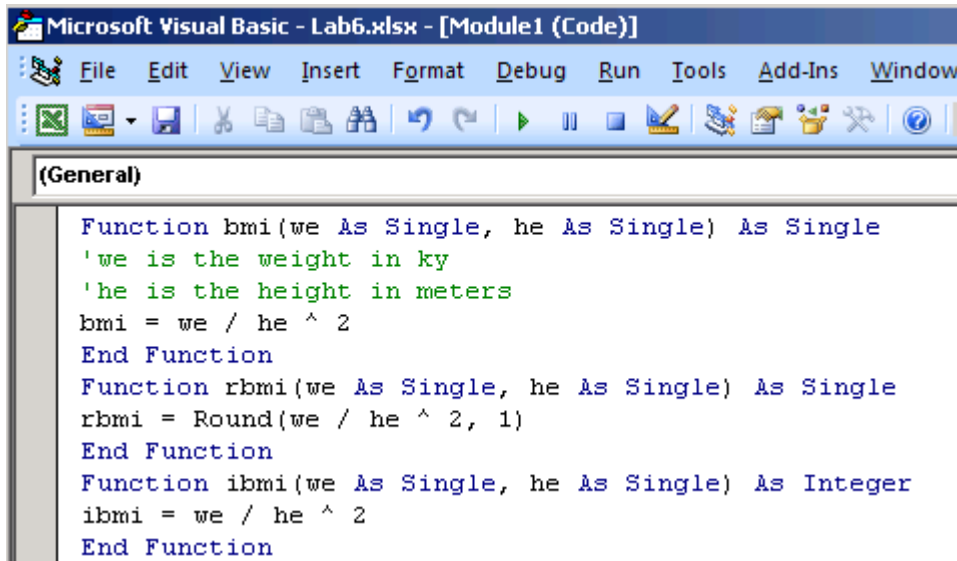


# Solutions Lab-session 6

1) The three functions are:



```
Microsoft Visual Basic - Lab6.xlsx - [Module1 (Code)]
File Edit View Insert Format Debug Run Tools Add-Ins Window
Function bmi(we As Single, he As Single) As Single
    'we is the weight in ky
    'he is the height in meters
    bmi = we / he ^ 2
End Function
Function rbmi(we As Single, he As Single) As Single
    rbmi = Round(we / he ^ 2, 1)
End Function
Function ibmi(we As Single, he As Single) As Integer
    ibmi = we / he ^ 2
End Function
```

2) (a)

```
Function male(x As Single) As String
    If x < 20 Then
        male = "underweight"
    ElseIf 20 <= x And x <= 24.9 Then
        male = "normal weight"
    ElseIf 24.9 < x And x <= 29.9 Then
        male = "overweight"
    ElseIf 29.9 < x And x <= 39.9 Then
        male = "obese"
    Else
        male = "extreme obese"
    End If
End Function
```

(b)

```
Function female(x As Single) As String
    If x < 19 Then
        female = "underweight"
    ElseIf 19 <= x And x <= 23.9 Then
        female = "normal weight"
    ElseIf 23.9 < x And x <= 28.9 Then
        female = "overweight"
    ElseIf 28.9 < x And x <= 38.9 Then
        female = "obese"
    Else
        female = "extreme obese"
    End If
End Function
```

In (a) and (b) the variable x plays the role of the body mass index.

(c)

```
Function mafe(x As Single, g As String) As String
If g = "male" Then
If x < 20 Then
mafe = "underweight"
ElseIf 20 <= x And x <= 24.9 Then
mafe = "normal weight"
ElseIf 24.9 < x And x <= 29.9 Then
mafe = "overweight"
ElseIf 29.9 < x And x <= 39.9 Then
mafe = "obese"
Else
mafe = "extreme obese"
End If
ElseIf g = "female" Then
If x < 19 Then
mafe = "underweight"
ElseIf 19 <= x And x <= 23.9 Then
mafe = "normal weight"
ElseIf 23.9 < x And x <= 28.9 Then
mafe = "overweight"
ElseIf 28.9 < x And x <= 38.9 Then
mafe = "obese"
Else
mafe = "extreme obese"
End If
Else
mafe = "sorry, I do not have information for this case"
End If
End Function
```

Now we have two IF...ELSEIF structures, the outer one decides on the gender (the variable g) and the inner ones decide on the bmi (the variable x).

