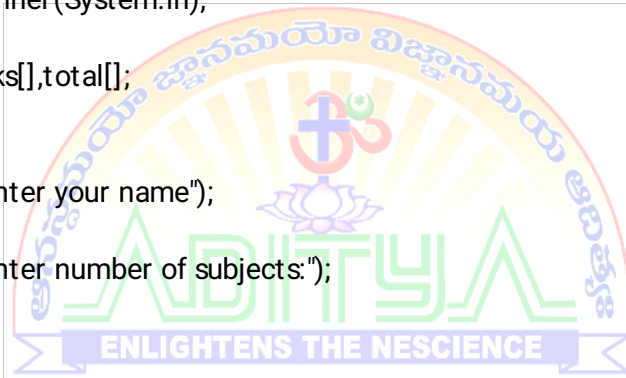


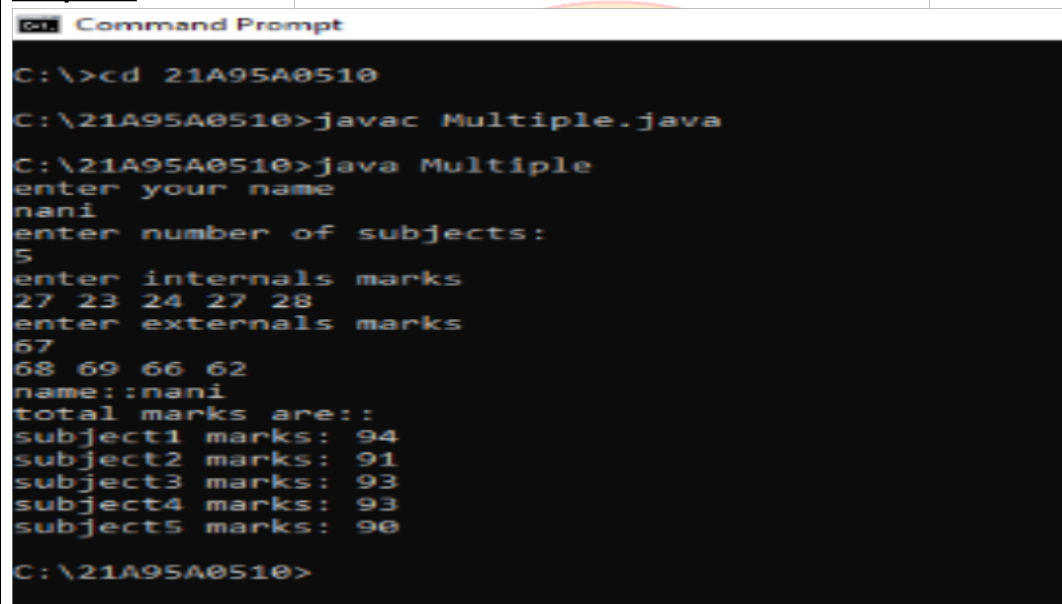
7.2) Take the details of internal exam marks in one Interface. Take the details of external exam marks in another interface. Write a Java program to find the total marks obtained in each subject by a student. (Note: Make use of Multiple Inheritance using interfaces.

PROGRAM:

```
import java.util.*;
interface internals
{
    public void accept_internals();
}
interface externals
{
    public void acceptexternals();
}
class Multiple implements internals,externals
{ Scanner sc=new Scanner(System.in);
String name;
int sno,imarks[],emarks[],total[];
Multiple()
{
    System.out.println("enter your name");
    name=sc.nextLine();
    System.out.println("enter number of subjects:");
    sno=sc.nextInt();
    imarks=new int[sno];
    emarks=new int[sno];
    total=new int[sno];
}
    public void accept_internals()
    {
        System.out.println("enter internals marks");
        for(int i=0;i<sno;i++)
            imarks[i]=sc.nextInt();
    }
    public void acceptexternals()
    {
        System.out.println("enter externals marks");
        for(int i=0;i<sno;i++)
            emarks[i]=sc.nextInt();
    }
    void sum()
    {
        for(int i=0;i<sno;i++)
            total[i]=imarks[i]+emarks[i];
    }
}
```



```
}  
void display()  
{  
System.out.println("name::"+name);  
System.out.println("total marks are::");  
for(int i=0;i<sno;i++)  
System.out.println("subject" +(i+1) + " marks: " + total[i]);  
}  
public static void main(String[] args)  
{  
Multiple m1=new Multiple();  
m1.accept_internals();  
m1.accept externals();  
m1.sum();  
m1.display();  
}  
}
```

