Experiment Number : 9 **Date: 12-2-26**

Implementation of a Java Program to import packages using different methods:

Aim:

Write a Java program to import packages using different methods for different use cases.

PRE LAB EXERCISE:

QUESTIONS:

1. **How to import a single class and multiple classes from a package in Java?**

   Import a single class:
   import java.util.ArrayList;
   Import multiple classes (entire package):
   import java.util.*;

2. **Which package is always imported by default in every Java class?**

   `java.lang`

   It is automatically imported and contains commonly used classes like `String`, `System`, `Math`, `Integer`, etc.

IN LAB EXERCISE:

Objective

To understand and implement the Java packages using different methods and import them.

Problem:

Define a package named ‘useFul’ with a class names ‘UseMe’ having following methods:

1) area()- To calculate the area of given shape.

2) salary()- To calculate the salary given basic Salary,da,hRA.

3) percentage()-To calculate the percentage given total marks and marks obtained.

4) Develop a program named ‘Package Use’ to import the above package ‘useFul’ and use the method area().

5) Develop a program named ‘manager’

Source Code

```
//Package Creation:
package useFull;
import java.util.*;
public class UseMe
{
        Scanner obj=new Scanner(System.in);
public static void area()
      {
          class method{
           void aos(int a)
           {
             System.out.print("\nArea of square with length "+a+" is "+(a*a));
           }
          void aor(int a,int b)
          {
            System.out.print("\nArea of reactangle with dimensions "+a+" & "+b+" is
"+(a*b));
           }
           void aoc(int r)
          {
            double a=3.14*r*r;
           }
          System.out.print("\nArea of circle with radius "+r+" is "+a);
        }
        void aot(int a,int b)
         {
          float ar=(a*b)/2;
          System.out.print("\nArea of triangle with dimensions "+a+" &"+b+" is "+ar);
         } }
        Scanner obj=new Scanner(System.in);
```

```
        method m=new method();
        System.out.print("\n1.Square\n2.Rectangle\n3.Circle\n4.Triangle\nSelect the shape\n");
        int ch=obj.nextInt();
        UseMe u=new UseMe();
        switch(ch)
                {
                case 1:System.out.print("\nEnter the length of side of square : ");
                        int s=obj.nextInt();m.aos(s);
                        break;
                case 2:System.out.print("\nEnter the dimensions of rectangle : ");
                        int l=obj.nextInt();
                        int b=obj.nextInt();
                        m.aor(l,b);
                        break;
                case 3:System.out.print("\nEnter the radius of circle : ");
                        int r=obj.nextInt();
                        m.aoc(r);
                        break;
                case 4:System.out.print("\nEnter the dimensions of triangle : ");
                        int ba=obj.nextInt();
                        int w=obj.nextInt();
                        m.aot(ba,w);
                        break; } }
public void salary()
   {
        int ba,da,hra;
        System.out.print("\nEnter the basic salary : ");
        ba=obj.nextInt();
        System.out.print("\nEnter the dearness allowance :");
        da=obj.nextInt();
```

```
        System.out.print("\nEnter the house rent allowance : ");
        hra=obj.nextInt();
        System.out.print("\nThe total Gross salary of employee is : "+(ba+da+hra));
    }
public void percentage()
    {
        int n,sum=0;
        float p;
        System.out.print("\nEnter the total number of subjects : ");
        n=obj.nextInt();
        int m[]=new int[n];
        System.out.print("\nEnter the marks of "+n+" subjects : ");
        for(int i=0;i<n;i++)
        {
            m[n]=obj.nextInt();
        }
        for(int i=0;i<n;i++)
        {
             sum=sum+m[i];
        }
        p=sum/n;
        {
                System.out.print("\nPercentahe of student : "+p);
        }
     }
}
//Package Implementation-1:
        import useFull.UseMe;
        class packageUse
        {
```

```
        public static void main(String args[])
        {
        UseMe o=new UseMe();o.area();
        }
    }
```

Output

```
1.      Square
2.      Rectangle
3.      Circle
4.      Triangle
Select the shape
1

Enter the length of side of square:
4
Area of the square with length 4 is 16
```

//Package Implementation-2:

```
    import useFull.UseMe;
    class manager
    {
       public static void main(String args[])
       {
        UseMe obj=new UseMe();obj.salary();
       }
    }
```

Output

```
Enter the basic salary:
40000
Enter the dearness allowance:
1000
Enter the house rent allowance:
7000
The total Gross salary of employee is: 48000
```

POST LAB EXERCISE:

1. **Find the key differences between java.util and java.lang packages.**

Feature	java.lang	java.util
Import	Automatically imported	Must be imported manually
Purpose	Basic language support	Utility classes & data structures
Contains	String, System, Math, Wrapper classes	ArrayList, HashMap, Scanner, Collections
Usage	Core Java features	Collection Framework, date, random, etc.

2. **List some of the subpackages of java.util**

- `java.util.concurrent`
- `java.util.function`
- `java.util.logging`
- `java.util.regex`
- `java.util.stream`

ASSESSMENT

Description	Max Marks	Marks Awarded
Pre Lab Exercise	**5**	
In Lab Exercise	**10**	
Post Lab Exercise	**5**	
Viva	**10**	
Total	**30**	
Faculty Signature		