Twitter API), the installation of the application, and application implementation.

##### **4.2.1 The Twitter Application Programming Interface (Twitter API)**

API Twitter is a way to reach software interfaces for applications which allow users to read and write data from their accounts at Twitter in addition to identify the account holder and information about observers. Webmasters need twitter API information in additions,

in the squares and many other things, but the study begin in explain how to create a new application. The following steps show that:

- 1- Go to (apps.twitter.com), sign in with the personal account and click Create New App.



**Figure 4.1:** Interface for Create New App in Twitter

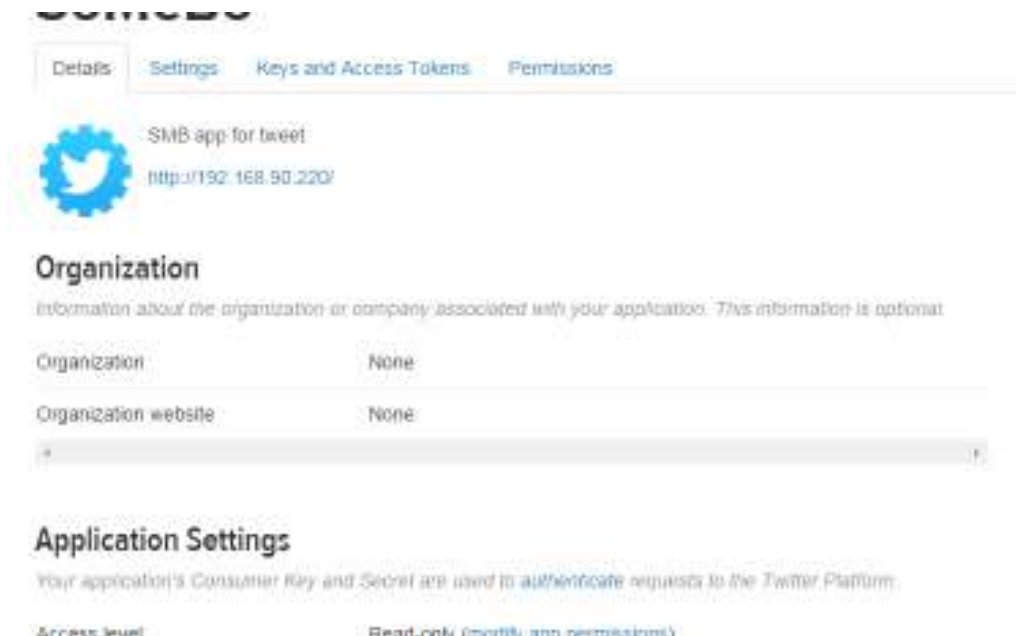
- 2- Enter the application Name (e.g. Twitter Box), Description and Website. Read and accept the Developer Rules of the Road, then click Create the Twitter application.

A screenshot of the 'Application Details' form. It contains four input fields: 'Name', 'Description', 'Website', and 'Callback URL'. Each field has a red asterisk indicating it is required. Below each field is a small line of explanatory text. The 'Name' field has a note about character limits. The 'Description' field has a note about character limits. The 'Website' field has a note about the URL being used for attribution. The 'Callback URL' field has a note about OAuth 1.0a applications.

**Figure 4.2:** Interface of steps for Create New App in Twitter



- 3- The following screen contains details about the newly created application. Navigate to the Keys and Access Tokens tab and copy the application's Consumer key and Consumer secret to a safe location.



**Figure 4.3:** screen for contains details about the newly created application

- 4- On the Keys and Access Tokens tab, click (create my access token) and copy the application's Access token and Access token secret to a safe location.

NOTE: The Access token and Access token secret codes are required to complete the Twitter Box installation.



- 2- Access by the default local host address (127.0.0.1) or by typing localhost.
- 3- Install the phpMyAdmin step for logging.
- 4- Run the Twitter Box executable files (code files).

### 4.2.3 Application Implementation

The implementation of the application will be through the following steps, at first the main page of Twitter Box as shown in Figure (4. 5)



Figure 4.6: Twitter Box user interface (Main Page)

#### 4.2.3.1 Integrate Twitter Box with Twitter

To integrate Twitter Box with Twitter you should fill in the following form. Once user is registered as a Twitter developer, you are given the Consumer Key (API Key), the Consumer Secret (API Secret), the Access Token and the Access Token Secret. Copy and Paste them in the relevant fields and click save. User can access it by click on Settings > Manage System > TV Channels > Edit TV channels.

<b>Add On</b>	2015-04-02 12:06:34
<b>Add By</b>	Super Admin Account
<b>Mod On</b>	2015-04-06 14:02:16
<b>Mod By</b>	admin1
<b>App Name</b>	QA SMB Test1
<b>Description</b>	
<b>Consumer Key (API Key)</b>	4zsEPPS31ZD97ZQUm00eZXlPl
<b>Consumer Secret (API Secret)</b>	8lOfc9mGUXDZ726cnAxW7RBS9p2aOSktZN4M
<b>Access Token</b>	3131261279-c8pmNzXoA4fPr1bEwqQEsVvS22Z
<b>Access Token Secret</b>	JStfvxjcRRB6NYfCOZwnGVot54GNBXaho2Sy8M
<div>Save</div> <div>Cancel</div>	

**Figure 4.7:**Form to integrate Twitter Box with Twitter

When you run the application as a user or an admin, you will be prompted to select your TV channel on the right of the home page. See the screenshot below:

#### 4.2.3.2 Create TV Channel

To go to Create TV Channel: Navigate to the Settings Menu, click Manage System>TV Channels>Create TV Channel. The following form is available for you to create a TV channel by entering the corresponding name in the field below.

