**Task1. Package creation and String.**

* **Simple Java application with class (Object), Methods**
* **Developing user defined packages in Java**
* **Apply String handling methods**

1. Implement a program to create a Simple Interest and Sum of two values using the formula and display the calculated the value of Simple Interest and Sum of two values.

Formula: Simple Interest= (principal\*rate of interest\*no. of years)/100, z=a+c.

**Input Format**

1. First line should be get the value of principal
2. Second line should be get the value of rate
3. Third line should be get the value of no. of years
4. Fourth line should be get the value of a & b

Constraints:

1<=Years<=12

Output Format:

The first line represents the Simple Interest

The second line represents the value of Sum

**Sample Input:**

10000

5

5

5 5

**Sample Output:**

2500

10

**Algorithm:**

* Formula:

Simple Interest = (P × R × T)/100

where P = Principal Amount, R = Rate per Annum, T = Time (years)

* Declare Principal, Interest and Time of loans.
* Read the input from user Scanner class
* Apply in the formula.
* Get two inputs from user
* Add those two inputs and print it.
* Print the Simple Interest.

**Program:**

|  |
| --- |
| **import** java.util.Scanner;  **public** **class** Simple\_interest {  **public** **static** **void** main(String args[])  {  **float** principle;  **float** interest;  **float** time;  Scanner sr=**new** Scanner(System.***in***);  System.***out***.println("Enter the Principle Amount: ");  principle=sr.nextFloat();  System.***out***.println("Enter the Rate of Interest: ");  interest=sr.nextFloat();  System.***out***.println("Enter the Time in years: ");  time=sr.nextFloat();  **float** SI=(principle\*interest\*time)/100;  System.***out***.println("Simple Interest is: "+SI);  System.***out***.println("Enter the First value to add");  **int** a=sr.nextInt();  System.***out***.println("Enter the Second value to add");  **int** b=sr.nextInt();  **int** c=a+b;  System.***out***.println("Addition of two number is: "+c);  }  } |

1. Create the user-defined package named GradeCal which contains Grade class and methods like Gradeobtained. Gradeobtained method will get total marks obtained by student in three subject such as java, Data Structures, System Software and calculate the grade obtained by the student. To calculate grade follow the Grade system give below.

If average marks >=90 then Grade S

If average marks is between 70 to 89 then Grade A

If average marks is between 50 to 69 then Grade B

If average marks is less than 50 then Grade F

Create a main class and read Student name, Department, Register number, marks for three subject and access the package class to calculate the grade.

**Sample Input:**

John

CSE

12345

90

78

56

**Sample Output:**

John

CSE

12345

90

78

56

A

**Algorithm:**

Step 1: Create package class with Grade calculate method

Step 2: if average marks is greater than 90 then grade is S, 70 to 89 then A, 50 to 69 then B.

Step 3: Create a main class that import the user defined package

Step 4: Read Student name , department, Register number, Three subject marks.

Step 5: Find the total marks by adding 3 subject marks

Step 6: create the object for package class and access the grade calculate method by passing total marks as argument.

Step 7: print details of students with grade obtained.

**Solution:**

**Grade.java**

|  |
| --- |
| **package** GradeCal;  **public** **class** Grade {  **public** **char** Gradeoptained(**float** total)  {  **char** g;  **float** avg=total/3;  **if** (avg>=90)  {  g='S';  }  **else** **if**(avg>=70 && avg<90)  {  g='A';  }  **else** **if**(avg>=50 && avg<70)  {  g='B';  }  **else**  {  g='F';  }  **return** g;  }  } |

MainGrade.java

|  |
| --- |
| **import** GradeCal.Grade;  **import** java.util.Scanner;  **public** **class** MainGrade {  **public** **static** **void** main(String args[])  {  Scanner sr=**new** Scanner(System.***in***);  System.***out***.print("Enter the student name:");  String name=sr.nextLine();  System.***out***.print("Enter the Department:");  String Dept=sr.nextLine();  System.***out***.print("Enter the student Register Number:");  **int** Reg=sr.nextInt();  System.***out***.print("Enter the Java mark:");  **float** java=sr.nextFloat();  System.***out***.print("Enter the Datastructure mark:");  **float** datastructures=sr.nextFloat();  System.***out***.print("Enter the Systemsoftware mark:");  **float** systemsoftware=sr.nextFloat();  **float** total=(java+datastructures+systemsoftware);  Grade obj=**new** Grade();  System.***out***.println("Grade obtained by the student is:"+obj.Gradeoptained(total));  }  } |

1. Write a program that takes your full name as input and displays the abbreviations of the first and middle names except the last name which is displayed as it is. For example, if your name is Robert Brett Roser, then the output should be R.B.Roser.

**Input Format:** Get the Full name

**Output Format:** Print the abbreviations of first and middle name except last name

**Sample Input:** Robert Brett Roser

**Sample Output:** R.B.Roser

**Algorithm:**

Step 1: Read the full name using nextLine method in Scanner class

Step 2: Declare empty string variable

Step3: using charAt method find the first character of first name and store it in string variable

Step 4: Using looping statement access each character in the input string and find the blank space to access the middle name first character.

Step 5: Store the middle name first character in string variable along with first name character.

Step 6: Access the last name and store it in the string variable.

Step 5: print the name in the format.

**Solution:**

|  |
| --- |
| import java.util.\*;  class Ans{  public static void main(String[] args){  Scanner s = new Scanner(System.in);  String st = s.nextLine();  String sr = "";  sr = sr+st.charAt(0);  sr = sr+". ";  for (int i = 0; i<st.length();i++){  if(st.charAt(i) == ' ' && st.charAt(i+1)!=' ' && i+1<st.length()){  sr = (sr+st.charAt(i+1)).toUpperCase();  sr = sr+". ";  }  }  String last\_wrd = "";  //to get the last word  for(int i = st.length()-1;i>=0;i--){  if(st.charAt(i) == ' '){  last\_wrd = st.substring(i+2);  break;  }  }  //to remove last ". "  sr = sr.substring(0,sr.length()-2);  sr = sr+last\_wrd;  System.out.println(sr);  }  } |