MAKERERE UNIVERSITY BUSINESS SCHOOL

Bachelor of Business Computing

BUC 2227: Business Application Programming
Lecture 5

Enriching the user interface

- Working with multiple forms
- Login Screen
- Key Trapping
- Message Boxes
- Dash Boards
- Adding other advanced controls

Working with Multiple forms

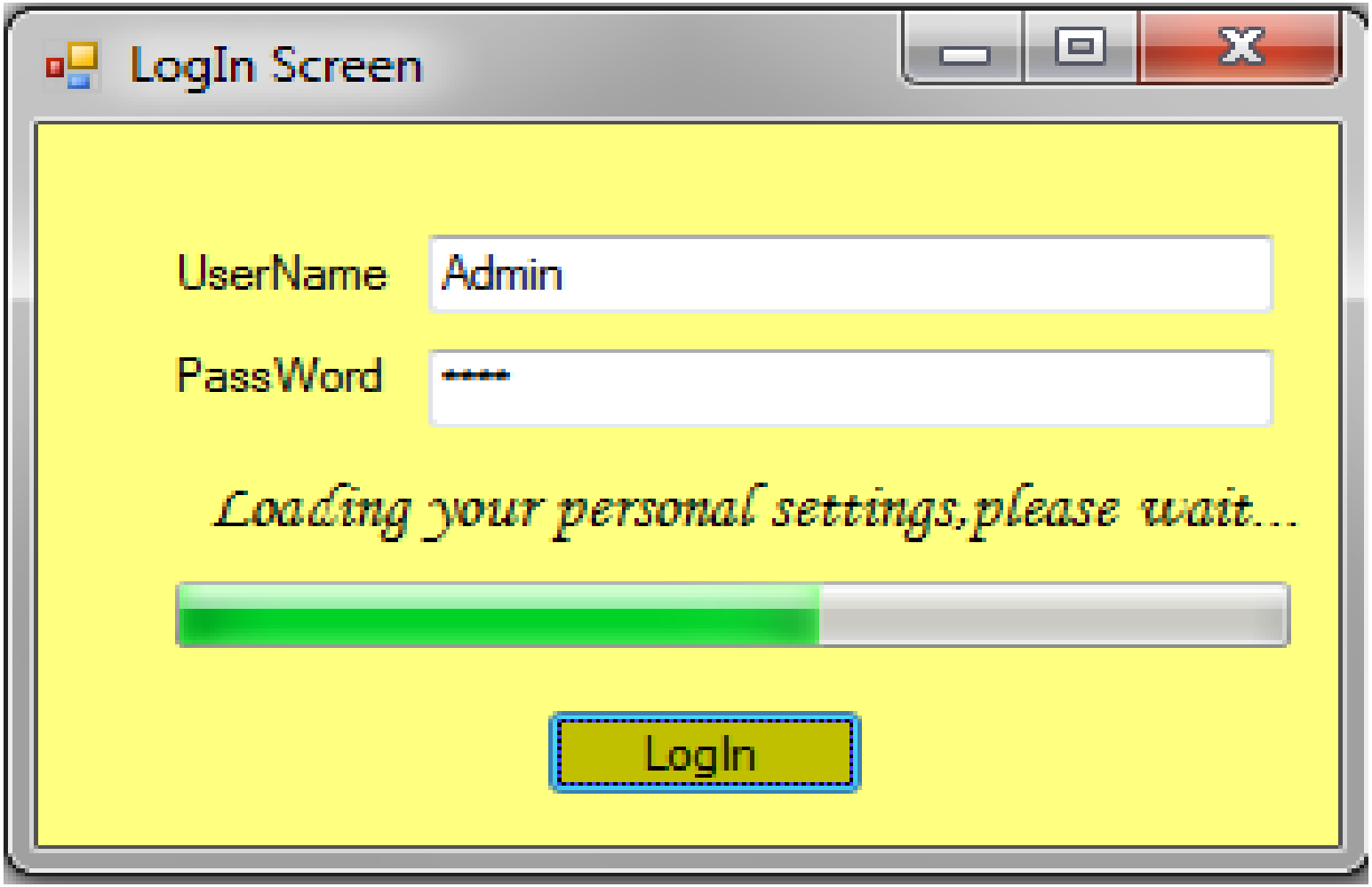
When developing application in VB.Net you might need to;

- Authenticate users through a login screen
- Open additional forms from a main form
- Pass data between forms
- Hide, show, or close forms properly

