INVENTORY CONTROL SIMULATION

SUBMITTED TO : ÜMİT İLHAN

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THANKS

Firstly I believe that computer engineering department will reach to front part level with my department chief who is Assistant Prof. Dr. Adnan Khashman with newness and understanding education of computer department. Because of his relation and connection to us thanks to him.

Since I registration to the department my adviser who is Mr. Tayseer Alsanableh I want to thanks to him for quide me about the lectures and connection to me.

I want to thanks to my all department teachers for teach everything about computer and particularly Mr. Ümit İlhan who is my supervisor helps for thanks to them.

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```
program Project1;

uses
  Forms,
  Main in 'Main.pas' {Form1},
  AyarlarForm in 'AyarlarForm.pas' {Form2},
  About in 'C:\My Documents\About.pas' {Form3};

{$R *.RES}

begin
  Application.Initialize;
  Application.CreateForm(TForm1, Form1);
  Application.CreateForm(TForm2, Form2);
  Application.CreateForm(TForm3, Form3);
  Application.Run;
end.
```

```
unit Main;

interface

uses
  Windows, Messages, SysUtils, Classes, Graphics, Controls, Forms, Dialogs,
  Grids, StdCtrls, Buttons, ExtCtrls;
Var
   MyString:String;

type
  TForm1 = class(TForm)
    StringGrid1: TStringGrid;
    BitBtn1: TBitBtn;
    BitBtn2: TBitBtn;
    BitBtn3: TBitBtn;
    Timer1: TTimer;
    BitBtn4: TBitBtn;
    Panel1: TPanel;

    procedure PUret;
    procedure SiparisleriKarsila;
    procedure ASiparisVer;
    procedure BSiparisVer;
    procedure BaslangicDurumunuHazirla;

    procedure FormCreate(Sender: TObject);
    procedure BitBtn1Click(Sender: TObject);
    procedure BitBtn2Click(Sender: TObject);
    procedure BitBtn3Click(Sender: TObject);
    procedure Timer1Timer(Sender: TObject);
    procedure BitBtn4Click(Sender: TObject);
  private
    { Private declarations }
  public
    { Public declarations }
    ABaslangic          :integer;
    BBaslangic          :integer;
    PBaslangic          :integer;

    AMin                :integer;
    BMin                :integer;

    SimulasyonSuresi    :integer;
  end;

var
  Form1                 :TForm1;
```

```
implementation

uses AyarlarForm, About;
var
  A                    :integer;
  B                    :integer;
  P                    :integer;

  A_SiparisGelisi      :integer;
  B_SiparisGelisi      :integer;

  GecikenSiparis       :integer;
  ToplamSatistaGecikme :integer;
  ToplamUretimdeGecikme :integer;

  Gun                  :integer;

{$R *.DFM}

procedure TForm1.FormCreate(Sender: TObject);
begin
   MyString:='Near East University - İbrahim Arı - 940100    ';
   Application.Title:=MyString;
   Form1.Caption:=MyString;

   Randomize;

   AMin:=12;
   BMin:=14;

   ABaslangic:=22;
   BBaslangic:=21;
   PBaslangic:=3;

   SimulasyonSuresi:=60;

   StringGrid1.ColWidths[0]:=30;
   StringGrid1.ColWidths[1]:=30;
   StringGrid1.ColWidths[2]:=30;
   StringGrid1.ColWidths[3]:=30;
   StringGrid1.ColWidths[4]:=70;
   StringGrid1.ColWidths[5]:=81;
   StringGrid1.ColWidths[6]:=91;
   StringGrid1.ColWidths[7]:=46;
   StringGrid1.ColWidths[8]:=46;
   StringGrid1.ColWidths[9]:=71;
   StringGrid1.ColWidths[10]:=71;
   StringGrid1.ColWidths[11]:=101;
   StringGrid1.ColWidths[12]:=101;
```

```
    StringGrid1.ColWidths[13]:=101;

    StringGrid1.Cells[ 0,0]:='Gün';
    StringGrid1.Cells[ 1,0]:='A';
    StringGrid1.Cells[ 2,0]:='B';
    StringGrid1.Cells[ 3,0]:='P';
    StringGrid1.Cells[ 4,0]:='Verilen Sipariş';
    StringGrid1.Cells[ 5,0]:='Satışta Gecikme';
    StringGrid1.Cells[ 6,0]:='Üretimde Gecikme';
    StringGrid1.Cells[ 7,0]:='Sipariş A';
    StringGrid1.Cells[ 8,0]:='Sipariş B';
    StringGrid1.Cells[ 9,0]:='A Geliş Süresi';
    StringGrid1.Cells[10,0]:='B Geliş Süresi';
    StringGrid1.Cells[11,0]:='A Random Selection';
    StringGrid1.Cells[12,0]:='B Random Selection';
    StringGrid1.Cells[13,0]:='P Random Selection';
end;

procedure TForm1.ASiparisVer;
var
  ARS:integer;
  AGS:integer;

begin
    ARS:=Random(99)+1;

    Case ARS of
        1..20: AGS:=3;
       21..60: AGS:=4;
       61..90: AGS:=5;
       91..99: AGS:=6;
    else AGS:=-1;
    end;

    StringGrid1.Cells[9,Gun]:=IntToStr(AGS);
    A_SiparisGelisi:=Gun+AGS;

    StringGrid1.Cells[11,Gun]:=FloatToStr(ARS/100);
    StringGrid1.Cells[7,Gun]:='20';
end;

procedure TForm1.BSiparisVer;
var
  BRS:integer;
  BGS:integer;

begin
    BRS:=Random(99)+1;
```

```
    Case BRS of
        1..10: BGS:=5;
       11..60: BGS:=6;
       61..90: BGS:=7;
       91..99: BGS:=8;
    else BGS:=-1;
    end;

    StringGrid1.Cells[10,Gun]:=IntToStr(BGS);
    B_SiparisGelisi:=Gun+BGS;

    StringGrid1.Cells[12,Gun]:=FloatToStr(BRS/100);
    StringGrid1.Cells[8,Gun]:='20';
end;

procedure TForm1.SiparisleriKarsila;
var
  PRS                    :integer;
  Siparis                :integer;

begin
    PRS:=Random(99)+1;

