



UNIVERSITY OF RUHUNA

Faculty of Engineering

End-Semester 3, Examination in Engineering, August 2018

Module Number: EE3204 Module Name: GUI Programming
Part - II
[2 hours]

[Answer all questions, each question carries 5 marks]

- Q1. a) Explain the advantages of using XAML in GUI programming using WPF? [1 mark]
- b) Mention 4 layouts used in WPF? [1 mark]
- c) Figure Q1.c, shows a layout in WPF. Explain how to create similar layout using XAML. Note that you have borders around text boxes. [1.5 marks]

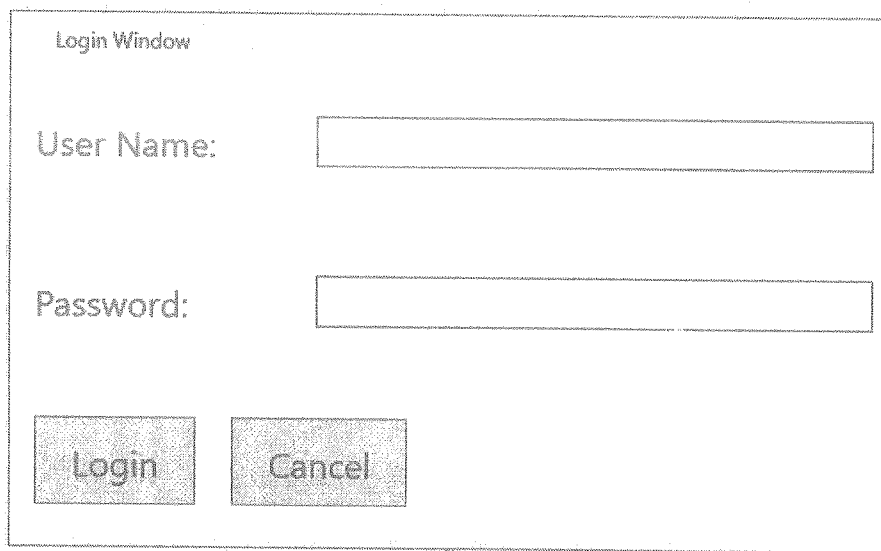


Figure Q1.c: Simple layout example with custom controls

- d) Explain how to use `<LinearGradientBrush>` to fill a Rectangle. [0.5 mark]
- e) Explain *margin*, *padding* and *border* properties of a control. [1 mark]

Q2. a) Write two main responsibilities of AndroidManifest.xml file.

[1 mark]

b) Write the XML layout to generate a similar layout to the following user interface (in Q2.b) using linear layout.



Figure Q2.b: Simple layout example with custom controls

[2 marks]

c) Draw the android user interface specified following by the android XML layout file.

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res
  /android"
  android:layout_width="match_parent"
  android:layout_height="match_parent" >

  <Button
  android:id="@+id/btnButton1"
  android:layout_width="wrap_content"
  android:layout_height="wrap_content"
  android:text="Button 1"/>

  <Button
  android:id="@+id/btnButton2"
  android:layout_width="wrap_content"
  android:layout_height="wrap_content"
  android:text="Button 2"
  android:layout_toRightOf="@+id/btnButton1"/>
```

```

<Button
    android:id="@+id/btnButton3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Button 3"
    android:layout_below="@+id/btnButton1"/>

<TextView
    android:id="@+id/textView1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/btnButton3"
    android:layout_marginTop="94dp"
    android:text="User :"
    android:textAppearance="?android:attr/textAppearanceLarge" />

<EditText
    android:id="@+id/editText1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentRight="true"
    android:layout_alignTop="@+id/textView1"
    android:layout_toRightOf="@+id/btnButton3" />

<Button
    android:id="@+id/btnSubmit"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentRight="true"
    android:layout_below="@+id/editText1"
    android:text="Submit" />

</RelativeLayout>

```

[2 marks]

Q3. a) Briefly explain activity life-cycle of Android by using a diagram.

[1 marks]

b) Briefly explain the different between Implicit Intent and Explicit Intent.

[1 marks]

c) You need to write an Android application with following properties. In the FirstAc-

tivity we need to get the First Name, Last Name and a Message from the user. Then we need to send that data to the SecondActivity and display a Message "Hello First name Last Name" on top and the Message below it.

- i) Write the xml files for FirstActivity and SecondActivity. [1 marks]
- ii) Write the onCreate method for FirstActivity. Here you should get data, start the second activity and send the data. [1 marks]
- iii) Write the onCreate method for SecondActivity. Here you should retrieve data and display. [1 marks]

Q4. a) Explain the following element positioning methods found in CSS using CSS code snippets and diagrams.

- i) `position: absolute;`
- ii) `position: static;`
- iii) `display: none;`
- iv) `float: left;`

[2 marks]

b) Explain each CSS rule and draw how the output of HTML/CSS code snippet in Listings 1 renders in the browser.

[3 marks]

Listing 1: HTML/CSS page example

```
<!DOCTYPE html>
<html>
  <head>
    <style>
      ul {
        list-style-type: none;
        margin: 0;
        padding: 0;
        overflow: hidden;
        background-color: black;
      }

      li {
        float: left;
      }

      li a {
        display: block;
        color: white;
```

```

        text-align: center;
        padding: 14px 16px;
        text-decoration: none;
    }

    li a:hover {
        background-color: gray;
    }
</style>
</head>
<body>

<ul>
    <li><a class="active" href="#home">Home</a></li>
    <li><a href="#news">News</a></li>
    <li><a href="#contact">Contact</a></li>
    <li><a href="#about">About</a></li>
</ul>

</body>
</html>

```

Q5. a) Following code segments are inserted inside Rectangle element Mouse Down Trigger. Explain the behavior of the code segments.

[2 marks]

- i) `<DoubleAnimation Storyboard.TargetProperty="Width" AutoReverse="True" RepeatBehavior="Forever" By="100" Duration="0:0:3"/>`
- ii) `<DoubleAnimation Storyboard.TargetName="MyRectangle" Storyboard.TargetProperty="Opacity" From="1.0" To="0.0" Duration="0:0:5" AutoReverse="True" RepeatBehavior="Forever" />`

b) How do you show a new WPF window when you click a button in the first Window. [1 marks]

c) When the mouse is over a button you need to change the background color from blue to green. How do you perform this using XAML?

[2 marks]