Assignment No. 11

Title : Interfaces & packages.

Problem statement : Write Java Program which will demostrate a concept of interface & package in this assignment. design & used castomize interface & package for speciffic application are expected.

Objective :

i) To understand conept of interface in java language.

ii) To understand the conept of packages in java language.

Theory :

Interface :

An interface in java is blue print of a class. it has static constant & abstract method only. It is mechanism in java to achieve full abstraction. It is used to achieve multiple inheritance in java.

Need of Interface :

i) It is used to achieve fully abstraction

ii) By interface java support multiple inheritance

iii) It is used to achieve loosely coupled system.

interface fields are public, static & final by default
& methods are abstract.

Java packages :-

- A package in java is used to group related
  classes.

packages are divided into 2 categories :-
i) Built in packages
ii) user defined packages.

i) Built in packages :-

ⓐ Java API is a library of pre-written
   classes that are free to use, included in
   the JDE
ⓑ To use a class or packages from the
   library you need to use implicit keyword.
   import

Syntax :-   import package.name.class;
e.g. :-   import java.util.scanner;

ii) user defined packages :-

To create a package, use the package
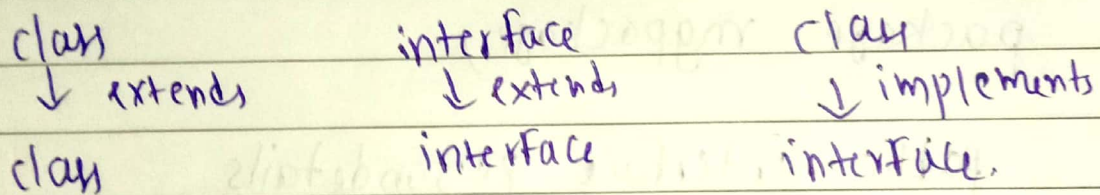keyword.

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e.g :-
```
package  mypack;
class  mypackageclas
{
        public static void main (String args[])
        {
                System.out.println ("Hello");
        }
}
```

Interface Example :-

```
class                    interface           class
  ↓ extends                ↓ extends            ↓ implements
class                    interface            interface.
```

e.g :-
```
interface J1
{
        int c1 = 10;
        void display ();
}


class ABC  implements J1
{
        void display ()
        {
                System.out.println (c1);
        }
}
```

```
public static void main (String args [])
{
    ABC a1 = new ABC();
    a1.display();
}
}
```

Algorithms :-

For implementing packages we need to create package first

for e.g.

```
package mypackage;

public interface persondetails
{
    // abstract method;
    // static final fields
}
```

Store the packages inside mypackage folder.

Create the main program .java where used
· this packages.

```
import mypackage.persondetails;
```

Conclusion :-

Thus we have implemented the java program based on interface & packages.

Interface are used to remove conflict of multiple inheritance & to define behaviour.

Packages are used to categorics classes & provide reusability.