Output :-

```
Command Prompt  
C:\>cd 21A95A0510  
C:\21A95A0510>javac Multiple.java  
C:\21A95A0510>java Multiple  
enter your name  
nani  
enter number of subjects:  
5  
enter internals marks  
27 23 24 27 28  
enter externals marks  
67  
68 69 66 62  
name::nani  
total marks are::  
subject1 marks: 94  
subject2 marks: 91  
subject3 marks: 93  
subject4 marks: 93  
subject5 marks: 90  
C:\21A95A0510>
```

8) Runtime Polymorphism

8.1) Write a JAVA program that implements Runtime polymorphism

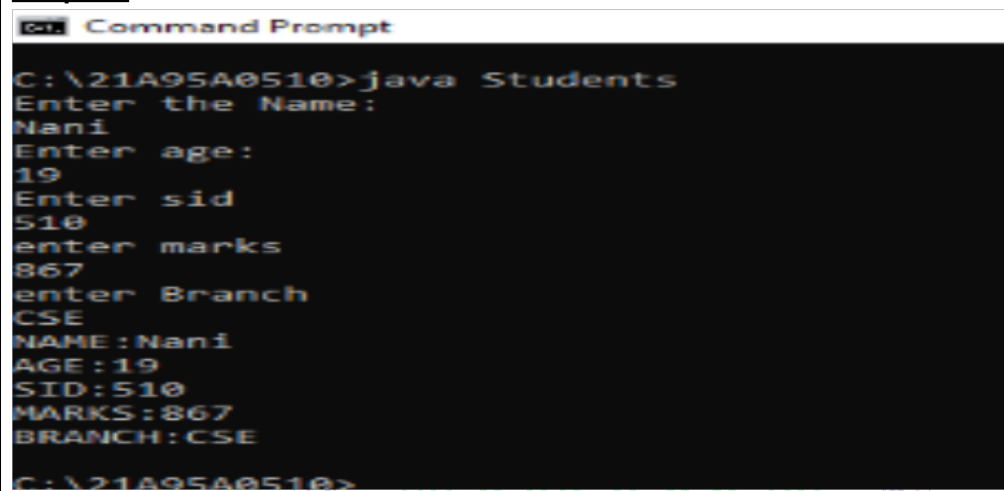
Program:

```
import java.util.*;
class Person
{
    Scanner s=new Scanner(System.in);
    int age;
    String name;
    void get()
    {
        System.out.println("Enter the Name:");
        name=s.nextLine();
        System.out.println("Enter age:");
        age=s.nextInt();
    }
    void show()
    {
        System.out.println("NAME:"+name);
        System.out.println("AGE:"+age);
    }
}
class Students extends Person
{
    int sid,marks;
    String branch;
    Students()
    {
        System.out.println("Enter sid");
        sid=s.nextInt();
        System.out.println("enter marks");
        marks=s.nextInt();
        System.out.println("enter Branch");
        s.nextLine();
        branch=s.nextLine();
    }
    void show()
    {
        System.out.println("SID:"+sid+"\nMARKS:"+marks+"\nBRANCH:"+branch);
    }
}
public static void main(String args[])
```



```
{  
Person p=new Person();  
Person q;  
q=p;  
q.get();  
Students h=new Students();  
q.show();  
q=h;  
q.show();  
}  
}
```

Output:-



```
C:\21A95A0510>java Students  
Enter the Name:  
Nani  
Enter age:  
19  
Enter sid  
510  
enter marks  
867  
enter Branch  
CSE  
NAME:Nani  
AGE:19  
SID:510  
MARKS:867  
BRANCH:CSE  
C:\21A95A0510>
```



9.1) Write a Java program that import and use user defined package.