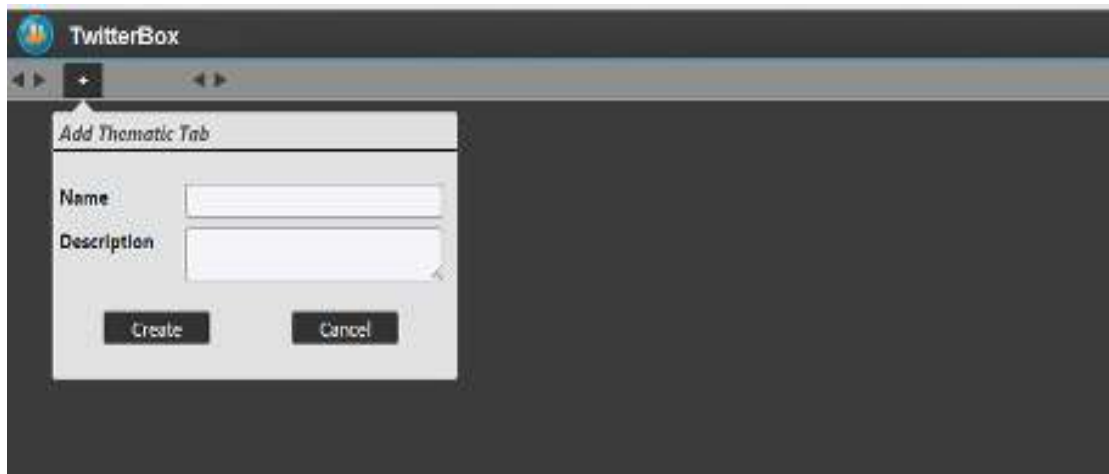


**Figure 4.8:** Form of create a TV channel step1 (select TV channel)

The screenshot shows a web application interface for creating a TV channel. The breadcrumb trail at the top reads: 'Manage System > TV Channels > Create TV Channel'. On the left, a sidebar menu includes 'User Settings', 'About', 'Logout', and 'Manage System' (which is highlighted). Below the menu, there is a section titled 'Using the TV Channel' with a description: 'This is a TV channel that is used to display the TV channel information. It is used to display the TV channel information. It is used to display the TV channel information.' The main form area contains three input fields: 'Name', 'Description', and 'Additional Info'. At the bottom of the form are two buttons: 'Create' and 'Cancel'.

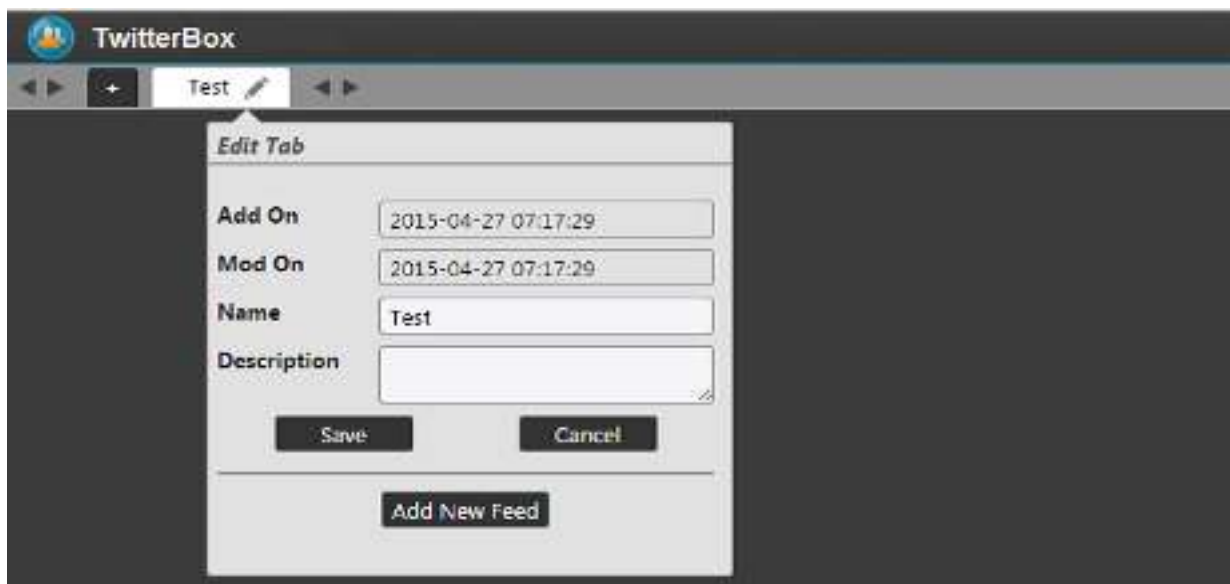
**Figure 4.9:** Form of create a TV channel step2 (create a TV channel)