3) (a)

```
Function hello1(x As Date) As String
Dim y As Integer
y = Hour(x)
If y < 12 Then
hello1 = "Good Morning!"
ElseIf y < 18 Then
hello1 = "Good Afternoon!"
ElseIf y < 22 Then
hello1 = "Good Evening!"
Else
hello1 = "Good Night!"
End If
End Function
```

(b)

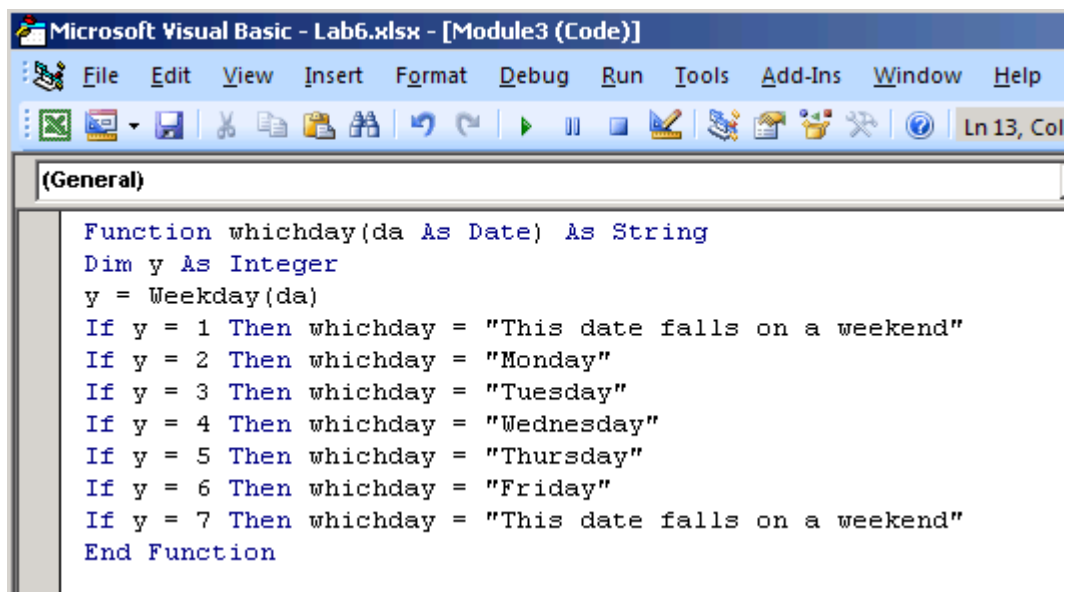
```
Function hello2(x As Date) As String
Dim y As Integer
y = Hour(x)
If y < 12 Then
hello2 = "Good Morning!"
ElseIf y < 16 Then
hello2 = "Good Afternoon!"
ElseIf y < 21 Then
hello2 = "Good Evening!"
Else
hello2 = "Good Night!"
End If
End Function
```

(c)

```
Function hello(x As Date) As String
Dim y As Integer
y = Month(x)
If y >= 5 And y <= 10 Then
hello = hello1(x)
Else
hello = hello2(x)
End If
End Function
```

Notice that the last function uses the first two functions. This can be always done if all three functions are written in the same VBA module.

4)

The image shows a screenshot of the Microsoft Visual Basic editor window. The title bar reads "Microsoft Visual Basic - Lab6.xlsx - [Module3 (Code)]". The menu bar includes File, Edit, View, Insert, Format, Debug, Run, Tools, Add-Ins, Window, and Help. The toolbar contains various icons for file operations and execution. The main text area shows the following VBA code:

```
Function whichday(da As Date) As String
Dim y As Integer
y = Weekday(da)
If y = 1 Then whichday = "This date falls on a weekend"
If y = 2 Then whichday = "Monday"
If y = 3 Then whichday = "Tuesday"
If y = 4 Then whichday = "Wednesday"
If y = 5 Then whichday = "Thursday"
If y = 6 Then whichday = "Friday"
If y = 7 Then whichday = "This date falls on a weekend"
End Function
```

=whichday(20/11/1945) → Tuesday