    Case PRS of
        1..20: Siparis:=1;
       21..70: Siparis:=2;
       71..99: Siparis:=3;
    else Siparis:=-1;
    end;

    StringGrid1.Cells[4,Gun]:=IntToStr(Siparis);

    if Siparis<=P then
    begin
       P:=P-Siparis;
       if (Siparis=1)and(GecikenSiparis>0) then
       begin
          P:=P-1;
          GecikenSiparis:=GecikenSiparis-1;
       end;
    end
    else
    begin
       GecikenSiparis:=GecikenSiparis+Siparis-P;
       P:=0;
    end;

    StringGrid1.Cells[13,Gun]:=FloatToStr(PRS/100);
```

```
    StringGrid1.Cells[3,Gun]:=IntToStr(P);

    StringGrid1.Cells[5,Gun]:=IntToStr(GecikenSiparis);

    ToplamSatistaGecikme:=ToplamSatistaGecikme+GecikenSiparis;
end;

procedure TForm1.PUret;
begin
    if (A>2)and(B>2) then
    begin
        P:=P+2;
        A:=A-2;
        B:=B-2;
    end
    else if ((A>0)and(B>0))and(A<B) then
    begin
        P:=P+A;
        B:=B-A;
        A:=A-A;
    end
    else if ((A>0)and(B>0))and(B<A) then
    begin
        P:=P+B;
        A:=A-B;
        B:=B-B;

        StringGrid1.Cells[6,Gun]:='1';
        ToplamUretimdeGecikme:=ToplamUretimdeGecikme+1;
    end;

    if (A<=AMin)and(A_SiparisGelisi<Gun) then ASiparisVer;
    if (B<=BMin)and(B_SiparisGelisi<Gun) then BSiparisVer;

    StringGrid1.Cells[1,Gun]:=IntToStr(A);
    StringGrid1.Cells[2,Gun]:=IntToStr(B);
    StringGrid1.Cells[3,Gun]:=IntToStr(P);
end;

procedure TForm1.BaslangicDurumunuHazirla;
Var
  i:integer;
  j:integer;
begin
    A_SiparisGelisi:=0;
    B_SiparisGelisi:=0;
    GecikenSiparis:=0;
    ToplamSatistaGecikme:=0;
    ToplamUretimdeGecikme:=0;
```

```
    A:=ABaslangic;
    B:=BBaslangic;
    P:=PBaslangic;

    For i:=1 to 13 do
       For j:=1 to SimulasyonSuresi do
          StringGrid1.Cells[i,j]:='----';

    For i:=1 to SimulasyonSuresi do
       StringGrid1.Cells[0,i]:=IntToStr(i);
end;

procedure TForm1.BitBtn1Click(Sender: TObject);
begin
    BaslangicDurumunuHazirla;
    For Gun:=1 to SimulasyonSuresi do
    begin
       if Gun=A_SiparisGelisi then A:=A+20;
       if Gun=B_SiparisGelisi then B:=B+20;
       PUret;
       SiparisleriKarsila;
    end;

StringGrid1.Cells[5,SimulasyonSuresi+1]:=FloatToStr(ToplamSatistaGecikme/Simu
lasyonSuresi);

StringGrid1.Cells[6,SimulasyonSuresi+1]:=FloatToStr(ToplamUretimdeGecikme/Si
mulasyonSuresi);
end;

procedure TForm1.BitBtn2Click(Sender: TObject);
begin
    Form2.ShowModal;
end;

procedure TForm1.BitBtn3Click(Sender: TObject);
begin
  if MessageDlg('Çıkmak İstediginizden Eminmisiniz.?',
    mtConfirmation, [mbYes, mbNo], 0) = mrYes then Close;
end;

procedure TForm1.Timer1Timer(Sender: TObject);
Var
   KayanKarakter :Char;
   i            :integer;
begin
    KayanKarakter:=MyString[1];
    For i:=1 to Length(MyString)-1 do
```

```
      MyString[i]:=MyString[i+1];
    MyString[Length(MyString)]:=KayanKarakter;
    Application.Title:=MyString;
    Form1.Caption:=MyString;
end;

procedure TForm1.BitBtn4Click(Sender: TObject);
begin
    Form3.ShowModal;
end;

end.
```

```
object Form1: TForm1
  Left = 175
  Top = 389
  Width = 825
  Height = 480
  HorzScrollBar.Position = 203
  HorzScrollBar.Tracking = True
  VertScrollBar.Tracking = True
  Caption = 'İbrahim ARI'
  Color = clBtnFace
  Font.Charset = DEFAULT_CHARSET
  Font.Color = clWindowText
  Font.Height = -11
  Font.Name = 'MS Sans Serif'
  Font.Style = []
  OldCreateOrder = False
  WindowState = wsMaximized
  OnCreate = FormCreate
  PixelsPerInch = 96
  TextHeight = 13
  object Panel1: TPanel
    Left = 732
    Top = 2
    Width = 85
    Height = 158
    TabOrder = 5
  end
  object StringGrid1: TStringGrid
    Left = -203
    Top = 0
    Width = 933
    Height = 437
    Align = alLeft
    Color = clMaroon
    ColCount = 14
    FixedColor = clTeal
    FixedCols = 0
    RowCount = 62
    Font.Charset = DEFAULT_CHARSET
    Font.Color = clWindow
    Font.Height = -11
    Font.Name = 'MS Sans Serif'
    Font.Style = []
    Options = [goFixedVertLine, goFixedHorzLine, goVertLine, goHorzLine,
goRangeSelect, goThumbTracking]
    ParentFont = False
    TabOrder = 0
    ColWidths = (
      64
```

```
    64
    64
    64
    64
    65
    64
    64
    64
    64
    64
    64
    64
    64)
end
object BitBtn1: TBitBtn
  Left = 737
  Top = 16
  Width = 75
  Height = 25
  Caption = 'Başlat'
  Font.Charset = DEFAULT_CHARSET
  Font.Color = clNavy
  Font.Height = -13
  Font.Name = 'MS Sans Serif'
  Font.Style = [fsBold]
  ParentFont = False
  TabOrder = 1
  OnClick = BitBtn1Click
end
object BitBtn2: TBitBtn
  Left = 737
  Top = 50
  Width = 75
  Height = 25
  Caption = 'Ayarla'
  Font.Charset = DEFAULT_CHARSET
  Font.Color = clNavy
  Font.Height = -13
  Font.Name = 'MS Sans Serif'
  Font.Style = [fsBold]
  ParentFont = False
  TabOrder = 2
  OnClick = BitBtn2Click
end
object BitBtn3: TBitBtn
  Left = 737
  Top = 119
  Width = 75
  Height = 25
```

