



# UNIVERSITY OF RUHUNA

## Faculty of Engineering

End-Semester 3, Examination in Engineering, July 2016

Module Number: EE3204    Module Name: GUI Programming  
Part - II

[1 hour and 45 minutes]

[Answer all questions, each question carries 5 marks]

Q1. a) Figure Q1.a, shows a layout in WPF. Explain how to create similar layout using XAML.

[2 marks]

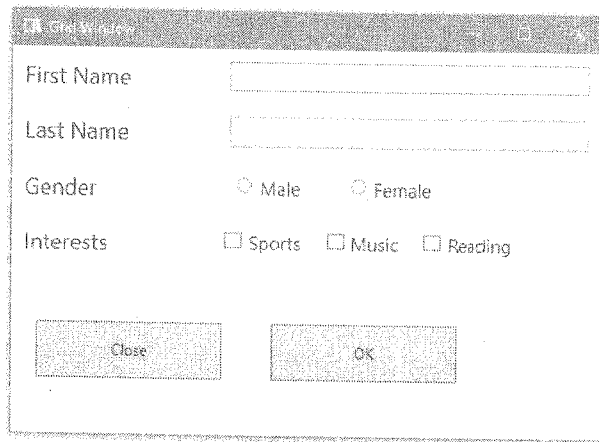


Figure Q1.a: Simple layout example with custom controls

b) Figure Q1.b, shows a layout in WPF. Explain how to create similar layout using XAML.

[1.5 marks]

c) Figure Q1.c, shows a layout in WPF. Explain how to create similar layout using XAML.

[1.5 marks]

Q2. a) Explain the output of the following code snippets in Listings 1, when included in a <Window> element

[1.5 marks]

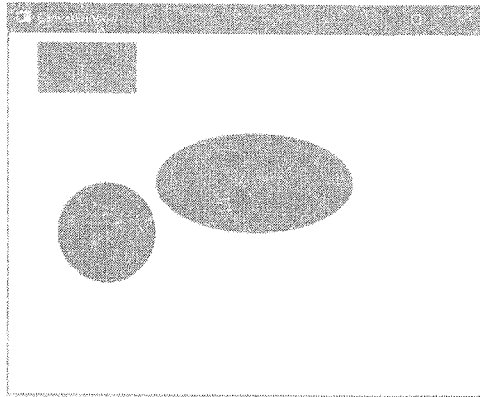


Figure Q1.b: Simple layout example with custom controls

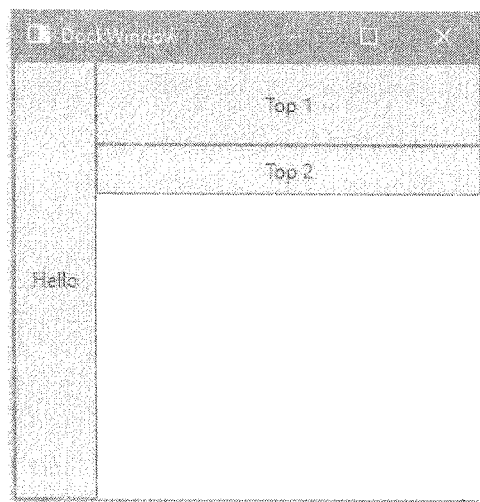


Figure Q1.c: Simple layout example with custom controls

Listing 1: XAML code for menus

```

<DockPanel>
  <Menu DockPanel.Dock="Top">
    <MenuItem Header="File" Click="MenuItem_Click"/>
    <MenuItem Header="Edit">
      <MenuItem Header="Cut" ToolTip="Cut the text"/>
      <MenuItem Header="Pasete"/>
    </MenuItem>
  </Menu>
  <Image Source="images/max.jpg" DockPanel.Dock="Left" Width="200">
    <Image.ContextMenu>

```

```

    <ContextMenu>
      <MenuItem Header="Flip"/>
      <MenuItem Header="Rotate"/>
      <MenuItem Header="Blur"/>
    </ContextMenu>
  </Image.ContextMenu>
</Image>
</DockPanel>

```

- b) Draw how the rectangle described in XAML code snippets in Listings 2, renders on the display.

[1.5 marks]

Listing 2: XAML rectangle code

```

<Rectangle Margin="5" Width="100" Height="100">
  <Rectangle.Fill>
    <LinearGradientBrush StartPoint="0,1" EndPoint="1,0">
      <GradientStop Color="Red" Offset="0"/>
      <GradientStop Color="Blue" Offset="1"/>
      <GradientStop Color="Yellow" Offset="0.5"/>
    </LinearGradientBrush>
  </Rectangle.Fill>
</Rectangle>

```

- c) Explain the output and behavior of the XAML code snippets in Listings 3.

[2 marks]

Listing 3: WPF Canvas example

```

<Canvas>
  <Button Canvas.Top="100" Canvas.Right="10" Width="100" Height="100">
    <Button.Background>
      <LinearGradientBrush>
        <GradientStop Offset="0" Color="Blue"/>
        <GradientStop Offset="0.3" Color="Yellow"/>
        <GradientStop Offset="1" Color="Red"/>
      </LinearGradientBrush>
    </Button.Background>
    <Button.Triggers>
      <EventTrigger RoutedEvent="Button.Click">
        <EventTrigger.Actions>
          <BeginStoryboard>
            <Storyboard TargetProperty="Background.GradientStops[1].Color">

```

```

        <ColorAnimation
            From="Yellow" To="Green" Duration="0:0:3"
            RepeatBehavior="Forever" AutoReverse="True"/>
    </Storyboard>
</BeginStoryboard>
<BeginStoryboard>
    <Storyboard TargetProperty="Background.GradientStops
        [1].Offset">
        <DoubleAnimation From="0.3" To="0.7" Duration="0:0:3"
            RepeatBehavior="Forever" AutoReverse="True"/>
    </Storyboard>
</BeginStoryboard>
    </EventTrigger.Actions>
</EventTrigger>
</Button.Triggers>
</Button>
</Canvas>

```

- Q3. a) Following code segment shows a stack layout. We need to display the text of the TextBox in the TextBlock and change the font size of the TextBlock according to the value of the Slider. How would you do this using only XAML?

[2 marks]

```

<StackPanel>
    <TextBlock ></TextBlock>
    <TextBox Height="30" >This is text</TextBox>
    <Slider Minimum="5" Maximum="100"></Slider>
</StackPanel>

```

- b) Explain the MVVM pattern used in the WPF applications?

[1.5 marks]

- c) What is the use of INotifyPropertyChanged?

[1.5 marks]

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

- i) Relative positioning.
- ii) Absolute positioning.

[2 marks]

b) Explain each CSS rule and draw how the output of HTML/CSS code snippet in Listings 4 renders in the browser.

[3 marks]

Listing 4: 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) Explain the usage of following code snippets in HTML/JavaScript.

- i) `document.getElementsByClassName("class_name");`
- ii) `<button onclick="myFunction()">Click me</button>`
- iii) `document.getElementById("demo").innerHTML = Date();`

[1.5 marks]

b) You need to change the content of a one paragraph when you click a button. Write HTML/JavaScript code needed to perform this task.

[1.5 marks]

c) Explain the following jQuery functions.

```
$(document).ready(function(){
    $("button").click(function(){
        $("#div3").fadeToggle(3000);
    });

    $("#btn2").click(function(){
        $("#test2").html("<b>Hello world!</b>");
    });
});
```

[2 marks]