8.ACCESS CONTROL

Experiment no. 8

Date: 28/8/24
Roll no: B014

Aim: To create packages with access control and importing them in appropriate class.

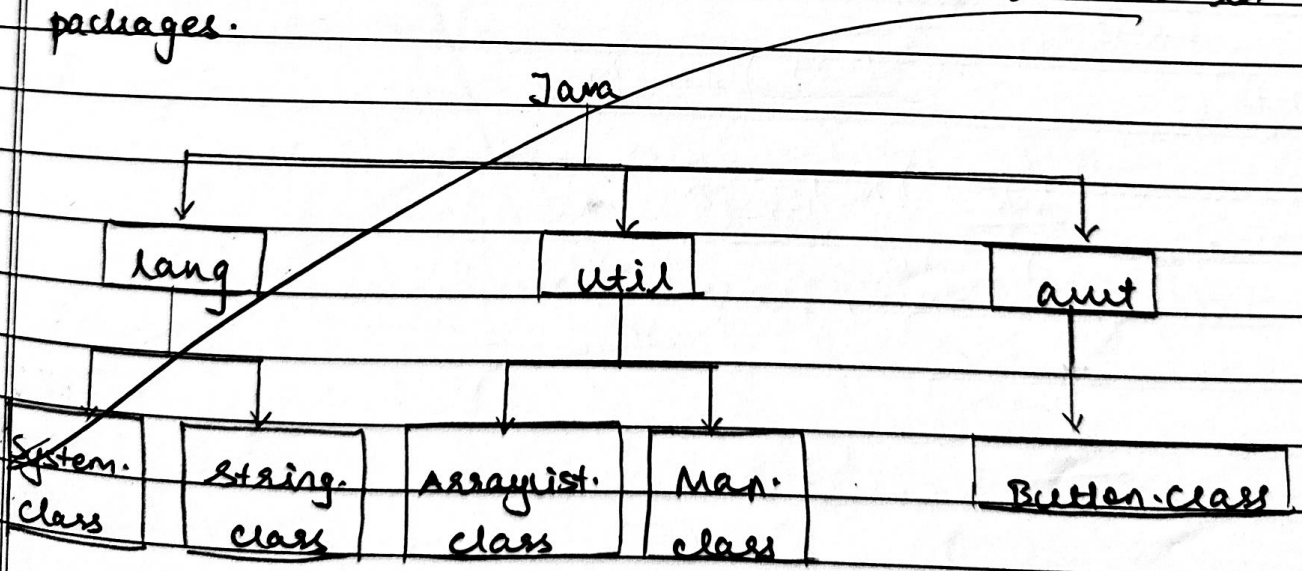
Theory:

Package in Java:

- A Java package is a group of similar types of classes, interfaces and sub-packages.
- Package in Java is a mechanism to encapsulate a group of classes, sub packages and interfaces.
- The 'package' keyword is used to create a package in Java.

Built-in packages:

pre-defined packages which contain a large no. of classes and interfaces are known as built-in packages.



User defined packages in Java:
User defined packages are defined by the users or programmers.
Steps to create user defined package:
1. first, choose a name for the package which is to be created and include the package in the 1st line in the Java source code.

2. Further inclusion of classes, interfaces, annotation types, etc. that is required in the package

syntax: `package Packagename;`

procedure:
program 1: Package a test.
package program:

```
package data;
public class Demo
{
    public void show()
    {
        System.out.println("hello world!");
    }
}
```

to insert a class into package:

```
javac Demo.java
javac -d . Demo.java
```

output:

```
Hello world!
```

Test program:

```
import data.Demo;
class Test
{
    public static void main(String[] args)
    {
        Demo d = new Demo();
        d.show();
    }
}
```

program 2:

package program:

```
package data;
public class Arithmetic()
{
    public void add( int a, int b)
    {
        System.out.println("sum is : "+(a+b));
    }
    public void sub( int a, int b)
    {
        System.out.println("diff is : "+(a-b));
    }
    public void mul( int a, int b)
    {
        System.out.println("product is : "+(a*b));
    }
    public void div ( int a, int b)
    {
```

```
        System.out.println(" div is : "+(a/b));
    }
    public void rem(int a, int b)
    {
        system.out.println(" remainder is : "(a%b));
    }
}
```

test:

```
import data.Arithmeticop;
import java.util.Scanner;
class Test
{
    public static void main(String[] args)
    {
        Scanner sc = new Scanner(System.in);
        Arithmeticop c = new Arithmeticop();
        System.out.println(" enter choice : \n 1.Add \n 2.
        Sub \n 3.Mul \n 4.Div \n 5.Rem ");
        int choice = sc.nextInt();
        switch(choice)
        {
        case 1:
            System.out.println(" enter nos to add: ");
            int a = sc.nextInt();
            int b = sc.nextInt();
            c.add(a,b);
            break;
        case 2:
            System.out.println(" enter nos to sub: ");
            int c = sc.nextInt();
```

```
int f = sc.nextInt();
c.sub(e,f);
break;
case 3:
System.out.println("enter nos to mul: ");
int g = sc.nextInt();
int h = sc.nextInt();
c.mul(g,h);
break;
case 4:
System.out.println("enter nos to divide: ");
int i = sc.nextInt();
int j = sc.nextInt();
c.div(i,j);
break;
case 5:
System.out.println("enter nos for sem: ");
int k = sc.nextInt();
int l = sc.nextInt();
c.sem(k,l);
break;
default:
System.out.println("invalid choice");
break;
}
}
```

Output:

```
Enter choice:
1. Add
2. Sub
3. Mul
4. Div
5. Rem

1. Add
enter numbers to add:
2,3
sum is: 5
```

Conclusion: Hence, we have created packages with access control and importing them in appropriate class.

10/9/24