```
    Caption = 'Çıkış'
    Font.Charset = DEFAULT_CHARSET
    Font.Color = clNavy
    Font.Height = -13
    Font.Name = 'MS Sans Serif'
    Font.Style = [fsBold]
    ParentFont = False
    TabOrder = 3
    OnClick = BitBtn3Click
  end
  object BitBtn4: TBitBtn
    Left = 737
    Top = 85
    Width = 75
    Height = 25
    Caption = 'About'
    Font.Charset = DEFAULT_CHARSET
    Font.Color = clNavy
    Font.Height = -13
    Font.Name = 'MS Sans Serif'
    Font.Style = [fsBold]
    ParentFont = False
    TabOrder = 4
    OnClick = BitBtn4Click
  end
  object Timer1: TTimer
    Interval = 200
    OnTimer = Timer1Timer
    Left = 762
    Top = 116
  end
end
```

```
unit AyarlarForm;

interface

uses
  Windows, Messages, SysUtils, Classes, Graphics, Controls, Forms, Dialogs,
  StdCtrls, Buttons, ExtCtrls;

type
  TForm2 = class(TForm)
    Label1: TLabel;
    Label2: TLabel;
    Label3: TLabel;
    Label4: TLabel;
    Label5: TLabel;
    Edit1: TEdit;
    Edit2: TEdit;
    Edit3: TEdit;
    Edit4: TEdit;
    Edit5: TEdit;
    BitBtn1: TBitBtn;
    Label6: TLabel;
    Edit6: TEdit;
    Bevel1: TBevel;
    BitBtn2: TBitBtn;
    procedure BitBtn1Click(Sender: TObject);
    procedure FormCreate(Sender: TObject);
    procedure BitBtn2Click(Sender: TObject);
  private
    { Private declarations }
  public
    { Public declarations }
  end;

var
  Form2: TForm2;

implementation

uses Main;

{$R *.DFM}

procedure TForm2.BitBtn1Click(Sender: TObject);
Var
  i:integer;
  j:integer;
begin
    Try
```

```
    StrToInt(Edit1.Text);
  Except
      ShowMessage('A Min Seviyesine yalnış değer girdiniz.');
      Abort;
  end;

  Try
    StrToInt(Edit2.Text);
  Except
      ShowMessage('B Min Seviyesine yalnış değer girdiniz.');
      Abort;
  end;

  Try
    StrToInt(Edit3.Text);
  Except
      ShowMessage('Başlangıçtaki A Miktarına yalnış değer girdiniz.');
      Abort;
  end;

  Try
    StrToInt(Edit4.Text);
  Except
      ShowMessage('Başlangıçtaki B Miktarına yalnış değer girdiniz.');
      Abort;
  end;

  Try
    StrToInt(Edit5.Text);
  Except
      ShowMessage('Başlangıçtaki P Miktarına yalnış değer girdiniz.');
      Abort;
  end;


  Form1.AMin:=StrToInt(Edit1.Text);
  Form1.BMin:=StrToInt(Edit2.Text);
  Form1.ABaslangic:=StrToInt(Edit3.Text);
  Form1.BBaslangic:=StrToInt(Edit4.Text);
  Form1.PBaslangic:=StrToInt(Edit5.Text);

  Form1.SimulasyonSuresi:=StrToInt(Edit6.Text);

  Form1.StringGrid1.RowCount:=Form1.SimulasyonSuresi+2;

  Close;

  For i:=1 to 13 do
    For j:=1 to Form1.SimulasyonSuresi do
```

```
        Form1.StringGrid1.Cells[i,j]:='----';

    For i:=0 to 14 do
      Form1.StringGrid1.Cells[i,Form1.SimulasyonSuresi+1]:='';
end;

procedure TForm2.FormCreate(Sender: TObject);
begin
    Edit1.Text:=IntToStr(Form1.AMin);
    Edit2.Text:=IntToStr(Form1.BMin);
    Edit3.Text:=IntToStr(Form1.ABaslangic);
    Edit4.Text:=IntToStr(Form1.BBaslangic);
    Edit5.Text:=IntToStr(Form1.PBaslangic);

    Edit6.Text:=IntToStr(Form1.SimulasyonSuresi);
end;

procedure TForm2.BitBtn2Click(Sender: TObject);
begin

      Form2.Close;

end;

end.
```

```
object Form2: TForm2
  Left = 420
  Top = 429
  BorderIcons = [biSystemMenu, biMinimize]
  BorderStyle = bsSingle
  Caption = 'Program Ayar Menüsü'
  ClientHeight = 300
  ClientWidth = 370
  Color = clBtnFace
  Font.Charset = DEFAULT_CHARSET
  Font.Color = clWindowText
  Font.Height = -11
  Font.Name = 'MS Sans Serif'
  Font.Style = []
  OldCreateOrder = False
  Position = poScreenCenter
  OnCreate = FormCreate
  PixelsPerInch = 96
  TextHeight = 13
  object Label1: TLabel
    Left = 32
    Top = 24
    Width = 111
    Height = 16
    Caption = 'A Min Seviyesi :'
    Font.Charset = DEFAULT_CHARSET
    Font.Color = clMaroon
    Font.Height = -13
    Font.Name = 'MS Sans Serif'
    Font.Style = [fsBold]
    ParentFont = False
  end
  object Label2: TLabel
    Left = 32
    Top = 58
    Width = 111
    Height = 16
    Caption = 'B Min Seviyesi :'
    Font.Charset = DEFAULT_CHARSET
    Font.Color = clMaroon
    Font.Height = -13
    Font.Name = 'MS Sans Serif'
    Font.Style = [fsBold]
    ParentFont = False
  end
  object Label3: TLabel
    Left = 32
    Top = 91
    Width = 167
```

