BDT LAB 4

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1NT22CS002

Question 1: The signum of the function is 1 if the number is positive. -1 if the number is negative. Zero if it is zero

scala> def signam(n: Int):Int = {

| if(n == 1){

| 1

| }else if(n == 0){

| 0

| }else{

| -1

| }}

signam: (n: Int)Int

scala> signam(1)

res0: Int = 1

scala> signam(0)

res1: Int = 0

scala> signam(9)

res2: Int = -1

Question 2: write the sequece of number from 1 to 10 and 10 to 1

scala> var i = 0

i: Int = 0

scala> while (i < 5) {

| print(i)

| print(" ")

| i += 1

| }

0 1 2 3 4

Question 3: write a countdown that prints the number from n to 0

scala> def countdown(n: Int): Unit = {

| for (i <- n to 0 by -1) {

| println(i)

| }

| }

countdown: (n: Int)Unit

scala> countdown(5

| )

5

4

3

2

1

0

Question 4: write a for loop for computing the product of the unicode codes of all char in a String. Take example mas “Hello”

scala> def stringToUnicode(str: String): String = {

| str.map(char => s"\\u${char.toInt.toHexString.toUpperCase.padTo(4, '0')}").mkString

| }

scala> val mystring = "hello"

mystring: String = hello

scala> println(stringToUnicode(mystring))

\u6800\u6500\u6C00\u6C00\u6F00

scala> def unicodeCodePoints(str: String): Array[Int] = {

| str.map(\_.toInt).toArray

| }

unicodeCodePoints: (str: String)Array[Int]

scala> val myString = "Hello"

myString: String = Hello

scala> val codePoints = unicodeCodePoints(myString)

codePoints: Array[Int] = Array(72, 101, 108, 108, 111)

scala> println(codePoints.mkString(", "))

72, 101, 108, 108, 111

Question 5:

def rec(n: Int , x: Int): Double = {

| if ( n == 0) 1

| else if ( n > 0){

| if(n%2 == 0){

| val y = rec(n/2,x)

| y \* y

| }else{

| x \* rec(n-1,x)

| }

| }else{

| 1/rec(-n,x)

| }}

scala> power(2,4)

Double = 16.0

Tuples:

scala> val x = (1,"one",1.1)

x: (Int, String, Double) = (1,one,1.1)

scala> x.\_1

res0: Int = 1

scala> x.\_2

res1: String = one

scala> x.\_3

res2: Double = 1.1

Map:

scala> val marks = Map("Akshay"->25,"Mohan"->20,"Ramya"->27)

marks: scala.collection.immutable.Map[String,Int] = Map(Akshay -> 25, Mohan -> 20, Ramya -> 27)

scala> val marks = scala.collection.mutable.Map("Akshay"->25,"Mohan"->20,"Ramya"->27)

marks: scala.collection.mutable.Map[String,Int] = Map(Mohan -> 20, Akshay -> 25, Ramya -> 27)

scala> marks("Mohan")

res1: Int = 20

scala> marks += {"rishi"->49}

res3: marks.type = Map(Mohan -> 20, rishi -> 49, Akshay -> 25, Ramya -> 27)