If users are opening this channel for the first time, the next step you will be prompted to perform is to add a Tab in the upper left of the screen:



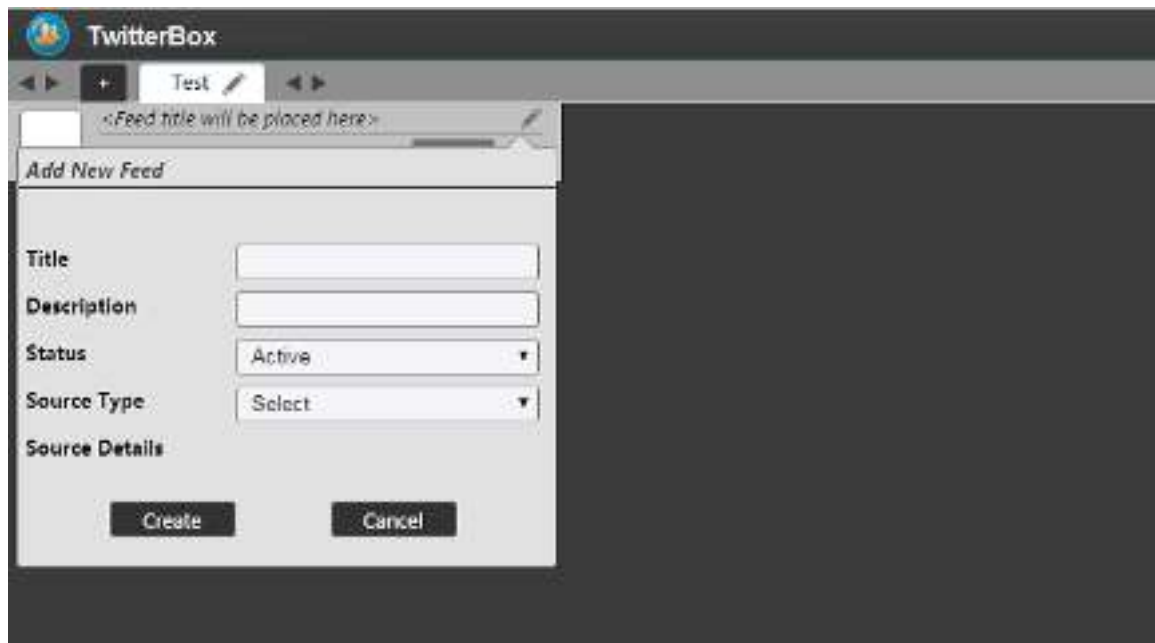
**Figure 4.10:** Form of create a TV channel step3 (add Thematic Tab)

Type in a desired name in the uppermost field and enter a description of the list in the field below, then click Create. Keep in mind that once you create a Tab you are not able to delete it. After the new tab is added, click on its name. A notification message in a pop-up window will appear in the bottom left corner saying that This Tab does not have Feeds! Then click the Edit Tab button. The following dialog will appear:



**Figure 4.11:** Form of create a TV channel step4 (Edit Tap)

Click the Add New Feed button

The image shows a screenshot of the TwitterBox application interface. At the top, there's a header bar with the TwitterBox logo and a tab labeled 'Test'. Below the header, there's a section titled 'Add New Feed'. This section contains several input fields: 'Title' (with a placeholder text '<Feed title will be placed here>'), 'Description', 'Status' (a dropdown menu currently showing 'Active'), and 'Source Type' (a dropdown menu currently showing 'Select'). Below these fields is a section labeled 'Source Details'. At the bottom of the dialog, there are two buttons: 'Create' and 'Cancel'.

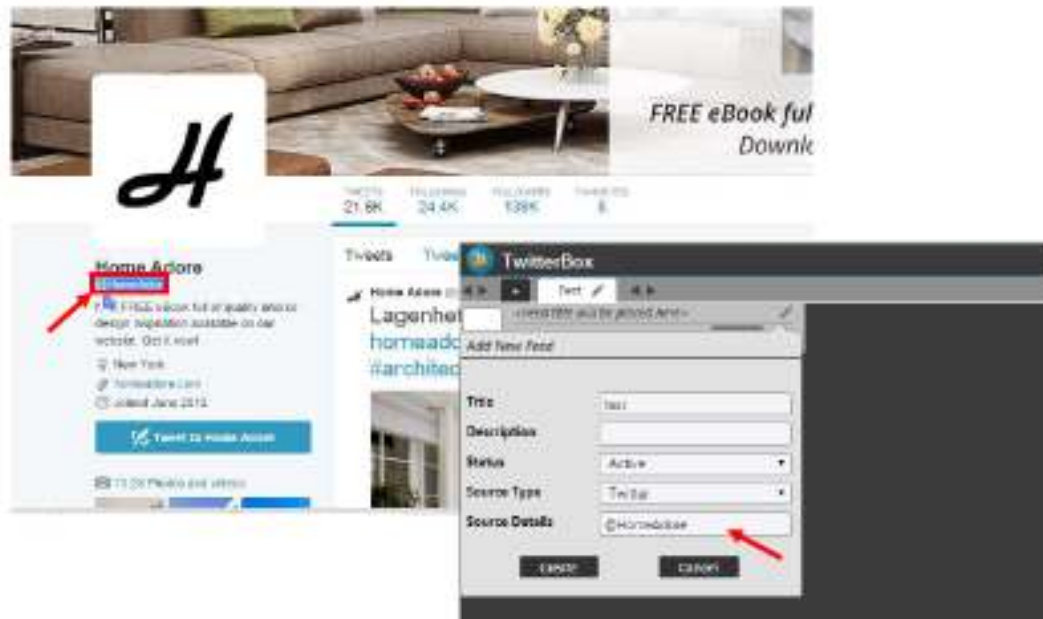
**Figure 4.12:** Form of create a TV channel step5 (Add New Feed button)