```
  Height = 16
  Caption = 'Başlangıçtaki A Miktarı :'
  Font.Charset = DEFAULT_CHARSET
  Font.Color = clMaroon
  Font.Height = -13
  Font.Name = 'MS Sans Serif'
  Font.Style = [fsBold]
  ParentFont = False
end
object Label4: TLabel
  Left = 32
  Top = 125
  Width = 167
  Height = 16
  Caption = 'Başlangıçtaki B Miktarı :'
  Font.Charset = DEFAULT_CHARSET
  Font.Color = clMaroon
  Font.Height = -13
  Font.Name = 'MS Sans Serif'
  Font.Style = [fsBold]
  ParentFont = False
end
object Label5: TLabel
  Left = 32
  Top = 158
  Width = 167
  Height = 16
  Caption = 'Başlangıçtaki P Miktarı :'
  Font.Charset = DEFAULT_CHARSET
  Font.Color = clMaroon
  Font.Height = -13
  Font.Name = 'MS Sans Serif'
  Font.Style = [fsBold]
  ParentFont = False
end
object Label6: TLabel
  Left = 32
  Top = 192
  Width = 178
  Height = 16
  Caption = 'Simulasyon Süresi (Gün) :'
  Font.Charset = DEFAULT_CHARSET
  Font.Color = clMaroon
  Font.Height = -13
  Font.Name = 'MS Sans Serif'
  Font.Style = [fsBold]
  ParentFont = False
end
```

```
object Bevel1: TBevel
  Left = 34
  Top = 223
  Width = 303
  Height = 57
end
object Edit1: TEdit
  Left = 215
  Top = 23
  Width = 121
  Height = 21
  TabOrder = 0
end
object Edit2: TEdit
  Left = 215
  Top = 57
  Width = 121
  Height = 21
  TabOrder = 1
end
object Edit3: TEdit
  Left = 215
  Top = 90
  Width = 121
  Height = 21
  TabOrder = 2
end
object Edit4: TEdit
  Left = 215
  Top = 124
  Width = 121
  Height = 21
  TabOrder = 3
end
object Edit5: TEdit
  Left = 215
  Top = 157
  Width = 121
  Height = 21
  TabOrder = 4
end
object BitBtn1: TBitBtn
  Left = 44
  Top = 237
  Width = 138
  Height = 31
  Caption = 'Tamam'
  Font.Charset = DEFAULT_CHARSET
  Font.Color = clNavy
```

```
  Font.Height = -13
  Font.Name = 'MS Sans Serif'
  Font.Style = [fsBold]
  ParentFont = False
  TabOrder = 6
  OnClick = BitBtn1Click
 end
 object Edit6: TEdit
  Left = 215
  Top = 191
  Width = 121
  Height = 21
  TabOrder = 5
 end
 object BitBtn2: TBitBtn
  Left = 188
  Top = 237
  Width = 138
  Height = 31
  Caption = 'İptal'
  Font.Charset = DEFAULT_CHARSET
  Font.Color = clNavy
  Font.Height = -13
  Font.Name = 'MS Sans Serif'
  Font.Style = [fsBold]
  ParentFont = False
  TabOrder = 7
  OnClick = BitBtn2Click
 end
end
```

```
unit About;

interface

uses
  Windows, Messages, SysUtils, Classes, Graphics, Controls, Forms, Dialogs,
  ExtCtrls, StdCtrls;

type
  TForm3 = class(TForm)
    Image1: TImage;
    Label1: TLabel;
    Timer1: TTimer;
    Label2: TLabel;
    procedure Timer1Timer(Sender: TObject);
  private
    { Private declarations }
  public
    { Public declarations }
  end;

var
  Form3: TForm3;

implementation

uses Main;

{$R *.DFM}

procedure TForm3.Timer1Timer(Sender: TObject);
begin
  label2.left:=label2.left-3;
    if label2.left<-label2.Width then label2.Left:=form1.ClientWidth;

end;

