

Scala coding assignment-1

1. WAP to calculate student grade based on below rules

- a. 90 to 100 -> Grade A
- b. 80 to 90 -> Grade B
- c. 70 to 80 -> Grade C
- d. Failure.

Ans :

Grading.scala

object Grading

```
{
    def main(arg: Array[String]){
        var gr, nm: String = "";
        var ph, ch, mt, en, tot, per: Int = 0;
        println("Students name");
        nm = scala.io.StdIn.readLine();
        println("Marks Physics : ");
        ph = scala.io.StdIn.readInt();
        println("Marks Chemistry : ");
        ch = scala.io.StdIn.readInt();
        println("Marks Maths : ");
        mt = scala.io.StdIn.readInt();
        println("Marks English : ");
        en = scala.io.StdIn.readInt();
        tot = ph + ch + mt + en
        per = tot / 4;

        println("Total marks ", tot);
        println("Percentage ", per);

        if (per >= 90)
            gr = "Grade A";
        else
            if (per >= 80)
                gr = "Grade B";
            else
                if (per >= 70)
                    gr = "Grade C";
                else
                    gr = "Failure";

        println(gr);
    }
}
```

```
Command Prompt

C:\Users\MaK>scalac Grading.scala
warning: 1 deprecation (since 2.13.0); re-run with -deprecation for details
1 warning

C:\Users\MaK>scala Grading
Students name
Sohan
Marks Physics :
67
Marks Chemistry :
68
Marks Maths :
56
Marks English :
89
<Total marks ,280>
<Percentage ,70>
Grade C

C:\Users\MaK>
```

2. WAP to calculate maximum % scored student report from below data.

```
{id:101,name:raj,cmarks:45,pmarks:55,mmarks:67}
{id:102,name:rajesh,cmarks:65,pmarks:85,mmarks:77}
{id:103,name:suraj,cmarks:43,pmarks:55,mmarks:60}
{id:104,name:tom,cmarks:71,pmarks:65,mmarks:70}
```

Ans :

File : SortPercent.scala

```
class Students{
  var id, cmarks, pmarks, mmarks, tot, per: Int = 0;
  var name: String = "";
  def SetVal(i:Int, nm:String, cm:Int, pm:Int, mm:Int): Unit = {
    this.id = i;
    this.name = nm;
    this.cmarks = cm;
    this.pmarks = pm;
    this.mmarks = mm;
    this.tot = cm + pm + mm;
    per = this.tot /3;
  }
  def Show(): Unit = {
    println("Student ID ",this.id," Name ",this.name);
    println("Chemistry marks ",this.cmarks);
    println("Physics marks ",this.pmarks);
    println("Math marks ",this.mmarks);
    println("Total marks ",this.tot);
    println("Percentage of marks ",this.per);
  }
}

object SortPercent
{
```

```
// var myArray : Array[String] = new Array[String](10);  
// val users = Array.fill[TestUser](2)(new TestUser())
```

```
def main(arg: Array[String]){  
  var i,j : Int = 0;  
  var stud = Array.fill[Students](4)(new Students());  
  stud(0).SetVal(101,"raj",45,55,67);  
  stud(1).SetVal(102,"rajesh",65,85,77);  
  stud(2).SetVal(103,"suraj",43,55,60);  
  stud(3).SetVal(104,"tom",71,65,70);
```

```
  var tmp = new Students();
```

```
  for(i <- 0 to 3)  
  {  
    for (j<- i to 3)  
    {  
      if (stud(i).tot < stud(j).tot)  
      {  
        tmp = stud(i);  
        stud(i) = stud(j);  
        stud(j) = tmp;  
      }  
    }  
  }  
  for( i <- 0 to 3)  
  {  
    stud(i).Show();  
    println("");  
  }  
}
```

```
Command Prompt
Grade C
C:\Users\MaK>scala SortPercent
(Student ID ,102, Name ,rajesh)
(Chemistry marks ,65)
(Physics marks ,85)
(Math marks ,77)
(Total marks ,227)
(Percentage of marks ,75)

(Student ID ,104, Name ,tom)
(Chemistry marks ,71)
(Physics marks ,65)
(Math marks ,70)
(Total marks ,206)
(Percentage of marks ,68)

(Student ID ,101, Name ,raj)
(Chemistry marks ,45)
(Physics marks ,55)
(Math marks ,67)
(Total marks ,167)
(Percentage of marks ,55)

(Student ID ,103, Name ,suraj)
(Chemistry marks ,43)
(Physics marks ,55)
(Math marks ,60)
(Total marks ,158)
(Percentage of marks ,52)

C:\Users\MaK>_
```

3. WAP to perform sorting of below data based on id and name(create class, object and a method for sorting in util class)

```
{id:101,name:raj}
{id:121,name:rajesh}
{id:130,name:suraj}
{id:114,name:tom}
```

Ans:

File : SortObject.scala

```
class Person{
  var id: Int = 0;
  var name: String = "";
  def SetVal(i:Int, nm:String): Unit = {
    this.id = i;
    this.name = nm;
  }

  def Show(): Unit = {
    println("Persons ID ",this.id," Name ",this.name);
  }
}

object SortObject
```

```

{
// var myArray : Array[String] = new Array[String](10);

// Arrays of Object=>
// val users = Array.fill[TestUser](2)(new TestUser())

def main(arg: Array[String]){
    var i,j : Int = 0;
    var pers = Array.fill[Person](4)(new Person());
    pers(0).SetVal(101,"raj");
    pers(1).SetVal(121,"rajesh");
    pers(2).SetVal(130,"suraj");
    pers(3).SetVal(114,"tom");

    var tmp = new Person();

    for(i <- 0 to 3)
    {
        for (j<- i to 3)
        {
            if (pers(i).id > pers(j).id)
            {
                tmp = pers(i);
                pers(i) = pers(j);
                pers(j) = tmp;
            }
        }
    }
    for( i <- 0 to 3)
    {
        pers(i).Show();
        println("");
    }
}
}

```

```

C:\Users\MaK>scala SortObject
<Persons ID ,101, Name ,raj>
<Persons ID ,114, Name ,tom>
<Persons ID ,121, Name ,rajesh>
<Persons ID ,130, Name ,suraj>
C:\Users\MaK>_

```