Enter a title and a description in the respective fields, and then select a Status from the dropdown list. The Active status will enable constant receiving and updating of Twitter feeds, while the Do not update status will disable receiving any new Twitter tweets. The Archive status will make the feed inactive and will delete the feed after you switch between different tabs. In the Source Type field select a social media as a beginning currently support only Twitter and for sure next future will do more options.

#### **4.2.3.3 Loading feeds from different social media**

Currently, Twitter box supports integration with Twitter, If users select Twitter they search for the desired account you want to follow. Possible feeds that are displayed here are #HashTag and @ScreenName. Once you find the profile, simply navigate to the username preceded by the “at” @ sign (@username) or #HashTag and copy-and-paste it in the Source Details field in Twitter box:





**Figure 4.13:** Loading feeds from different social media step1 (Add new Feed)






Click Create to verify. To close the window click Edit Feed button over again. Wait for the feed to load. It takes few minutes. Each item displays the avatar and the name of its publisher in the upper part, the content of the post, which in Twitter is limited to 140 characters, as well as the date and time when the post was created.



**Figure 4.14:** Loading feeds from different social media step2 (The new feed)



#### 4.2.3.4 Feeds' View

Items in each feed section are ordered from newest to oldest, where the newest ones are added on top. In terms of feed sections' organization on screen, each newly created Twitter feed is arranged first from left to right on the home page. In the upper part of each feed section you can see the social media avatar and the user-customized name given to the feed. You can edit the feed using the Edit Feed  button in the upper right corner. To close the Edit window, click the pencil button over again. Here you can also manually refresh the feed via the reload  button. In the Click to mark all items as Read  button you can view the number of items marked as READ out of the current number of items in a section. Clicking on this button will mark all new items as viewed. Notice the unpinned  /pinned  mode, placed in the top right corner of each item section.

NOTE: Keep in mind that once you click your mouse pointer on an avatar item in a feed, the system marks it as Read. If there is more than one Tab in a channel and you switch between them or place, unpinned items will disappear or you move the mouse away from this feed is also will disappear.

However, the system is designed so that users do not miss any post that is received in any of the feed sections. This is done via an unpinned or pinned mode for each item. Whenever an item is pinned, this means that it will NOT be removed. Thus, even if you switch between different tabs, if the items are all pinned they will be kept. The pinned items go down in the list after the new ones that load up.

.



**Figure 4.15:** Feeds' View


TIP: You could delete a feed by giving it an Archive status. Then switch between different tabs to make it disappear from the screen.

#### **4.2.3.5 List**

The list section is located in the rightmost part of the screen. It always stays on top of the other feed sections of the screen and it is the place, where users can put the selected posts from the feeds that you follow and transmit to Title Box. This is done by drag-and-dropping the desired items to the list section.

Items are moved by clicking on their avatar. When you drop an item in the list you can place it on top of the list or between two items. Furthermore, you can rearrange the items in the list.

#### **1- Manage List button**

In terms of placing and storing items in a list you should either create a customized list or Open an existing one. Navigate to the upper part of the list section and click the Manage List  button in the right corner. If there aren't any lists created for the current channel the system will prompt you to create a list as shown below:

Logged in as **Super Admin Account** | Twitter\_darah

Darah's list

**Manage List**

Create List Edit List Open List

Edit List

Add On 2016-08-16 08:28:45

Mod On 2016-12-26 17:01:38


Name Darah's list

Description

Save Cancel

**Figure 4.16:** Manage List (Create List button)

There are three tab buttons in the dialog, which are Create List, Edit List and Open List.

- Create List button: this tab button's use is displayed in the screenshot above. It allows user to create a new list. Multiple customized lists can be created. Here, user should enter the details of the new list. Name the list in the uppermost field and enter a description of the list in the field below. Once it is ready, click Create to confirm the new list, or click Cancel to discard the list creation.
- Edit List tab: use this button if user would like to change the details of the currently selected list. Each list can be edited by the users who have access to it. If user would like to edit the currently selected list, click the Manage List  button in the upper left corner of the list. An edit form will be invoked.

**Manage List**

Create List Edit List Open List

**Edit List**

Add On 2016-08-16 08:28:45

Mod On 2016-09-02 10:57:13

Name Darah's list

Description

Save Cancel

**Figure 4.17:** Manage List (Edit List button)

- Open List Button: if user would like to open or to switch to one of the existing lists, click this button. User will invoke a form containing a register, which has all existing lists. Then simply select the desired list.