end.
```

```
object Form3: TForm3
  Left = 303
  Top = 344
  BorderStyle = bsSingle
  Caption = 'About'
  ClientHeight = 209
  ClientWidth = 619
  Color = clHighlightText
  Font.Charset = ANSI_CHARSET
  Font.Color = clWindowText
  Font.Height = -11
  Font.Name = 'MS Sans Serif'
  Font.Style = []
  OldCreateOrder = False
  Position = poScreenCenter
  PixelsPerInch = 96
  TextHeight = 13
  object Image1: TImage
    Left = 0
    Top = 13
    Width = 105
    Height = 105
    Picture.Data = {
E3E3E3FFECCCFFECCCD7D7D7D7D7D7D7D7D7D7D7D7D7D7D7D7D7D7D7D7D7D7
D7D7D7D7D7D7D7D7D7D7D7D7D7D7D7D7D7D7D7D7D7D7D7D7D7D7D7D7D7FFECCCFFEC
CCFFECCCFFECCCFFECCCFFECCCD7D7D7FFECCCFFECCCFFECCCD7D7D
7FFECCCFFECCCFFECCCD7D7D7FFECCCF0CAA6F0CAA6F0CAA6F0CAA6
F0CAA6F0CAA6F0CAA6F0CAA6F0CAA6F0CAA6F0CAA6F0CAA6F0CAA6D7
D7D7D7D7D7F0CAA6F0CAA6F0CAA6F0CAA6F0CAA6F0CAA6F0CAA6F0CA
A6F0CAA6F0CAA6F0CAA6CCCC99CCCC99CCCC99CCCC99CCCC99CCCC99
CCCC99CCCC99A4A0A09999667777775F5F5F4D4D4D4242425F5F5F808080A4
A0A0B2B2B2B2B2B2A4A0A0A4A0A0A4A0A0B2B2B2B2B2B2B2B2B2B2B
2A4A0A0A4A0A0B2B2B2B2B2A4A0A0969696969696A4A0A0B2B2B2C0C0
C0A4A0A0969696969696868686868686868699666666666666666336666339966
339966669966669966669966669966339966339966339966339966633996633996633
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996699996699966669999669999669999669999669999966999966CC9966CC9966CC
9966CC9999CC9966CC9966CC9999B2B2B2A4A0A0969696868686868690A9
ADC0C0C0CCCCCCCCCC99CC9999CC9966999966999966999966CC9966CC99
66CC9999CC9966CC9966CC9966999999998080805F5F5F868686CBCBCBCCCCC
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
CCCCD7D7D7CCCCCCCCCCCCD7D7D7D7D7D7A4A0A04D4D4D4242429999
66A4A0A0CCCC99CCCC99CC9966CCCC99CCCC99CCCC99CCCC99CCCC99
A4A0A0999966808080868686999966999966A4A0A0C0C0C0669999777777CCC
CCCF0CAA6F0CAA6CCCC99CC9999CC9966CC9966CC9966CC9966CC9966C
C9966CC9966CC9966CC9966CC9966CC9966CC9966CC9966999966999339999
669999669999669999666666336666335555556666665F5F5F424242555555777777
969696969696A4A0A0A4A0A0999966996666969696C0C0C0CCCCCCDDDDDD
DDDDDDDDDDDDDDDDDDDDCCCCCCD7D7D7D7D7D7CCCCCCC0DCC0CCC
```

CCCD7D7D7DDDDDDE3E3E3B2B2B27777775555554D4D4D666633777777999
9669999669999669999669999669999669999669999669999669999669999CC99
66CC9999CCCC99CCCC99CC9999CC9966CC9966CC9966CC9966CC9966CC99
66CC9966CC9966CC9966CC9966CC9966CC9966CC9966CC9999CCCC99CCCC
99CCCC99CCCC99CCCC99CCCC99CCCC99CCCC99CCCC99CCCC99CCCC99
F0CAA6CCCC99CCCC99CC9999CC9966CC9966999966999966999966699
9966999966999966999966999966999966999966999966999966999966999
669999669999669999669999669999669999999A4A0A0A4A0A0B2B2B2C0C0C0C
BCBCBD707544269746D6170C60F0A00424DC60F0A00000000003600000028 00
00001D0200009601000001001800000000000900F0A00C40E0000C40E0000000000
000000FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF00}
  Stretch = True
 end
 object Label1: TLabel
  Left = 112
  Top = 36
  Width = 480
  Height = 46
  Caption = 'Near East University'
  Font.Charset = DEFAULT_CHARSET
  Font.Color = clMaroon
  Font.Height = -40
  Font.Name = 'MS Sans Serif'
  Font.Pitch = fpFixed
  Font.Style = [fsBold]
  ParentFont = False
 end
 object Label2: TLabel
  Left = 615
  Top = 150
  Width = 415
  Height = 24
  Caption = 'Grauduation Project - İbrahim Arı - 940100'
  Font.Charset = ANSI_CHARSET
  Font.Color = clNavy
  Font.Height = -19
  Font.Name = 'MS Sans Serif'
  Font.Pitch = fpVariable
  Font.Style = [fsBold]
  ParentFont = False
 end
 object Timer1: TTimer
  Interval = 100
  OnTimer = Timer1Timer
  Left = 308
  Top = 6
 end
end

n	A	B	P	Verilen Sipariş	Eksiksiz Geçirilme	Eksiksiz Geçirilme	Sipariş A	Sipariş B	A Ortalama Süresi	B Ortalama Süresi	A Random Selection	B Random Selection	P Random Selection
	18	17	3	3	0	---	---	---	--	--	--	---	0.91
	16	15	4	1	0	---	---	--	--	--	--	---	0.15
	14	13	5	1	0	---	---	20	--	0	--	0.95	0.14
	12	11	6	1	0	---	20	--	3	--	0.11	---	0.1
	10	9	6	2	0	---	---	--	--	--	--	---	0.44
	8	7	6	2	0	---	---	--	--	--	---	---	0.58
	36	5	5	3	0	---	--	--	--	--	--	---	0.79
	24	3	4	3	0	---	---	--	--	---	---	---	0.83