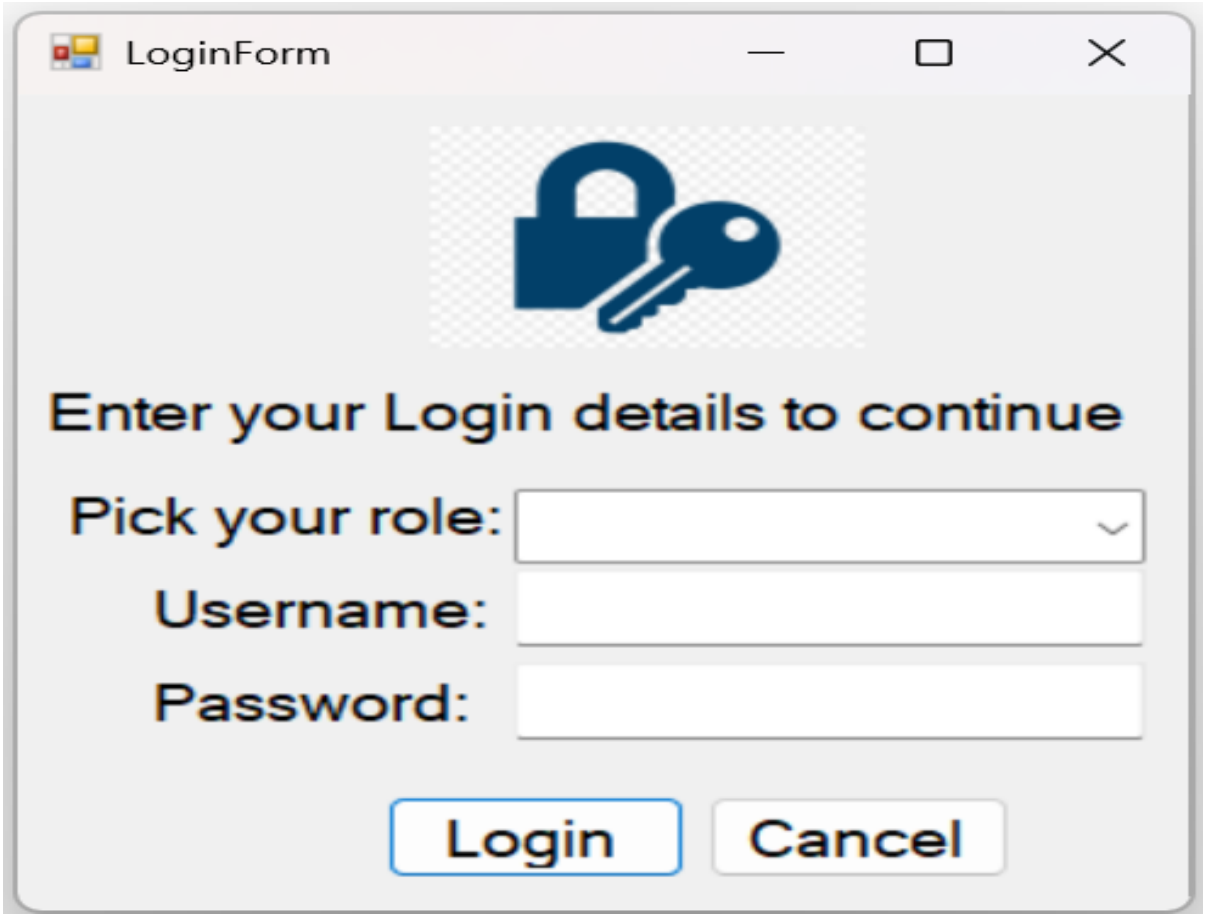
The Login Screen

- It is a form where users enter their **username and password** to authenticate access to an application
- It typically includes:
  - Username field (TextBox)
  - Password field (encrypted)
  - Login Button
  - Cancel/Exit Button
  - Message notifications

The Login Screen_Example1



The Login Screen_Example2



Key Trapping

- Key Trapping refers to capturing and handling keyboard input (key presses) within an application
- It is a process of intercepting unwanted key strokes.
- **It is useful for;**
  - Validating user input (e.g., allowing only numbers in a TextBox)
  - Creating shortcuts (e.g., pressing Enter to log in)
  - Preventing certain keys (e.g., disabling Backspace in a TextBox)

Sample ASCII Table


```
ASCII Table ~ Character Map
-------------------------------------------
Dec:Base10, Hex:Base16, Oct:Base8,Bin:Base2
-------------------------------------------
0, dec: 48, hex: 30, oct: 60, bin: 110000
1, dec: 49, hex: 31, oct: 61, bin: 110001
2, dec: 50, hex: 32, oct: 62, bin: 110010
3, dec: 51, hex: 33, oct: 63, bin: 110011
4, dec: 52, hex: 34, oct: 64, bin: 110100
5, dec: 53, hex: 35, oct: 65, bin: 110101
6, dec: 54, hex: 36, oct: 66, bin: 110110
7, dec: 55, hex: 37, oct: 67, bin: 110111
8, dec: 56, hex: 38, oct: 70, bin: 111000
9, dec: 57, hex: 39, oct: 71, bin: 111001

A, dec: 65, hex: 41, oct: 101, bin: 1000001
B, dec: 66, hex: 42, oct: 102, bin: 1000010
C, dec: 67, hex: 43, oct: 103, bin: 1000011
D, dec: 68, hex: 44, oct: 104, bin: 1000100
E, dec: 69, hex: 45, oct: 105, bin: 1000101
F, dec: 70, hex: 46, oct: 106, bin: 1000110
G, dec: 71, hex: 47, oct: 107, bin: 1000111
H, dec: 72, hex: 48, oct: 110, bin: 1001000
I, dec: 73, hex: 49, oct: 111, bin: 1001001
```

Practical Application

- Demonstrate the ASCII Table for the different ASCII codes of the keyboard characters. Can be accessed here https://www.ascii-code.com/
- Revisit the student grading application to accept only numbers (0-9), back space and decimal point in the marks text boxes.

```
Private Sub txtecon_KeyPress(ByVal sender As Object, ByVa
    If (e.KeyChar < Chr(48) Or e.KeyChar > Chr(57)) And _
    (e.KeyChar <> Chr(8)) And (e.KeyChar <> Chr(46)) Then
        e.Handled = True
    End If
```

Key Trapping cont....