**Manage List**

Create List Edit List Open List

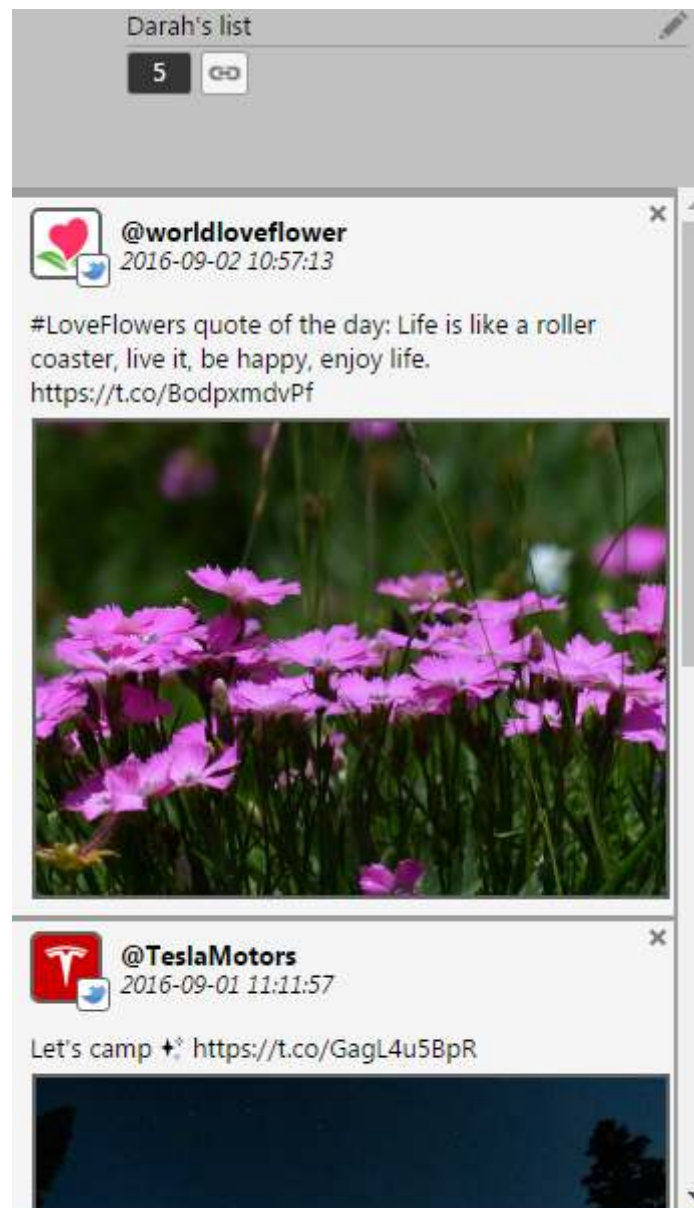
**Open List**

Darah's list

important items

**Figure 4.18:** Manage List (Open List button)

After user create a list and drop some items in it, the list section will look like the image below:



**Figure 4.19:**theuser-selecting list


The main part of the list is filled with items, which have been added from the feed sections. Twitter feeds are not editable because of Twitter's policies. User can rearrange the items by drag-and-dropping them. User can also delete an item by clicking on the X in the upper right corner of the desired item.

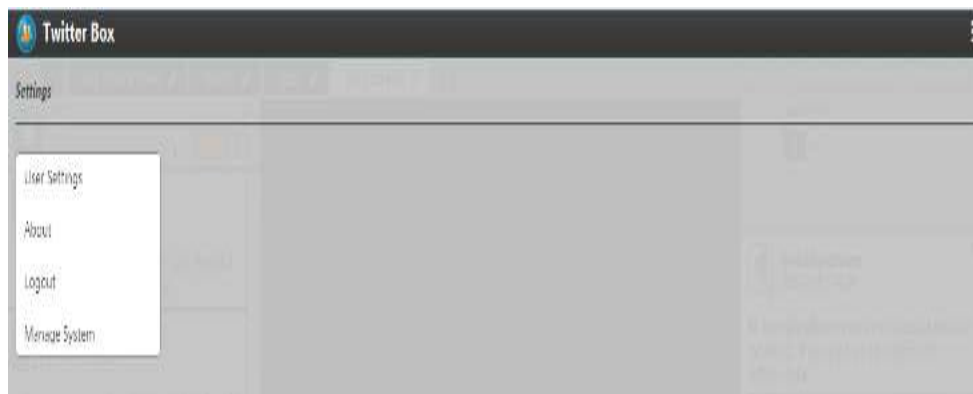
#### 4.2.3.6 Item progress bar

The Item progress bar is placed at the top of the list section.