	22	1	4	2	0	---	--	--	--	---	---	---	0.6
	21	0	2	3	0	1	--	--	--	---	---	---	0.94
	19	18	3	1	0	---	---	--	--	---	---	---	0.05
	17	16	2	3	0	---	---	---	---	---	---	---	0.32
	15	14	2	2	0	---	---	20	--	7	---	0.86	0.53
	13	12	1	3	0	---	---	---	---	---	---	---	0.73
	11	10	0	3	0	---	20	--	3	---	0.09	---	0.94
	9	8	0	2	0	---	---	---	---	---	---	---	0.36
	7	6	0	3	1	---	---	---	---	---	---	---	0.95
	35	4	0	2	1	---	---	---	---	---	---	---	0.43
	33	2	0	2	1	---	---	---	--	---	---	---	0.57
	31	30	0	2	1	---	---	--	--	---	---	---	0.35
	19	18	0	0	2	---	---	---	---	---	---	---	0.84
	17	16	0	0	2	---	---	---	---	---	---	---	0.57
	15	14	0	2	3	---	---	20	---	6	---	0.4	0.67
	13	12	0	2	3	---	---	---	--	---	---	---	0.94
	11	10	0	1	0	---	20	---	3	---	0.01	---	0.09
	9	8	0	2	2	---	---	---	---	---	---	---	0.53
					0.76 0.00 0.49 0.00 0.90 0.00 0.76 0.00								

Gün	A	S	P	Verilen Sipariş	Satışta Sebbüme	Üretimde Gecikme	Sipariş A	Sipariş B	A Geliş Süresi	B Geliş Süresi	A Random Selection	E Random Selection	P Random Selection
1	20	19	3	2	0	---	---	---	--	---	---	---	0.44
2	18	17	2	3	0	---	---	---	--	---	---	---	0.64
3	16	15	2	2	0	---	---	---	--	---	---	---	0.39
4	14	13	2	2	0	---	---	20	--	7	---	0,74	0.22
5	12	11	3	1	0	---	20	---	4	---	0,42	---	0.13
6	10	9	2	3	0	---	---	---	--	---	---	---	0.62
7	8	7	1	3	0	---	---	---	--	---	---	---	0.9
8	6	5	0	3	0	---	---	---	--	---	---	---	0.79
9	24	3	0	2	0	---	---	---	--	---	---	---	0.88
10	22	1	1	1	0	---	---	---	--	---	---	---	0.09
11	20	19	0	3	0	---	---	---	--	---	---	---	0.78
12	18	17	0	2	0	---	---	---	--	---	---	---	0.48
13	16	15	0	3	1	---	---	---	--	---	---	---	0.92
14	14	13	0	2	1	---	---	20	--	6	---	0,12	0.58
15	12	11	0	2	1	---	20	---	5	---	0,77	---	0.83
16	10	9	0	2	1	---	---	---	---	---	---	---	0.49
17	8	7	0	2	1	---	---	---	---	---	---	---	0.55
18	6	5	0	2	1	---	---	---	---	---	---	---	0.21
19	4	3	0	3	2	---	---	---	---	---	---	---	0.97
20	22	21	0	1	1	---	---	---	---	---	---	---	0.01
21	20	19	0	3	2	---	---	---	---	---	---	---	0.92
22	18	17	0	3	3	---	---	---	---	---	---	---	0.57
23	16	15	0	2	3	---	---	---	--	---	---	---	0.32
24	14	13	0	2	3	---	---	20	---	6	---	0,25	0.21
25	12	11	0	1	2	---	20	---	3	---	0,13	---	0.17
26	10	9	0	1	1	---	---	---	--	---	---	---	0.06
27	8	7	0	3	2	---	---	---	--	---	---	---	0.56
28	26	5	0	3	3	---	---	---	--	---	---	---	0.81

29	24	3	0	2	3	—	—	—	—	—	—	—	0.5
30	22	21	0	3	4	—	—	—	—	—	—	—	0.88
31	20	19	0	2	4	—	—	—	—	—	—	—	0.53
32	18	17	0	1	3	—	—	—	—	—	—	—	0.16
33	16	15	0	3	4	—	—	—	—	—	—	—	0.83
34	14	13	0	2	4	—	—	20	—	7	—	0.85	0.5
35	12	11	0	3	5	—	10	—	4	—	0.33	—	0.75
36	10	9	0	2	5	—	—	—	—	—	—	—	0.58
37	8	7	0	2	5	—	—	—	—	—	—	—	0.38
38	6	5	0	1	4	—	—	—	—	—	—	—	0.01
39	24	3	0	3	5	—	—	—	—	—	—	—	0.89
40	22	1	0	1	4	—	—	—	—	—	—	—	0.08
41	20	19	0	2	4	—	—	—	—	—	—	—	0.24
42	18	17	0	2	4	—	—	—	—	—	—	—	0.21
43	16	15	0	2	4	—	—	—	—	—	—	—	0.31
44	14	13	0	2	4	—	—	30	—	8	—	0.92	0.53
45	12	11	0	3	5	—	10	—	4	—	0.24	—	0.99
46	10	9	0	1	4	—	—	—	—	—	—	—	0.01
47	8	7	0	3	5	—	—	—	—	—	—	—	0.74
48	6	5	0	2	5	—	—	—	—	—	—	—	0.3
49	24	3	0	3	6	—	—	—	—	—	—	—	0.84
50	22	1	0	2	6	—	—	—	—	—	—	—	0.33
51	21	0	0	3	8	1	—	—	—	—	—	—	0.78
52	19	18	0	3	9	—	—	—	—	—	—	—	0.81
53	17	16	0	2	9	—	—	—	—	—	—	—	0.37
54	15	14	0	2	9	—	—	20	—	7	—	0.84	0.39
55	13	12	0	3	10	—	—	—	—	—	—	—	0.72

Gün	A	B	P	Verilen Sipariş	Sırada Gecikme	Üretimde Gecikme	Sipariş A	Sipariş B	A Geliş Süresi	B Geliş Süresi	A Random Selection	B Random Selection	P Random Selection
1	20	19	3	2	0	...	...	...	...	...	...	...	0,67
2	18	17	3	2	0	...	...	...	...	...	...	...	0,25
3	16	15	4	1	0	...	...	...	...	...	...	...	0,05
4	14	13	4	2	0	...	...	23	...	8	...	0,91	0,63
5	12	11	4	2	0	...	20	...	5	...	0,52	...	0,23
6	10	9	4	2	0	...	...	...	...	...	...	...	0,52
7	8	7	3	3	0	...	...	...	...	...	...	...	0,91
8	6	5	4	1	0	...	...	...	...	...	...	...	0,15
9	4	3	3	3	0	...	...	...	...	...	...	...	0,84
10	22	1	2	3	0	...	...	...	...	...	...	...	0,77
11	21	0	0	3	0	1	...	...	...	...	...	...	0,73
12	19	18	0	2	0	...	...	...	...	...	...	...	0,59
