**Abdullah Mahmud Week4 Exercises on Scala (CEBD 1261)**

**Exercise 1 (Mandatory)**

Define the following values:

● val x : Double = 42.354562  ● val y : Int = 3

Write required code in println command to print the following output:

● The round value of x is 42.35  ● The left zero padding version of y is 0003

Obviously 42.35 and 0003 should be computed.

Ans:

**object** wk4ex1 {

**def** main(args: Array[*String*])

{

println("Printing Double with 2 decimel value and left padding integer")

**val** x : Double = 42.354562; //> x : Double = 42.354562

**val** y : Int = 3; //> y : Int = 3

println(f"$x%1.2f") //> 42.35

println(f"$y%04d") //> 0003

}

}

**Exercise 2 (Mandatory)**

Write a function to compute factorial (5! = 5\*4\*3\*2\*1)

Then write another function to call fact function and println few examples (i.e, 6,8,4.52).  Your program should return NA if the input is not integer.

Ans:

**object** wk4ex2\_1 {

**def** main(args: Array[*String*]) {

println(matchTest(6))

println(matchTest(8))

println(matchTest(4.52))

}

**def** matchTest(n: Any): Any = n **match** {

**case** y: Int => println(factorial(y))

**case** \_ => "NA"

}

**def** factorial(n: Double): Double ={

**val** b = n.toInt

**if** (b == 0){

**return** 1

}**else**{

**return** b \* factorial(b-1)

}

}

}

**Exercise 3 (Mandatory)**

Repeat the previous exercise by accepting the double numbers into the factorial  function. Convert them to integer before calling the fact function.

**object** wk4ex3 {

**def** main(args: Array[*String*])

{

println("Printing factorial after converting double to int")

println(factorial1(6))

println(factorial1(8))

println(factorial1(4.52))

}

**def** factorial1(n: Double): Double ={

**val** b = n.toInt

**if** (b == 0){

**return** 1

}**else**{

**return** b \* factorial1(b-1)

}

}

}

**Exercise 4 (Optional)**

Write a code that prints out the first 10 values of the Fibonacci sequence.  ● The result should be 0, 1, 1, 2, 3, 5, 8, 13, 21, 34

Ans:

**object** wk4ex4series {

**def** fibonacci(n: Int): Int = {

**if** (n==0){

**return** 0

}

**else** **if** (n < 3 && n>0){

**return** 1

}

**else** {

fibonacci(n - 1) + fibonacci(n - 2)

}

}

**def** main(args: Array[*String*]) {

**for** {i <- List.range(0, 10)}

**yield** { print(fibonacci(i) + ", ") }

}

}

**Exercise 5 (Optional)**

Write a function that takes the number and says here is the cube of the input:

● 5 -> 125 is the cube

● Retry doing it via lambda function

Ans:

**object** wk4ex5 {

**def** main(args: Array[*String*])

{

println(mycube(5,3))

// Using Lambda expression

**val** mycube1= (x:Int,y:Int) => scala.math.pow(x,y)

println (mycube1(5,3))

}

**def** mycube(n:Double,p:Double) : Double = {

**return** scala.math.pow(n,p)

}

}