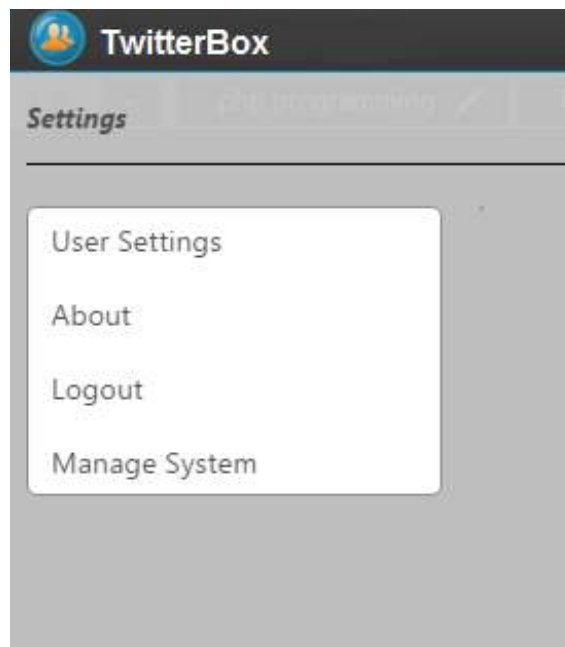
- This counter displays the total number of items in the list.----(4)
- Here users can extract the list's content as JSON feed.

#### 4.2.3.7 Setting menu

Switch to this page by using the Menu button  in the top left of the screen:

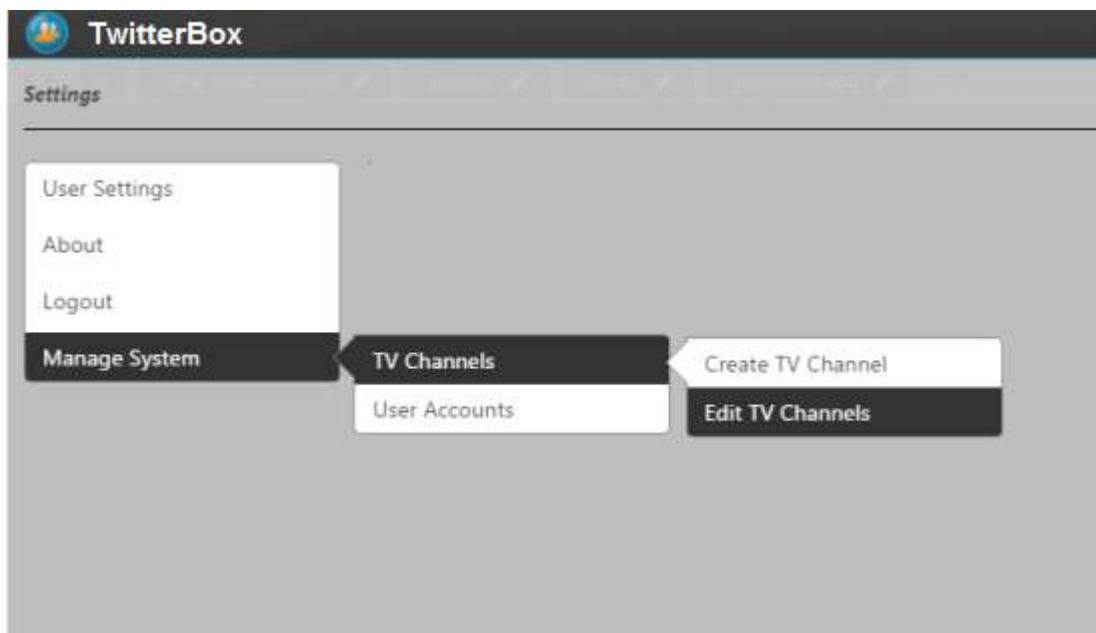


**Figure 4.20:** Setting menu



**Figure 4.21:** Setting menu interface

- User Settings: here user can view and edit your personal details and view the system's login history.
- About: here user can view product information like product name and version, as well as your license type.
- Logout: use this option to log out of the system.
- Manage System: here can view and edit the available user accounts and integrate social media accounts and Title Box configurations with Twitter box. Let us look at this menu command more closely.



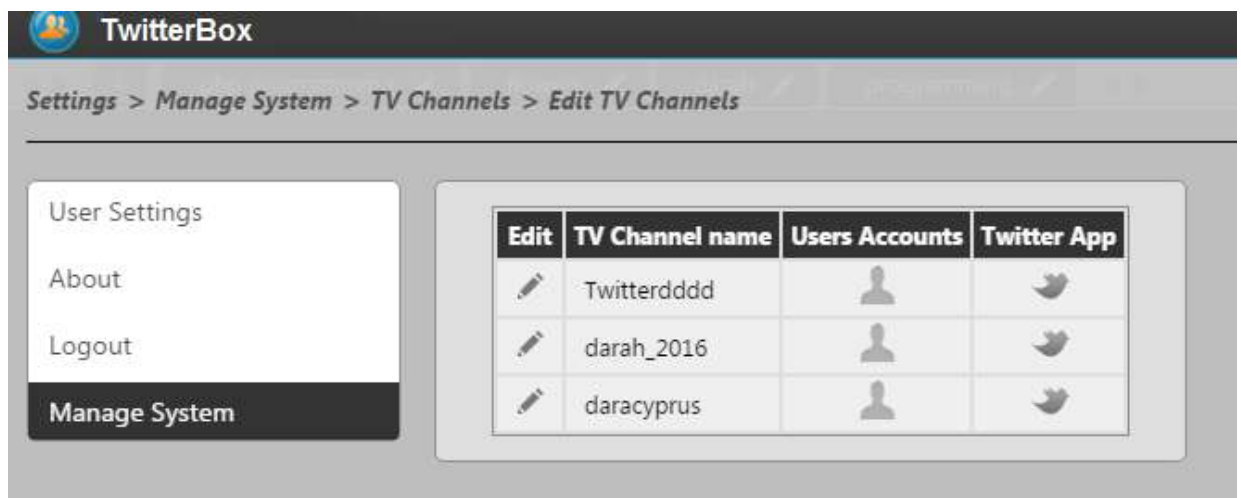
**Figure 4.22:** Setting menu for Manage System