13	17	16	1	1	0	...	...	...	...	...	...	...	0,09
14	15	14	1	2	0	...	...	23	...	7	...	0,75	0,22
15	13	12	2	1	0	...	...	...	...	...	...	...	0,07
16	11	10	3	1	0	...	20	...	4	...	0,26	...	0,04
17	9	8	3	2	0	...	...	...	...	...	...	...	0,42
18	7	6	3	2	0	...	...	...	...	...	...	...	0,33
19	5	4	2	3	0	...	...	...	...	...	...	...	0,75
20	23	2	1	3	0	...	...	...	...	...	...	...	0,65
21	21	20	2	1	0	...	...	...	...	...	...	...	0,11
22	19	18	1	3	0	...	...	...	...	...	...	...	0,92
23	17	16	2	1	0	...	...	...	...	...	...	...	0,12
24	15	14	3	1	0	...	...	23	...	6	...	0,18	0,1
25	13	12	3	2	0	...	...	...	...	...	...	...	0,42
26	11	10	3	2	0	...	20	...	3	...	0,19	...	0,25
27	9	8	2	3	0	...	...	...	...	...	...	...	0,84
28	7	6	3	1	0	...	...	...	...	...	...	...	0,05

25	4	3	2	0	—	—	—	—	—	—	—	0,3
23	22	3	2	0	—	—	—	—	—	—	—	0,3[illegible]
21	20	2	3	0	—	—	—	—	—	—	—	0,38
19	18	2	2	0	—	—	—	—	—	—	—	0,36
17	16	1	3	0	—	—	—	—	—	—	—	0,39
15	14	0	3	0	—	—	20	—	6	—	0,35	0,39
13	12	0	2	0	—	—	—	—	—	—	—	0,55
11	10	0	2	0	—	20	—	4	—	0,41	—	0,43
9	8	0	3	1	—	—	—	—	—	—	—	0,33
7	6	0	3	2	—	—	—	—	—	—	—	0,3
5	4	0	2	2	—	—	—	—	—	—	—	0,54
23	22	0	3	3	—	—	—	—	—	—	—	0,71
21	20	0	2	3	—	—	—	—	—	—	—	0,27
19	18	0	2	3	—	—	—	—	—	—	—	0,5[illegible]
17	16	0	2	3	—	—	—	—	—	—	—	0,39
15	14	0	3	4	—	—	20	—	6	—	0,13	0,36
13	12	0	1	3	—	—	—	—	—	—	—	0,02
11	10	0	3	4	—	20	—	5	—	0,67	—	0,32
9	8	0	2	4	—	—	—	—	—	—	—	0,56
7	6	0	2	4	—	—	—	—	—	—	—	0,55
5	4	0	2	4	—	—	—	—	—	—	—	0,37
3	22	0	2	4	—	—	—	—	—	—	—	0,24
21	20	0	2	4	—	—	—	—	—	—	—	0,57
19	18	0	3	5	—	—	—	—	—	—	—	0,37
17	16	0	2	5	—	—	—	—	—	—	—	0,5
15	14	0	2	5	—	—	20	—	5	—	0,01	0,36
13	12	0	2	5	—	—	—	—	—	—	—	0,57
11	10	0	2	5	—	20	—	3	—	0,17	—	0,2[illegible]

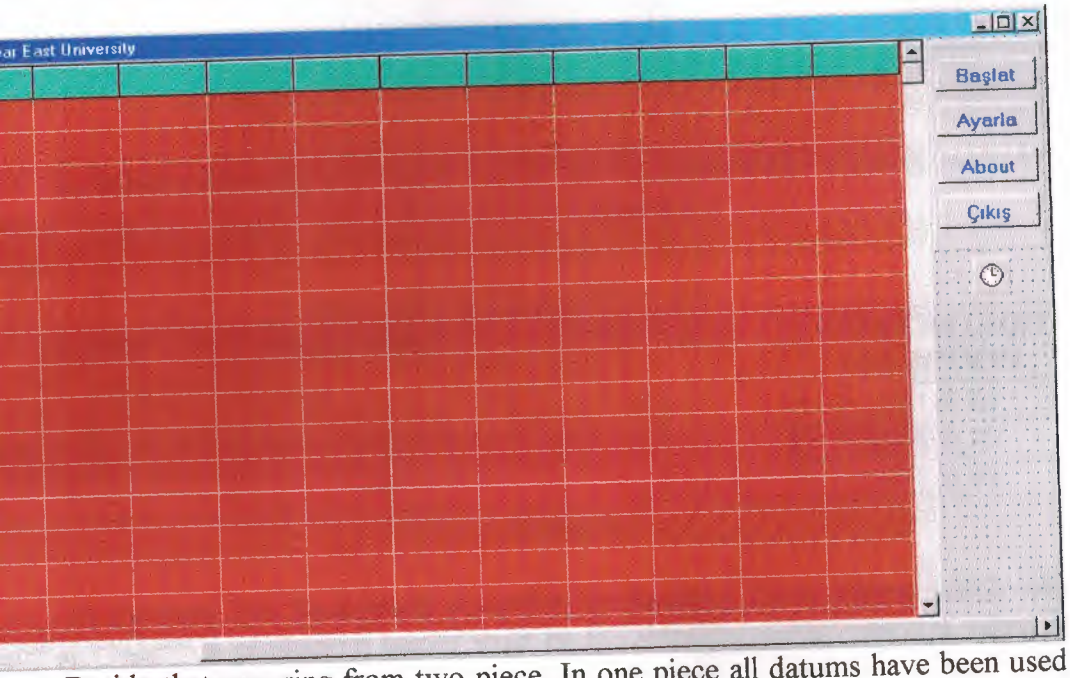
57	9	8	0	3	6	...	...	...	...	...	...	...	0,8
58	7	6	0	2	6	...	...	...	...	...	...	...	0,55
59	25	24	0	2	6	...	...	...	...	...	...	...	0,31
60	23	22	0	2	6	...	...	...	...	...	...	...	0,33
61	21	20	0	1	5	...	...	...	...	...	...	...	0,05
62	19	18	0	1	4	...	...	...	...	...	...	...	0,18
63	17	16	0	2	4	...	...	...	...	...	...	...	0,22
64	15	14	0	1	3	...	...	20	...	6	...	0,13	0,12
65	13	12	0	3	4	...	...	...	...	...	...	...	0,71
66	11	10	0	1	3	...	20	...	4	...	0,42	...	0,13
67	9	8	0	2	3	...	...	...	...	...	...	...	0,33
68	7	6	0	2	3	...	...	...	...	...	...	...	0,28
69	5	4	0	2	3	...	...	...	...	...	...	...	0,35
70	23	22	0	2	3	...	...	...	...	...	...	...	0,51
71	21	20	0	3	4	...	...	...	...	...	...	...	0,93
72	19	18	0	1	3	...	...	...	...	...	...	...	0,12
73	17	16	0	3	4	...	...	...	...	...	...	...	0,97
74	15	14	0	1	3	...	...	20	...	7	...	0,61	0,15
75	13	12	0	2	3	...	...	...	...	...	...	...	0,33
76	11	10	0	3	4	...	20	...	4	...	0,46	...	0,93
77	9	8	0	2	4	...	...	...	...	...	...	...	0,65
78	7	6	0	1	3	...	...	...	...	...	...	...	0,07
79	5	4	0	2	3	...	...	...	...	...	...	...	0,37
80	23	2	0	2	3	...	...	...	...	...	...	...	0,55
81	21	20	0	3	4	...	...	...	...	...	...	...	0,95
82	19	18	0	1	3	...	...	...	...	...	...	...	0,16
83	17	16	0	2	3	...	...	...	...	...	...	...	0,49
84	15	14	0	2	3	...	...	20	...	6	...	0,23	0,43

3	12	0	2	3	...	...	...	...	...	...	...	0,63
1	10	0	2	3	...	20	...	4	...	0,49	...	0,54
9	8	0	3	4	...	...	...	...	...	...	...	0,72
7	6	0	3	5	...	...	...	...	...	...	...	0,93
5	4	0	2	5	...	...	...	...	...	...	...	0,43
23	22	0	1	4	...	...	...	...	...	...	...	0,13
21	20	0	3	5	...	...	...	...	...	...	...	0,91
19	18	0	1	4	...	...	...	...	...	...	...	0,12
17	16	0	2	4	...	...	...	...	...	...	...	0,29
15	14	0	3	5	...	...	20	...	7	...	0,71	0,75
13	12	0	2	5	...	...	...	...	...	...	...	0,55
11	10	0	3	6	...	20	...	3	...	0,1	...	0,87
9	8	0	2	6	...	...	...	...	...	...	...	0,64
7	6	0	3	7	...	...	...	...	...	...	...	0,93
25	4	0	1	6	...	...	...	...	...	...	...	0,12
23	2	0	1	5	...	...	...	...	...	...	...	0,03
21	20	0	2	5	...	...	...	...	...	...	...	0,32
19	18	0	2	5	...	...	...	...	...	...	...	0,23
17	16	0	2	5	...	...	...	...	...	...	...	0,35
15	14	0	2	5	...	...	20	...	6	...	0,52	0,33
13	12	0	3	6	...	...	...	...	...	...	...	0,83
11	10	0	2	6	...	20	...	5	...	0,61	...	0,42
