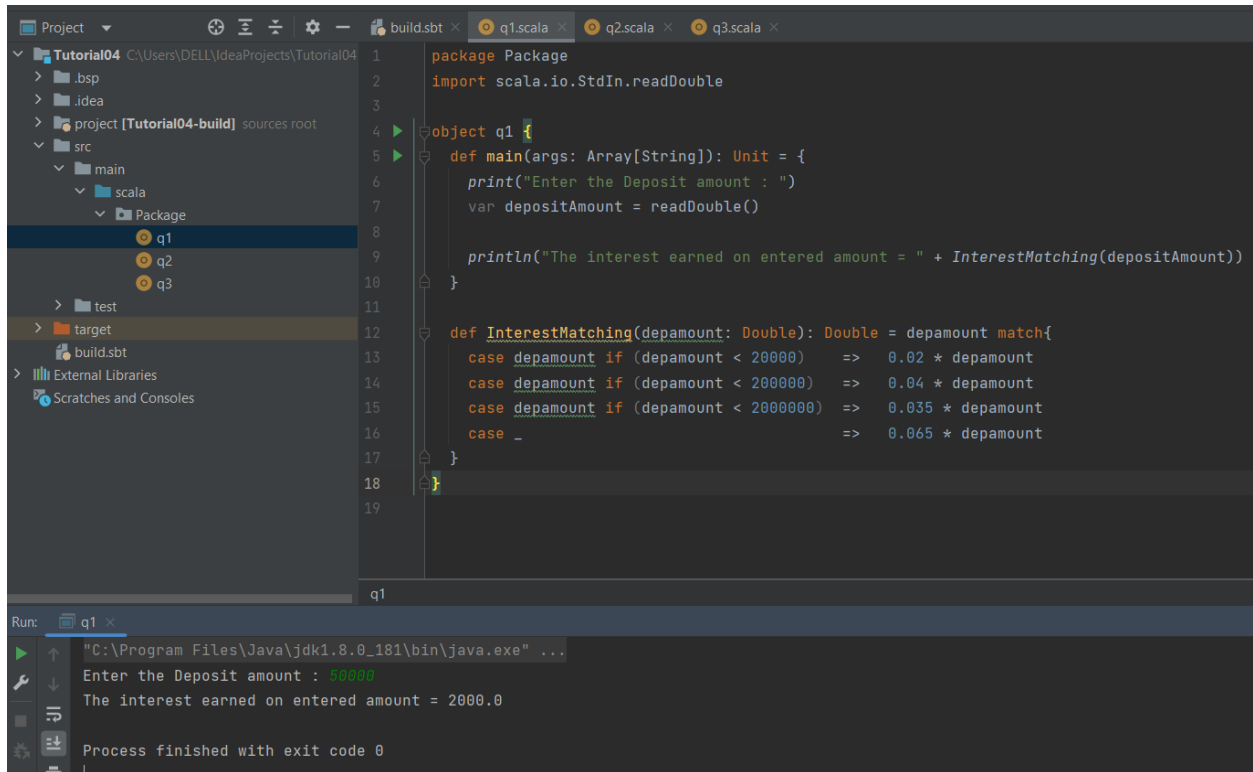


## SCS 2204- Functional Programming

### Scala Tutorial – 4

#### Question 01



The screenshot shows an IDE with a project named 'Tutorial04'. The left sidebar displays the project structure, including 'src/main/scala/Package' with sub-objects 'q1', 'q2', and 'q3'. The main editor window shows the code for 'q1.scala'.

```
1 package Package
2 import scala.io.StdIn.readDouble
3
4 object q1 {
5   def main(args: Array[String]): Unit = {
6     print("Enter the Deposit amount : ")
7     var depositAmount = readDouble()
8
9     println("The interest earned on entered amount = " + InterestMatching(depositAmount))
10   }
11
12   def InterestMatching(depamount: Double): Double = depamount match{
13     case depamount if (depamount < 20000) => 0.02 * depamount
14     case depamount if (depamount < 200000) => 0.04 * depamount
15     case depamount if (depamount < 2000000) => 0.035 * depamount
16     case _ => 0.065 * depamount
17   }
18 }
19
```

The bottom panel shows the execution output for 'q1':

```
Run: q1 x
"C:\Program Files\Java\jdk1.8.0_181\bin\java.exe" ...
Enter the Deposit amount : 20000
The interest earned on entered amount = 2000.0
Process finished with exit code 0
```