Aim: Write a Java program that import and use user defined package.

Program:

UserDef.java

package demo;

public class UserDef

{

 public void show()

 {

 System.out.println("Welcome to Java User Defined Packages");

 }

}

Udf.java

import demo.*;

class Udf

{

 public static void main(String args[])

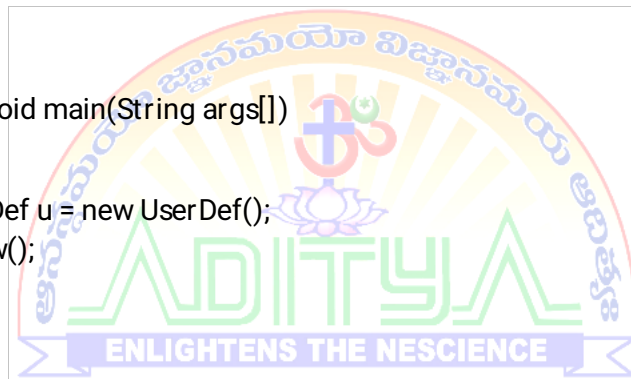
 {

 UserDef u = new UserDef();

 u.show();

 }

}



Output:-

```
D:\21A95A0510>java -d . UserDef.java
```

```
D:\21A95A0510>java UserDef.java
```

```
Welcome to Java User Defined Packages
```

9.2) Write a Java program to illustrate the use of protected members in a package.

Aim: Write a Java program to illustrate the use of protected members in a package.

Program:

Pro.java

```
package access;
```

```
public class Pro
```

```
{
    protected void msg()
    {
        System.out.println("Welcome to protected class member");
    }
}
```

Acc.java

```
Import access.Pro;
```

```
class Acc
```

```
{
    public static void main(String args[])
```

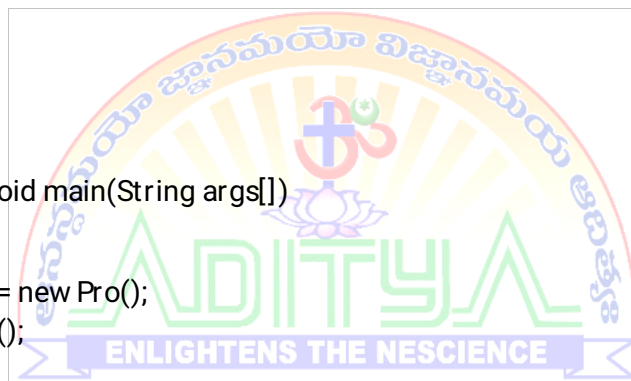
```
{
```

```
        Pro p = new Pro();
```

```
        p.msg();
```

```
    }
```

```
}
```



Output:-

```
D:\21A95A0510>javac -d . pro.java

D:\21A95A0510>java Acc.java
Acc.java:7: error: msg() has protected access in pro
        p.msg();
        ^
1 error
error: compilation failed
```

10.1) Write a Java program to illustrate exception handling mechanism using multiple catch clauses

Program:

```
import java.util.*;
class Arrexp
{
    public static void main(String args[])
    {
        try
        {
            int n;
            Scanner s=new Scanner(System.in);
            System.out.println("Enter index you want to print");
            n=s.nextInt();
            int a[]={1,2,5,8,6};
            if(n>a.length-1)
                throw new ArrayIndexOutOfBoundsException();
            else if(n<0)
                throw new NegativeArraySizeException();
            else
                System.out.println("Element at given index:"+a[n]);
        }
        catch(ArrayIndexOutOfBoundsException e)
        {
            System.out.println("Given index is not in range of array");
        }
        catch(NegativeArraySizeException n)
        {
            System.out.println("Array index should not be negative");
        }
    }
}
```

