Experiment No. 5
Implement a program on Packages.
Date of Performance:
Date of Submission:

Aim: To use packages in java.

Objective: To use packages in java to use readymade classes available in them using square root method in math class.

Theory:

A java package is a group of similar types of classes, interfaces and sub-packages. Packages are used in Java in order to prevent naming conflicts, to control access, to make searching/locating and usage of classes, interfaces, enumerations and annotations easier, etc.

There are two types of packages-

1. Built-in package: The already defined package like java.io.*, java.lang.* etc are known as built-in packages.

2. User defined package: The package we create for is called user-defined package.

Programmers can define their own packages to bundle group of classes/interfaces, etc. While creating a package, the user should choose a name for the package and include a package statement along with that name at the top of every source file that contains the classes, interfaces, enumerations, and annotation types that you want to include in the package. If a package statement is not used then the class, interfaces, enumerations, and annotation types will be placed in the current default package.

Code:

```java
class Person {

    String name;

    int age;

 public Person(String name, int age) {

        this.name = name;

        this.age = age;

    }

    public void introduce() {
```

```java
      System.out.println("Hello, my name is " + name + " and I am " + age + " years old.");

   }

}

class Student extends Person {

   private String studentId;

   public Student(String name, int age, String studentId) {

      super(name, age);

      this.studentId = studentId;

   }

   public void study() {

      System.out.println("I am a student with ID " + studentId + " and I am studying.");

   }

}

public class Default_pack {

   public static void main(String[] args) {

      Person person = new Person("SANIKA", 19);

      Student student = new Student("MANSI", 18, "1001");

      person.introduce();

student.introduce();

 student.study();

   }

}
```

Output:

```
Hello, my name is SANIKA and I am 19 years old.
Hello, my name is MANSI and I am 18 years old.
I am a student with ID 1001 and I am studying.
```

Conclusion:

Autoencoder are a type of deep neural network that can be used for image compression. Autoencoders work by learning to represent an input image in a lower-dimensional space, and then reconstructing the original image from the lower-dimensional representation.

The autoencoder architecture for image compression typically consists of two parts: an encoder and a decoder. The encoder takes the input image and compresses it into a lower-dimensional representation. The decoder then takes the lower-dimensional representation and reconstructs the original image.

The encoder and decoder are typically implemented as convolutional neural networks (CNNs). CNNs are a type of neural network that are well-suited for image processing tasks.

Autoencoders can be trained to compress images without losing too much information. This can be useful for reducing the size of images without sacrificing too much quality.