## Question 02

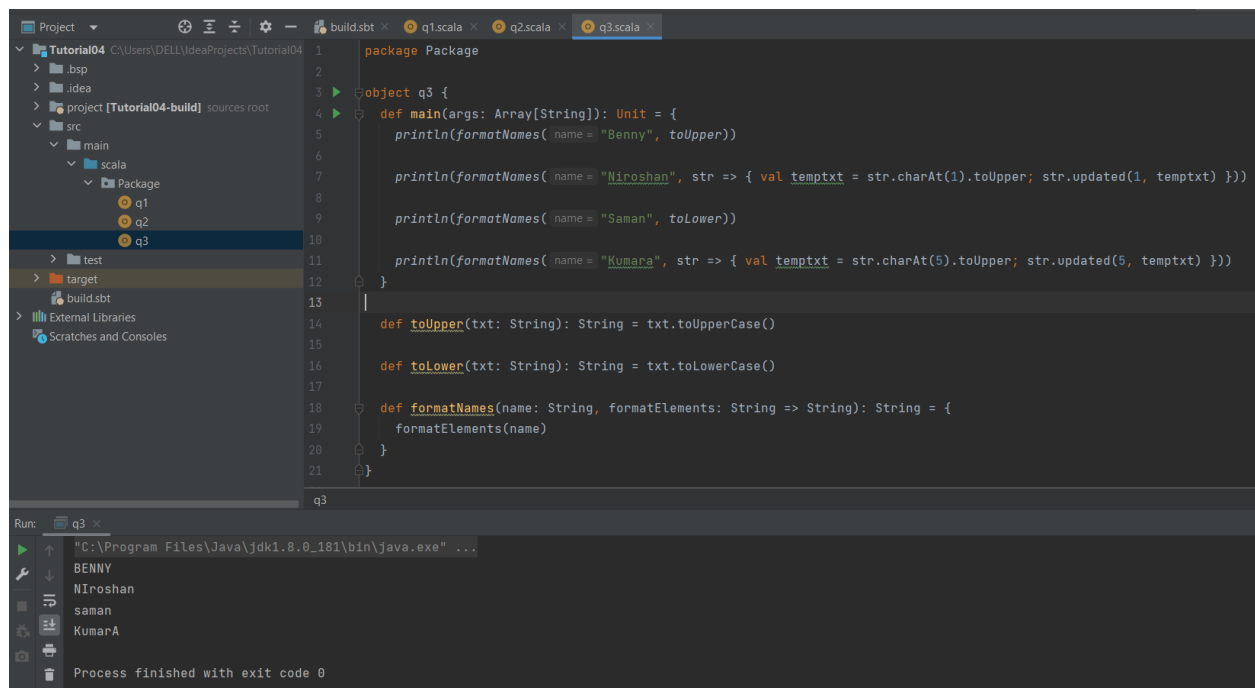
The screenshot shows an IDE with a project named 'Tutorial04'. The file explorer on the left shows the project structure, including 'src/main/scala/Package' with files 'q1', 'q2', and 'q3'. The 'q2' file is selected, and its code is displayed in the editor. The code defines a package 'Package', imports 'scala.io.StdIn.readInt', and defines an object 'q2' with a 'main' method. The 'main' method prints 'Enter the Integer : ', reads an integer, and calls 'PatternMatching(number)'. The 'PatternMatching' function is defined with a match statement that checks if the number is less than or equal to 0 (printing 'Negative/Zero'), if it is even (printing 'Even number'), or if it is odd (printing 'Odd number'). The bottom panel shows the run output for 'q2', indicating the program was executed successfully with the input '17' and the output 'Odd number'.

```
1 package Package
2 import scala.io.StdIn.readInt
3
4 object q2 {
5   def main(args: Array[String]): Unit = {
6     print("Enter the Integer : ")
7     var number = readInt()
8
9     PatternMatching(number)
10  }
11
12  def PatternMatching(num: Int): Unit = {
13    num match {
14      case num if (num <= 0) => println("Negative/Zero")
15      case num if (num % 2 == 0) => println("Even number")
16      case _ => println("Odd number")
17    }
18  }
19 }
20
```

Run: q2

```
"C:\Program Files\Java\jdk1.8.0_181\bin\java.exe" ...
Enter the Integer : 17
Odd number
Process finished with exit code 0
```

## Question 03



The screenshot shows an IDE with a project named 'Tutorial04'. The left sidebar displays the project structure, including 'src/main/scala/Package' with files 'q1', 'q2', and 'q3'. The 'q3' file is selected. The main editor shows the following Scala code:

```
1 package Package
2
3 object q3 {
4   def main(args: Array[String]): Unit = {
5     println(formatNames( name = "Benny", toUpper))
6
7     println(formatNames( name = "Niroshan", str => { val temptxt = str.charAt(1).toUpper; str.updated(1, temptxt) }))
8
9     println(formatNames( name = "Saman", toLower))
10
11    println(formatNames( name = "Kumara", str => { val temptxt = str.charAt(5).toUpper; str.updated(5, temptxt) }))
12  }
13
14  def toUpper(txt: String): String = txt.toUpperCase()
15
16  def toLower(txt: String): String = txt.toLowerCase()
17
18  def formatNames(name: String, formatElements: String => String): String = {
19    formatElements(name)
20  }
21 }
```

The bottom panel shows the 'Run' output for 'q3'. The output is as follows:

```
Run: q3 x
"C:\Program Files\Java\jdk1.8.0_181\bin\java.exe" ...
BENNY
NIroshan
saman
KumarA
Process finished with exit code 0
```