- Accept only Alphabets (both lower and upper cases) and the backspace key eg in the name textbox

```
Private Sub txtecon_KeyPress(ByVal sender As Object,
    If (e.KeyChar < Chr(65) Or e.KeyChar > Chr(90) _
And (e.KeyChar < Chr(97) Or e.KeyChar > Chr(122)) And _
(e.KeyChar <> Chr(8))) Then
        e.Handled = True
    End If
End Sub
```

Message Boxes

- A **MessageBox** in VB.NET is a pop-up dialog used to display messages, warnings, or alerts to users.
- It provides information and allows users to make choices, such as **OK, Yes, No, Cancel**, etc.
- Its structure is;
- MessageBox.Show(“Message”,”Body”,Title”,Buttons , Icon)

Message Boxes

- “Message”: is the text displayed in the message box
- "Title“: is the title of the message box window
- MessageBoxButtons.OK: The button(s) to show (e.g., OK, Yes/No)
- MessageBoxIcon.Information: The icon type (e.g., Information, Warning)

Message Boxes....

Coding for user event responses

- Deciding on which actions the application should take based on message box buttons clicked
- Eg what could happen if the user clicks No/Yes on the messagebox prompt

```
Private Sub cmdDelete_Click(ByVal sender As System.Object, ByVal e As
    Dim response As DialogResult
    response = MessageBox.Show("Are you sure you want to delete?", _
    "Caution", MessageBoxButtons.YesNo, MessageBoxIcon.Warning)
    If response = Windows.Forms.DialogResult.Yes Then
        txtName.Text = " "
    End If
```

The Dashboard

- A **dashboard** is a **centralized interface** that provides users with key functionalities and data in a structured way.
- It serves as the **main form** of an application, allowing users to navigate to different sections and perform operations efficiently.

Dashboard….

A well-designed dashboard typically includes:

- **Navigation Menu** – Buttons to access different modules
- **User Authentication** – Displays user details and role-based access
- **Data Display Widgets** – Labels, charts, or grids for reports
- **Quick Actions** – Shortcuts to common tasks (e.g., "Add New User")
- **Notifications** – Alerts on important updates
- **Settings & Logout** – Access to configurations

Dashboard_Example

Manager Form

Manager Dashboard

Inventory Management

User Management

Supplier Management

Sales and Transactions

Reports and Data exportation

System Settings and Security

Back

Close

Practical Task....

- Create multiple forms
- Create a Dashboard that navigates to and from all the forms
- Example forms could be;
  - Products form
  - Manager form
  - Accountant form
  - Supplier form
  - Customer form

Adding other advanced controls

- Radio Buttons
- Check Boxes
- List boxes
- Combo Boxes
- Group Boxes
- Picture Boxes
- Progress Bars
- Timers
- Date time pickers
- Calenders etc.....

Advanced Controls_Example

Student Registration Form

Bio Data

Name: Andrew Benon

RegNo: 23/U/19892/Eve

Date of Birth: 11/23/1988

Nationality: Ugandan

Program

- (•) BBC
- ( ) BCOM
- ( ) BHRM
- ( ) BESBM
- ( ) BOIM
- ( ) BPSM
- ( ) BBA
- ( ) BCHM

Student Photo

Click to Load Photo

Choose Course Units

- [x] PPB
- [x] MKT
- [x] ECON
- [ ] ISDM
- [ ] ICT F
- [ ] SMD
- [x] BSA
- [ ] BLAW
- [ ] EWEB
- [x] ICT
- [ ] CDBM
- [ ] BAD

Department

- (•) BC
- ( ) IT
- ( ) FIN
- ( ) PRMT
- ( ) ACC
- ( ) MGT SC
- ( ) HR
- ( ) IS

Year of Study

- ( ) ONE
- (•) TWO
- ( ) THREE

Hostel

- Akamwesi
- Bahesi
- Evelyne
- Betsam
- Dofra
- Vision

Study Time

- (•) Day
- ( ) Evening

Course Costs

PPB =	500000	MKT =	329000
ISDM =	0	ICTF =	0
BSA =	490000	BLAW =	0
ICT =	410000	CDBM =	0
ECON=	370000	SMD =	0
BAD =	0	EWEB =	0

Total Course Charge= 2099000

Back | Regester | Save | Refresh | Next | Exit

Advanced Controls

- Generate a user profile based on the choices