9	8	0	1	5	...	...	...	...	...	...	...	0,12
7	6	0	2	5	...	...	...	...	...	...	...	0,4
5	4	0	2	5	...	...	...	...	...	...	...	0,69
3	22	0	3	6	...	...	...	...	...	...	...	0,83
				2,60303030303	0,03030303030							

CONCLUTION

This is the program which I have written is a simulation of one production er. It is written with Delphi which is a language of programming. Aim of this ram is controlling that if so production center can give response to reguest which ming out or not. According to this program's results production center must take aution.

In this production center matter which name is P. This matter is come into tence with A and B matters. One P is come into existence from one A and one B. ther from that in production center in one day two piece of P matter is producing. ponse that in one day one-three piece of P matter is giving property to market



Beside that occuring from two piece. In one piece all datums have been used ed. When in A matter minimum twelve stayed it is ordering for goods and dering for goods is coming to production center in three or six days and for B atter goods for which is ordering coming in five or eight days. In production center one day two piece of P matter and in one day one or three piece of P matter is ling. If while starting to simulation in production center 22 piece of A matter, 21 ece of B matter and three piece of P matter is ready to prepare too.In first part it akes it simulation average it will be taken in sixty days.At the end sixty days mulation average to be taken. According to get out results in production center can ve answer to want or is it making production more than want or less than want we an see. According to results is this production center working sufficient? If it is not orking precautions can be taken and capasity of producing can be increase. For that ables which are given to A,B and P matters.

DELIVERY TIME FOR MATERIAL A

EVENT	PROBABILITY	CUM. PROB.	RANDOM DIGIT SELECTION
3	0.2	0.2	0.01-0.20
4	0.4	0.6	0.21-0.60
5	0.3	0.9	0.61-0.90
6	0.1	1.0	0.91-0.99

Table 1

In delivery time for material A (Table-1) at random program will find between zero-hundred According Random Digital Selection values if production center order for goods comes time will be same namely event is taken.

DELIVERY TIME FOR MATERIAL B

EVENT	PROBABILITY	CUM. PROB.	RANDOM DIGIT SELECTION
5	0.1	0.1	0.01-0.10"
6	0.3	0.4	0.11-0.40
7	0.4	0.8	0.41-0.80
8	0.2	1.0	0.81-0.99

Tablo 2

In delivery time for material P (Table-2) The same thing which is made for Delivery Time For Material A is making here for material B.

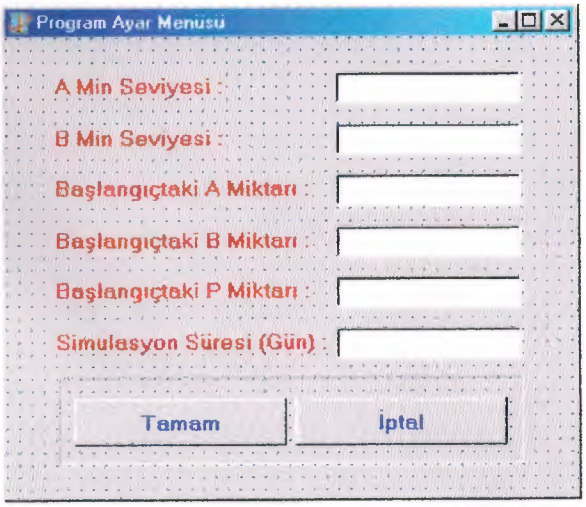
DEMAND FOR PRODUCT P

EVENT	PROBABILITY	CUM. PROB	RANDOM DIGIT SELECTION
1	0.2	0.2	0.01-0.20
2	0.5	0.7	0.21-0.70
3	0.3	1.0	0.71-0.99

Tablo 3

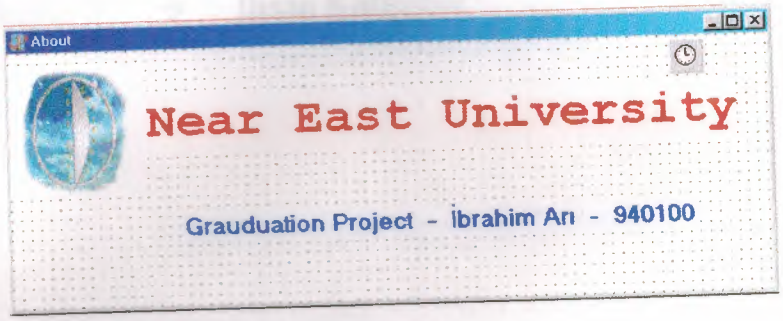
In Demand For Production according to Random Digit Values which was found at random in production center must be P(Table-3) material which is saling in one day supply to there.

If in second part of this program differnce from first when you push to settings button in settings menu which is coming out off your opposite A minimum level, B minimum level, in first B quantity, in first P quantity and simulation time can be designated by user. This position can help to see results of datums which he want and with this way he can do everthing he needs.



After he entered the datums with pushing the OK button simulation can be ıe. With this way user not to bound to anywhere with idea structure which he has ers the datums and watch for the results.

If in part of program's which name is about , with the statement which is cessary about program and there is introduction. If we push to the CLOSE button d if you say to the answer which is asked to you program closes. If you say NO in program nothing changes and you can go on to ypur program how you want.



REFERANCE

1- Delphi 5 → Marco Cantu

2- [F1] Delphi → Faruk Demirel

3- Borland delphi 3 → İhsan Karagülle