#### 4.2.3.8 Edit TV Channels

To configure Edit TV Channels: On the Settings Menu, click Manage System>TV Channels>Edit TV Channels. In this page users are able to manage already existing TV channels.

Note: TV Channel name - To change a TV channel's name, click the corresponding Edit button.

Further on this section, user will get detailed information about the rest of the columns' functionality in this table as follows:



**Figure 4.23:**The interface for Edit TV channels

#### 4.2.3.9 User Accounts

Once user have created user accounts in Manage System>User Accounts>Create User Account, users are able to assign them to chosen TV channels. Click the corresponding User Account icon to view all available users in the system. To see the hidden users listed below, use the bottom screw of the screen:





**Figure 4.24:**The interface for Edit User Account

- The Super Admin column displays the users who have Super Admin rights in the system as a whole. This column's function is only informative and it doesn't refer to a concrete TV channel.
- The Assign User feature consists of the Assign /Unassigned button . Click this button in order to switch between the two commands for the currently chosen TV channel.
- The User Role column allows you to define a role for the assigned users giving them different rights to operate within a channel. From the drop-down list user can choose between User and Admin roles.

## 4.3 Evaluation of the Application

### 4.3.1 Interview Results

The research study has considered interviewing user's sample consisting of (5) users (who used the application), to determine their views and sensitivities regarding Twitter box application. These interviews took place after the test had finished. The interview sample was made up of five users who never used with Twitter box application before. The main

objective of interview is to verify that questions about performance standards have achieved or not. Users' opinions were as follows:

User # 1: "The application was adjustable and easy to use; I think it's great to follow many pages at the same time where time and effort are abbreviated. Also, navigation between pages was simple and understandable which it contained a lot of options and choices to customize the functionality. I also think that the application will be achieved the goals and desires of the users where basically it was very keen on both the services and functions of the application that were easily and quickly usable".

User # 2: "I felt that application was excited and gorgeous, generally application has many positive aspects such as it is a simple and easy to learn, well-formed content, flexible and innovative interface to use, more than one way to perform tasks and many characteristics seem wonderful. But on the other hand, the application has drawbacks that the designer should take in account during the development stage like there was a clear contrast between text and background color, in addition I think that this application on its current way can lead to addiction thus I suggest to determine the number of pages that follow at the same time".

User # 3: "Frankly, when I ran for the first time it gave me the impression that it is sleek, simple interface, and all the characteristics that make application light such as speed, easy to navigate, freedom of nested menus and options were always present. In addition I think the developer seriously chose interface that characterized by lightness as well as there were no flashy icons or three-dimensional shiny ribbons even the application really feel simply with crisp backgrounds, divisions was clear, and the determinants of color was distinctive attractive and practical".

User # 4: I felt pleasure when using this application and the application was simple where I cannot find any difficulties in understanding the application completely so I expect that most users will learn this application so fast. As I found that application connects directly with page links which work properly as well as the existence of help links on every page, so that the transition to the desired location was correctly.

User # 5: "I found the application was usable and error-free as I noticed there was no need to learn anything and know information in order to perform tasks within this application. Also, I found that design was appropriate for the type of service provided by the application, the different characteristics of this application were well interconnected".

From users' opinions, most of the users assured that the application was adjustable and easy to use, abbreviated time and effort, and navigation between pages was simple and understandable. Add to that, the freedom of nested menus and options were always present, and the different characteristics of this application were well interconnected.

From other hand, other users viewed that the application has drawbacks that the designer should take in account during the development stage like there was a clear contrast between text and background colour. In addition to that, this application can lead to addiction. Therefore, they suggest determining the number of pages that follow at the same time.

#### **4.3.2 Advantages and Disadvantages**

By tracking the users during the execution of the task, the researcher was able to determine some of the main advantages and disadvantages in the user application, as follows:

##### **Advantages**

- Twitter box is cross-platform compatibility.
- The users feel more comfortable enjoyable when using the application.
- Navigation between pages is simple and understandable.
- Twitter box application relatively easy and fast to learn.
- Twitter box is characterized by a wonderful and beautiful interface in addition to that is easy to use, only what users have to do is to select the page they want and click over it and you'll be redirected automatically to a miniature version of it.
- Twitter box is simple, ubiquitous access.
- Twitter box Application design robust and structured.
- The prominent feature is considered as that the application combines all pages in one and this is definitely something wonderful.

##### **Disadvantages**

- Device-specific customization is usually required.
- Twitter box has limited capabilities.
- The users can't upload videos and photos on Twitter box application.
- Twitter box is addictive.