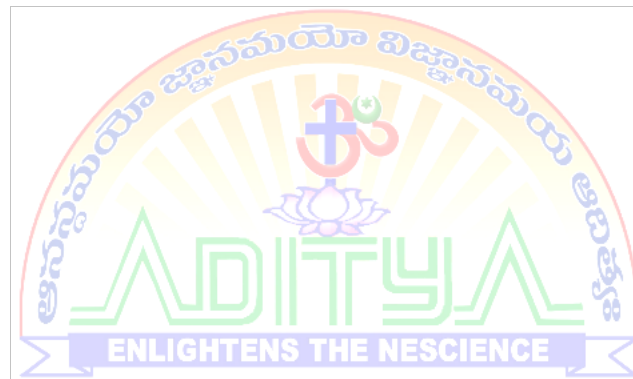
OUTPUT:

```
Command Prompt

D:\21A95A0510>javac Arrexp.java

D:\21A95A0510>java Arrexp
Enter index you want to print
65
Given index is not in range of array

D:\21A95A0510>
D:\21A95A0510>_
```

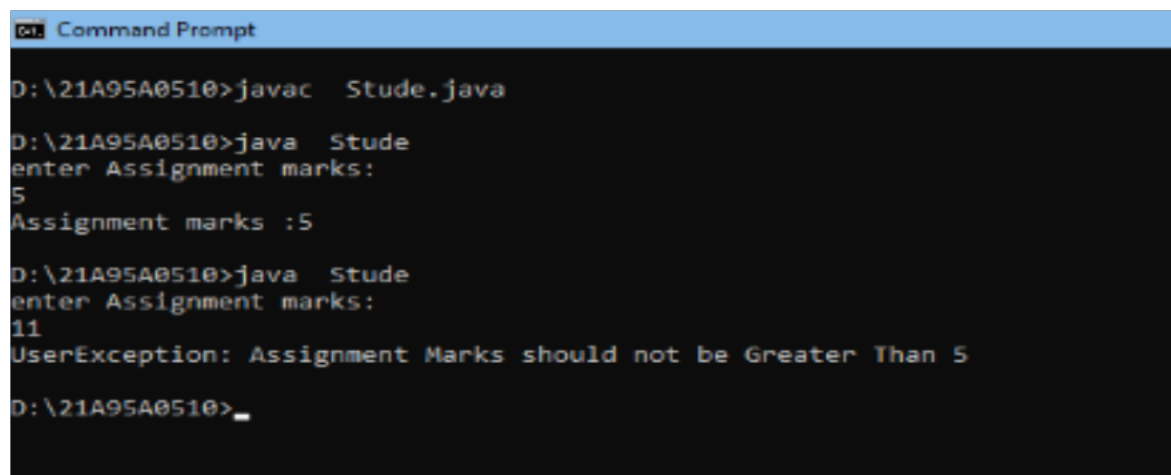


10.2) Write a Java program to make use of Built-in and user defined Exceptions in handling a run time exception.

Program:

```
import java.util.*;
class UserException extends Exception
{
    UserException(String g)
    {
        super(g);
    }
}
class Stude
{
    public static void main(String args[])
    {
        try
        {
            int m;
            Scanner s=new Scanner(System.in);
            System.out.println("enter Assignment marks:");
            m=s.nextInt();
            if(m>5)
                throw new UserException("Assignment Marks should not be Greater Than 5");
            else
                System.out.println("Assignment marks :"+m);
        }
        catch(UserException u)
        {
            System.out.println(u);
        }
    }
}
```

Output:-



```
Command Prompt
D:\21A95A0510>javac Stude.java
D:\21A95A0510>java Stude
enter Assignment marks:
5
Assignment marks :5
D:\21A95A0510>java Stude
enter Assignment marks:
11
UserException: Assignment Marks should not be Greater Than 5
D:\21A95A0510>_
```

Exp No:
Date:



Page No:

