Geometric Dimensions

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we will create a Java project

Go to File→ New → project → search for java → Select on java project→ press next → give name as `GeometryCalculator` → click on finish button
If it asks for open perspective-> click on open perspective
You will see project on left side

> create a package

We will always create a package and then create a class
A package is a collection of java class

Go to your Project Phase1-JavaPrograms -> open the project → Right click on src folder -> select New → select Package → give the package name as "calculator" → click on finsih

> create a java class

Select the package→ right click → new →select class→ class wizard will open → give name of class as practice_cal -> select the checkbox for public static void main(string[] argos) → and click on finish button

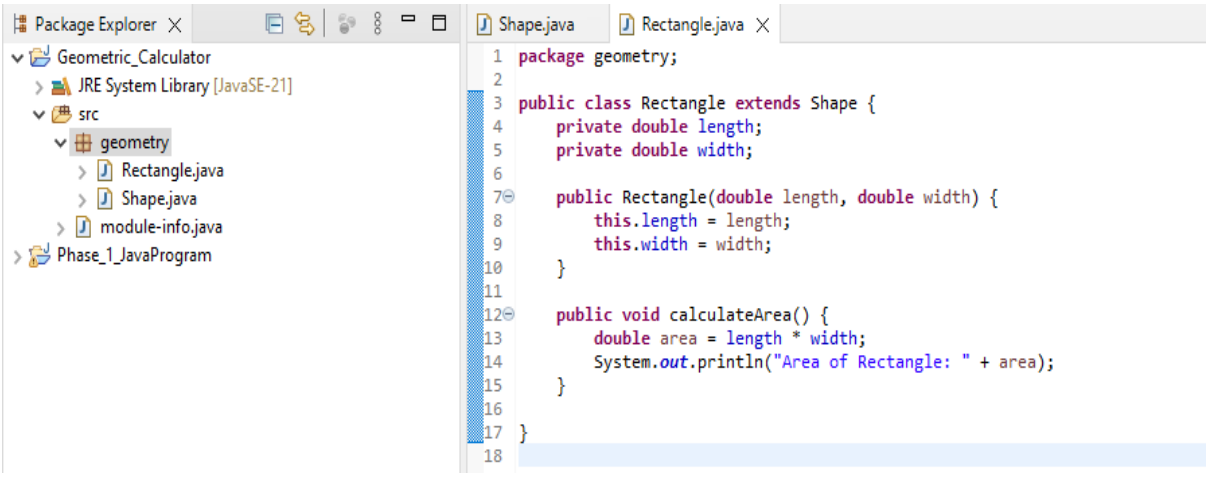
1. Create a Java project in Eclipse.
2. Create a package inside the Java project, for example, **geometry**.
3. Create the following classes:
   - Shape.java (Parent Class)
   - Rectangle.java (Child Class)
   - Circle.java (Child Class)
   - Triangle.java (Child Class)
   - GeometryMain.java (Main Class)

Shape.java: It is Parent class.

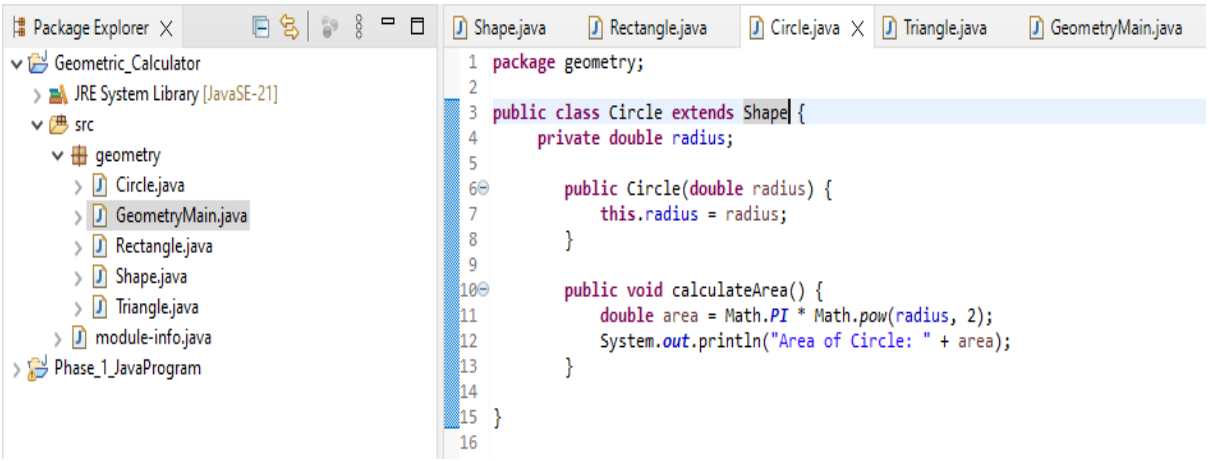
Shape.java

```java
package geometry;

public class Shape {
    public void displayArea() {
        System.out.println("This is the parent class.");
    }

}
```

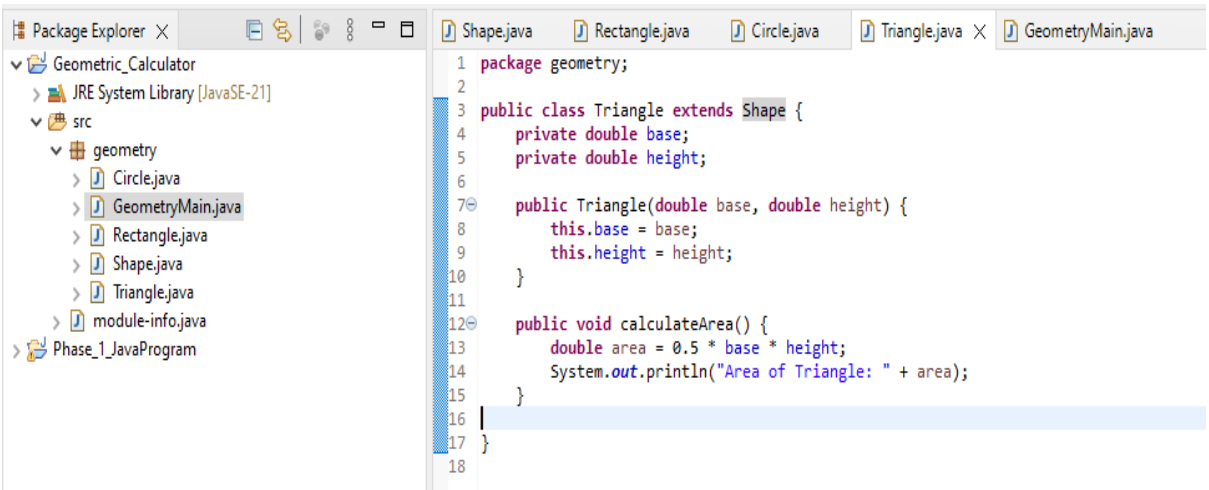
Rectangle.java: It is a child which is extended by ites parent class Shape



Circle.java: It is a child which is extended by ites parent class Shape



Triangle.java: It is a child which is extended by ites parent class Shape



GeometryMain.java:

Make sure to run `GeometryMain.java` as the main class. This program demonstrates the basic structure you can use for your project and meets the specified requirements. You can customize and expand it according to your specific needs.

Shape.java | Rectangle.java | Circle.java | Triangle.java | GeometryMain.java

```java
package geometry;
import java.util.ArrayList;

public class GeometryMain {
    public static void main(String[] args) {
        ArrayList<Shape> shapes = new ArrayList<>();

        shapes.add(new Rectangle(5, 10));
        shapes.add(new Circle(7));
        shapes.add(new Triangle(4, 6));

        try {
            for (Shape shape : shapes) {
                shape.displayArea();
                if (shape instanceof Rectangle) {
                    ((Rectangle) shape).calculateArea();
                } else if (shape instanceof Circle) {
                    ((Circle) shape).calculateArea();
                } else if (shape instanceof Triangle) {
                    ((Triangle) shape).calculateArea();
                }
                System.out.println("-------------");
            }
        } catch (Exception e) {
            System.out.println("An error occurred: " + e.getMessage());
        } finally {
            System.out.println("Finally block executed.");
        }
    }

}

```

OUTPUT:

Problems | Javadoc | Declaration | Console | Coverage

<terminated> GeometryMain [Java Application] C:\Users\Samyak\.p2\pool\plugins\org.eclipse.

```
This is the parent class.
Area of Rectangle: 50.0
-------------
This is the parent class.
Area of Circle: 153.93804002589985
-------------
This is the parent class.
Area of Triangle: 12.0
-------------
Finally block executed.
```

Copy the path from Eclipse and paste it in command promt

1. **cd C:\Users\Samyak\eclipse-workspace\Geometric_Calculator**
2. **git init**

Command Prompt

```
Microsoft Windows [Version 10.0.19045.3803]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Samyak>cd C:\Users\Samyak\eclipse-workspace\Geometric_Calculator

C:\Users\Samyak\eclipse-workspace\Geometric_Calculator>git init
Initialized empty Git repository in C:/Users/Samyak/eclipse-workspace/Geometric_Calculator/.git/

C:\Users\Samyak\eclipse-workspace\Geometric_Calculator>
```

