

Functional Programming – Tutorial 2

Question 1

```

object question1 {
  1  var k, i, j : Int = 2
  2  var m, d : Int = 5
  3  var f : Double = 12.0f
  4  var g : Double = 4.0f
  5  var c : Char = 'X'
  6
  7  def main(args: Array[String]): Unit = {
  8      println("a) k + 12 * m = " + (k + (12 * m)))
  9      println("b) m / j = " + (m / j))
 10      println("c) n % j = " + (n % j))
 11      println("d) m / j + j = " + (m / j + j))
 12      println("e) f + 10 * 5 + g = " + (f + 10 * 5 + g))
 13      i += 1
 14      println("f) ++i * n = " + (i * n)) // ++ operator is not supported in scala so we have to manually do it
 15  }
 16
 17 }
  
```

Run: question1

```

a) k + 12 * m = 62
b) m / j = 2
c) n % j = 1
d) m / j + j = 4
e) f + 10 * 5 + g = 66.0
f) ++i * n = 15
  
```

Process finished with exit code 0

Question 2

```

object question2 {
  1  var (g, b, c, d) = (2, 3, 4, 5)
  2  var k : Double = 4.3f
  3  var g : Double = 4.0f
  4
  5  def main(args: Array[String]): Unit = {
  6      //since postfix and prefix decrement are not supported in scala we have to manually do that
  7      b -= 1
  8      println("a) --b * a + c * d-- = " + b * a + c * d)
  9      d -= 1
 10
 11      //since postfix and prefix increment are not supported in scala we have to manually do that
 12      println("b) a++ = " + a)
 13      a += 1
 14
 15      println("c) -2 * (g-k) + c = " + (-2 * (g-k) + c))
 16
 17      println("d) c = " + c)
 18      c += 1
 19
 20      c += 1
 21      println("e) c = " + (c * a))
 22      a += 1
 23  }
 24
 25 }
  
```

Run: question2

```

a) --b * a + c * d-- = 420
b) a++ = 2
c) -2 * (g-k) + c = 4.600000381469727
d) c = 4
e) c = 18
  
```

Question 3

```

1 object question3 {
2   def calcSalary( workHours: Int , OT: Int) : Double = {
3     val salary = (((workHours * 250) + (OT * 85)) * 88) / 100
4     salary
5   }
6
7   def main(args: Array[String]) : Unit = {
8     println("The take home salary of the employee is Rs." + calcSalary( workHours = 40, OT = 30))
9   }
10 }
11

```

Run: question3

"C:\Program Files\Java\jdk1.8.0.281\bin\java.exe" ...
The take home salary of the employee is Rs.11044.0
Process finished with exit code 0

Question 4

```

1 object question4 {
2   def betterWay(currPrice: Double) : String = {
3     val method1 = "Increase the price by Rs.5"
4     val method2 = "Decrease the price by Rs.5"
5
6     val profit1 = (100 * (currPrice + 5)) - (500 + (3 * 100))
7     val profit2 = (140 * (currPrice - 5)) - (500 + (3 * 140))
8
9     if(profit1 > profit2){
10      method1
11    }
12    else{
13      method2
14    }
15  }
16
17  def main(args: Array[String]) : Unit = {
18    println("The best way to make more profit is to " + betterWay( currPrice = 15))
19  }
20 }
21

```

Run: question4

"C:\Program Files\Java\jdk1.8.0.281\bin\java.exe" ...
The best way to make more profit is to Increase the price by Rs.5
Process finished with exit code 0