## **CHAPTER 5**

### **CONCLUSIONS AND FUTURE WORK**

#### **5.1 Conclusion**

To sum up, the current research aimed at previewing, selecting, editing, and extracting feeds from Twitter for the purposes of displaying on a single screen. It is a customizable Twitter user interface allowing the user to follow tweets from various pages on a single screen. The current research depends on software engineering methodologies, which are (analysis, design, implementation, and testing) these steps have to take place no matter what design process that a developer use. In the context of these approaches, the current research explored some of previous researches that shed light and made efforts on developing extraction tools area for social media platforms. The current research has developed a simple application called Twitter Box to preview, select, and extract the feeds from the different pages on Twitter. In addition to display those by easy and flexible manner and suitable way for all types of users, and to increase the speed of movement among published information to save users time, besides to added TV channels option. This is extremely useful for TV shows, channel, and who interested to follow any type of news pages, which have fan pages on Twitter. In addition, the research depended on user-testing method to evaluate and provide users' perceptions and views about application usability. A sample size of five users was selected; they have never dealt with a similar application before. The key findings of the research were as bellow:

- Twitter box application had high level of usability in which the application was functional and operational to perform tasks as much as possible where users recognize user interface components and views due to its simplicity and obviousness.
- Twitter box application was easy and simple to learn and remember. This helped to reduce the number of errors that were made by users.
- Twitter box provides a high level security policy as when users want to use it, they will switch to Twitter itself to sign in, where it find at the bottom of the page authority required that the application can access to if users sign in and give these authority for the application.
- Twitter box application had high level of user satisfaction, it was observed through a good interaction by users with the application where they did not feel bored,

confused and frustrated. In addition, the users showed positive emotions that represent joy, comfort, passion and admiration.

- Twitter box application interface design is intuitive where the architecture and navigation of the application can be easy to understand.
- Usability testing method proved its ability to evaluate Twitter box application which it is considered as a primary way that enables application developers to judge on the quality and effectiveness of the user interface design objectively.
- Usability testing method presented benefits and advantages for both user and designer, with respect to the users, they were able to achieve and accomplish their goals, where they were used the application in an efficient, effective and practical manner. Furthermore, the user seemed enjoyable and comfortable interaction in their dealing with the application. According to the designer, this method contributed in achieving advantages in different directions such as reducing the time it takes to develop the application, minimizing design cost, supporting development cost and controlling user errors.

Arguably, it can be concluded that, its appear clearly that Twitter box application had high level of usability in which the application was functional and operational to perform tasks as much as possible where users recognize user interface components and views due to its simplicity and obviousness. Moreover, it was easy and simple to learn and remember. In additionally, this application provides a high-level security policy and this had high level of user satisfaction. However, from other side some of the users viewed that the application has drawbacks that the designer should take in account during the development stage like there was a clear contrast between text and background color. In addition to that, this application can lead to addiction. Therefore, they suggest determining the number of pages that follow at the same time.

## **5.2 Restrictions and Limitations**

From a while, Twitter has imposed some minor restrictions and limitations on the use of an application programming interface (API), but these restrictions were not influence on applications design and development such as the new restrictions that announced today, the new restrictions on the use of the Twitter application programming interface means that we will see the death of applications performance that were used by millions of Twitter users, the reason behind that some of Twitter designers or developers certainly will not be able to interact with these limitations.

In general, there are two types of applications: official and unofficial. Twitter wants everyone to use the official application, which is more controlled than unofficial applications. In addition, Twitter wants all users to view ads that appear in the formal Twitter and its official applications, where the best solution to force users on the use of official applications is to impose very difficult restrictions on developers and designers and this is what we have seen in the new version of the programming interface for Twitter. Twitter box was subjected to restrictions and limitations that described below:

- With the new restrictions, Twitter will request approval to use the programming interface which Twitter will make sure that a new application matches its requirements. Otherwise, it will be prevented from using the programming interface.
- The tweets on twitter box application interface are limited by forty, this means that when the tweets reach number forty one it will deleted number one and so on. As that re-tweets are limited by fifty.
- All applications must be compatible with Twitter requirements in update view, user name views, places restitution, and re-publishing.
- Determining the number of users for each application by one hundred thousand. Thereafter each new user for the application must be approved by Twitter itself.

### **5.3 Recommendation**

In light of the previous results, the research provides recommendations for future work that are summarized in the following:

- The importance of keeping up with the instructions, guidelines and rules provided by Twitter management team.
- The necessity of attention to the issue of usability that should be taken into account when creation of an application, including design, development or re-design, so the success of any application depends not only on the beauty of its design, but also on the extent of its scalability and ease of use.

### **5.4 Future work**

According to the study's results, the researcher can conclude that more research is required to fill some of the gaps in this area of research, as bellow:

- Transmitting this experiment to other social media sites like Facebook and Instagram.
- Diagnosing application shortcomings in the user interface design and the user interaction and treated it. On the other hand, discovering of Twitter box application advantage in the user interface design and promote it.
- Development and improvement of the user interface design.
- Using other usability technique to evaluate the application efficiency and usability.

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