3. **git status**

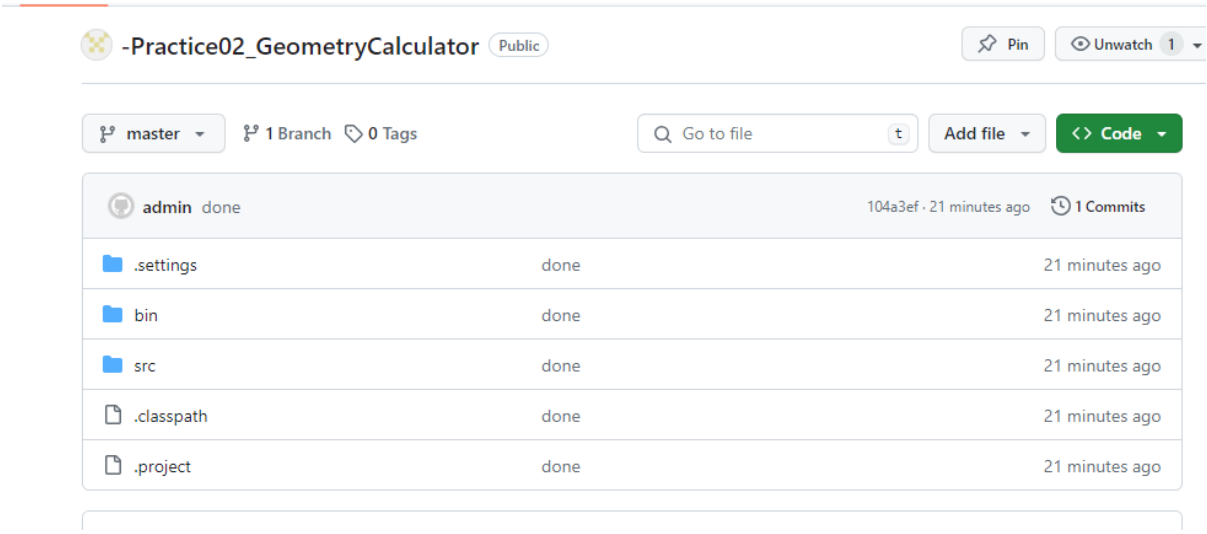
```
C:\Users\Samyak\eclipse-workspace\Geometric_Calculator>git init
Initialized empty Git repository in C:/Users/Samyak/eclipse-workspace/Geometric_Calculator/.git/

C:\Users\Samyak\eclipse-workspace\Geometric_Calculator>git status
On branch master

No commits yet

Untracked files:
  (use "git add <file>..." to include in what will be committed)
        .classpath
        .project
        .settings/
        bin/
        src/

nothing added to commit but untracked files present (use "git add" to track)

C:\Users\Samyak\eclipse-workspace\Geometric_Calculator>
```

4. git add .
5. git commit –m “done”

```
C:\Users\Samyak\eclipse-workspace\Geometric_Calculator>git add .

C:\Users\Samyak\eclipse-workspace\Geometric_Calculator>git commit -m "done"
[master (root-commit) 104a3ef] done
 16 files changed, 139 insertions(+)
 create mode 100644 .classpath
 create mode 100644 .project
 create mode 100644 .settings/org.eclipse.core.resources.prefs
 create mode 100644 .settings/org.eclipse.jdt.core.prefs
 create mode 100644 bin/geometry/Circle.class
 create mode 100644 bin/geometry/GeometryMain.class
 create mode 100644 bin/geometry/Rectangle.class
 create mode 100644 bin/geometry/Shape.class
 create mode 100644 bin/geometry/Triangle.class
 create mode 100644 bin/module-info.class
 create mode 100644 src/geometry/Circle.java
 create mode 100644 src/geometry/GeometryMain.java
 create mode 100644 src/geometry/Rectangle.java
 create mode 100644 src/geometry/Shape.java
 create mode 100644 src/geometry/Triangle.java
 create mode 100644 src/module-info.java
```

6. git remoteaddorigingit@github.com:Samyak0311/Practice02_GeometryCalculator.git
7. git push origin master

```
C:\Users\Samyak\eclipse-workspace\Geometric_Calculator>git remote add origin git@github.com:Samyak0311/-Practice02_Geome
tryCalculator.git

C:\Users\Samyak\eclipse-workspace\Geometric_Calculator>git push origin master
Enumerating objects: 23, done.
Counting objects: 100% (23/23), done.
Delta compression using up to 4 threads
Compressing objects: 100% (23/23), done.
Writing objects: 100% (23/23), 5.96 KiB | 290.00 KiB/s, done.
Total 23 (delta 1), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (1/1), done.
To github.com:Samyak0311/-Practice02_GeometryCalculator.git
 * [new branch]      master -> master
```



LINK FOR REFRENCE :

https://github.com/Samyak0311/-Practice02_GeometryCalculator.git