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Vellore Institute of Technology

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Programme	:	**BTech. CSE Core**	Semester	:	**Win 2021-22**
Course	:	**Java Programming**	Code	:	**CSE1007**
Faculty	:	**Dr. Pradeep K**	Slot	:	**D2+TD2**
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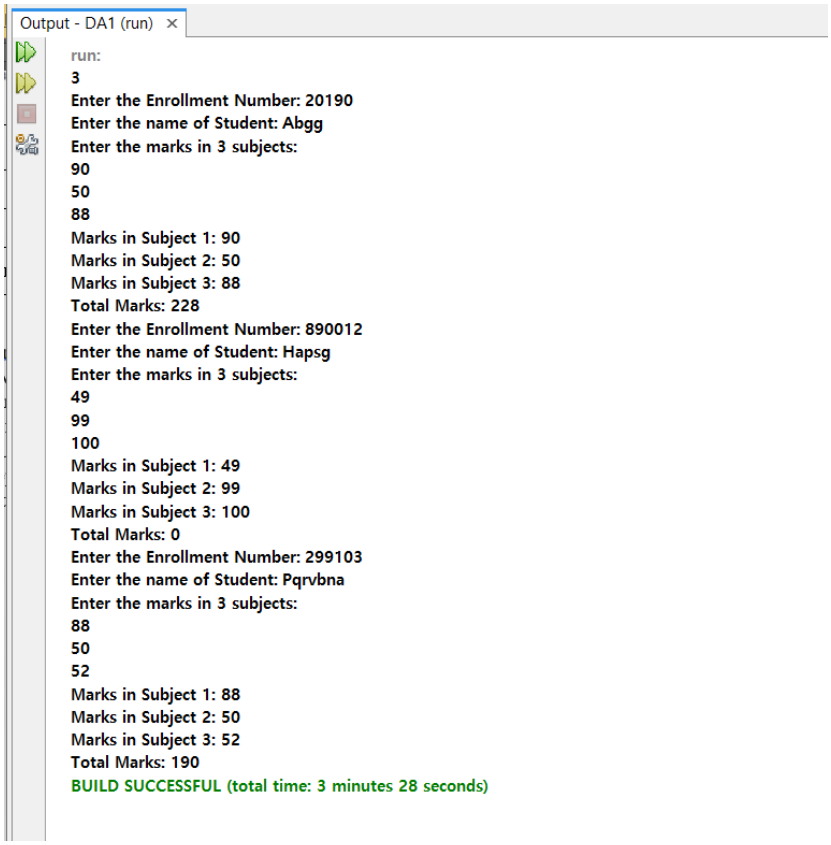
1. Write a java program to create a Student class with following attributes.
   Enrolment No, Name, Mark of sub1, Mark of sub2, mark of sub3, Total Marks. Total of the three marks must be calculated only when the student passes in all three subjects. The pass mark for each subject is 50. If a candidate fails in any one of the subjects his total mark must be declared as zero. Using this condition write a constructor for this class. Write separate functions for accepting and displaying student details. In the main method create an array of three student objects and display the details.

```
package da1;
import java.util.*;
class Student{
    int enrollment_number, mark1, mark2, mark3, total;
    String name="";
    Student(){ }
    Student(Student temp){
        this.name = temp.name;
        this.mark1=temp.mark1;
        this.mark2=temp.mark2;
        this.mark3=temp.mark3;
        if(temp.mark1<50 || temp.mark2<50 || temp.mark3<50)
            this.total=0;
        else
            this.total = temp.mark1+temp.mark2+temp.mark3;
        this.enrollment_number=temp.enrollment_number;
    }
    void accept_details(){
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter the Enrollment Number: ");
        enrollment_number = sc.nextInt();
        System.out.print("Enter the name of Student: ");
        String temp = sc.next();
        name = sc.nextLine();
        System.out.println("Enter the marks in 3 subjects: ");
        mark1=sc.nextInt();
        mark2=sc.nextInt();
        mark3=sc.nextInt();
    }
    void print_details(){
        System.out.println("Marks in Subject 1: "+mark1);
```

```
        System.out.println("Marks in Subject 2: "+mark2);
        System.out.println("Marks in Subject 3: "+mark3);
        System.out.println("Total Marks: "+total);
    }
}
public class DA1 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int n = sc.nextInt();
        Student temp = new Student();
        Student s1[] = new Student[n];
        for(int i=0; i<n; i++){
            temp.accept_details();
            s1[i] = new Student(temp);
            s1[i].print_details();
        }
    }

}
```

Output:

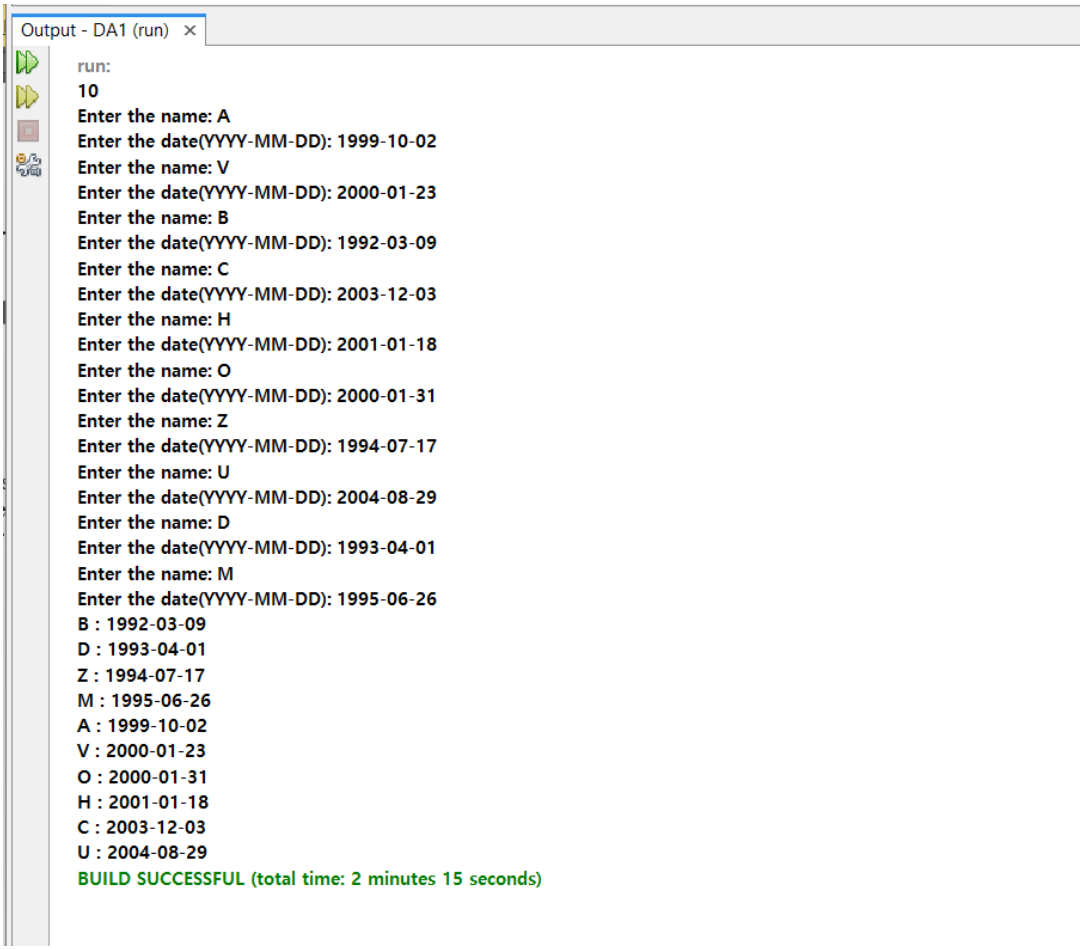


2. Write a Java program to define a class called employee with the name and date of appointment. Create ten employee objects as an array and sort them as per their date of appointment. ie, print them as per their seniority.

```
package da1;
import java.util.*;
class Employee{
    String name, date;
    void accept_details(){
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter the name: ");
        name = sc.nextLine();
        System.out.print("Enter the date(YYYY-MM-DD): ");
        date = sc.nextLine();
    }
    void sort (Employee e1[], int n){
        for(int i=0; i<n-1; i++){
            for(int j=i+1; j<n; j++){
                if(e1[i].date.compareTo(e1[j].date)>0){
                    Employee temp = e1[i];
                    e1[i] = e1[j];
                    e1[j] = temp;
                }
            }
        }
    }
    void print_details(Employee e1[], int n){
        for(int i=0; i<n ; i++)
            System.out.println(e1[i].name+" : "+e1[i].date);
    }
}
public class DA1 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int n = sc.nextInt();
        Employee e1[] = new Employee[n];
        for(int i=0; i<n; i++){
            e1[i] = new Employee();
            e1[i].accept_details();
        }
        e1[0].sort(e1, n);
        e1[0].print_details(e1,n);
    }

}
```

Output:



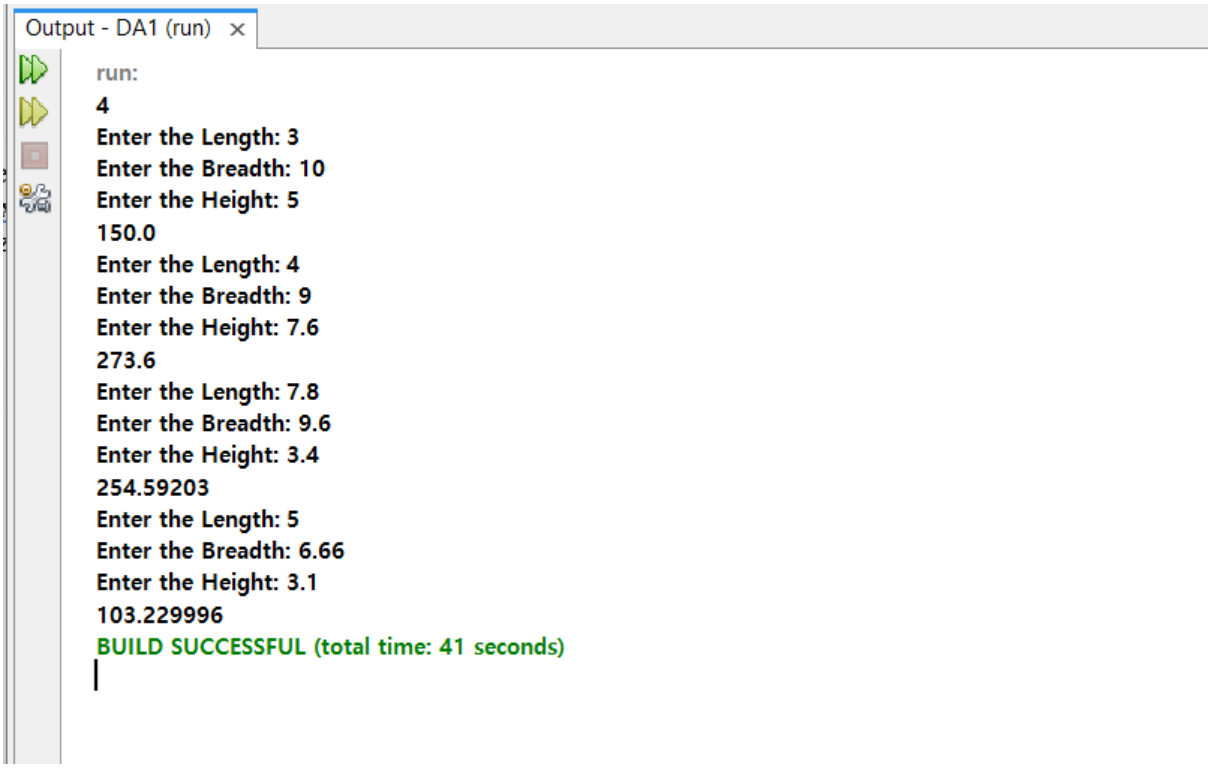
3. Develop a java application to make use of a parameterized method inside a class. Take the following case: Create a class Box and define a method in this class which will return the volume of the box. Initialize two objects for your class and print out the volumes respectively.

```
package da1;
import java.util.*;
class Box{
    public float length, breadth, height;
    void accept_details(){
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter the Length: ");
        length = sc.nextFloat();
        System.out.print("Enter the Breadth: ");
        breadth = sc.nextFloat();
        System.out.print("Enter the Height: ");
        height = sc.nextFloat();
    }
    float volume(float l, float b, float h ){
```

```
        return (l*b*h);
    }
}
public class DA1 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int n = sc.nextInt();
        Box b1[] = new Box[n];
        for(int i=0; i<n; i++){
            b1[i] = new Box();
            b1[i].accept_details();
            System.out.println(b1[i].volume(b1[i].length, b1[i].breadth, b1[i].height));
        }
    }

}
```

Output:



4. Write a java program using interface concepts and abstract class.

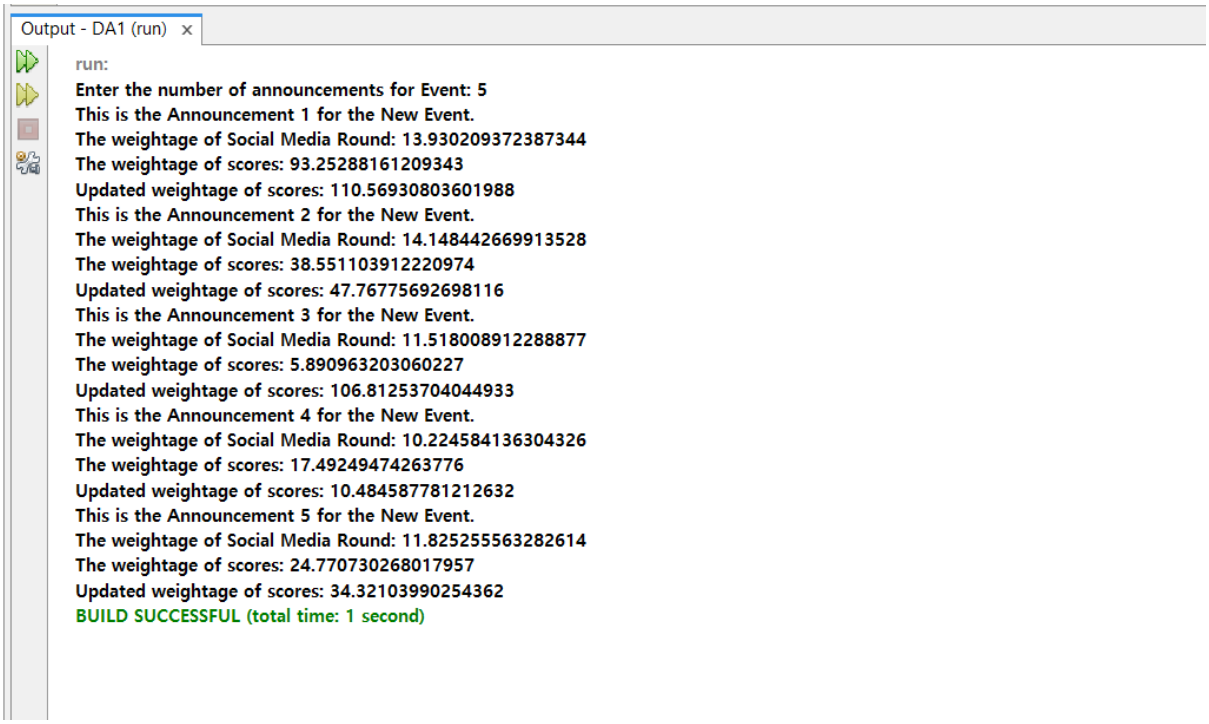
```
package da1;
import java.util.*;
import java.lang.Math;

abstract class SubClass {
    void announcement(int i) {};
    void registrations(int n){};
    void participants(int n){};
}

interface Input {
    void accept();
}

class Parent extends SubClass implements Input{
        public int num;
        void announcement(int i){
            System.out.println("This is the Announcement "+i+" for the New Event.");
        }
        void registrations(int n){
            System.out.println("The weightage of Social Media Round:
"+(n+10*Math.random()));
        }
        void participants(int n){
            System.out.println("The weightage of scores: "+(n+90*Math.random()));
            System.out.println("Updated weightage of scores: "+(n+110*Math.random()));
        }
        public void accept(){
            Scanner sc = new Scanner(System.in);
            System.out.print("Enter the number of announcements for Event: ");
            num = sc.nextInt();
        }
}
public class DA1 {
    public static void main(String args[]) {
        Parent p1 = new Parent();
        p1.accept();
        for(int i=0; i<p1.num; i++){
            p1.announcement(i+1);
            p1.registrations(p1.num);
            p1.participants(p1.num);
        }
    }
}
```

OUTPUT:



5. Write a java program using Package concepts.

a. Package – da1_2

```java
package da1_2;
import java.util.*;

public class University{
    String name;
    int num;
    public void accept_details(){
        Scanner sc = new Scanner(System.in);
        name=sc.nextLine();
        num=sc.nextInt();
    }
    public void print_details(){
        System.out.println(name+" : "+num);
    }
}
```

b. Package – da1

```java
package da1;
import java.util.*;
import da1_2.University;
class Student{
    String name;
    int num;
    void accept_details(){
        Scanner sc = new Scanner(System.in);
        name=sc.nextLine();
```

```
        num=sc.nextInt();
    }
    void print_details(){
        System.out.println(name+" : "+num);
    }
}
public class DA1 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int n = sc.nextInt();
        University u1[] = new University[n];
        Student s1[] = new Student[n];
        for(int i=0; i<n; i++){
            u1[i] = new University();
            u1[i].accept_details();
            s1[i] = new Student();
            s1[i].accept_details();
            System.out.print("University: ");
            u1[i].print_details();
            System.out.print("Student: ");
            s1[i].print_details();
        }
    }

}
```

OUTPUT: