# **Assignment**

by   
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**Components used:**

1. SpringBoot
2. Lombok
3. Swagger
4. Eclipse
5. Junit

**Description:**

* Unzip the assignment zip file and import the contents as an existing maven project in the IDE.
* The application can be started on port ***8081*** by running the main method in *AssignmentApplication* class.
* Once started swagger can be accessed via following URL:  
  <http://localhost:8081/swagger-ui.html#/>
* Area of the circle can be calculated by passing the radius as a ***request parameter*** and making a ***GET*** call to the following url : [**/api/v1/circle/area**](http://localhost:8081/swagger-ui.html#/operations/circle-controller/calculateCircleAreaUsingGET)**?radius=5  
  CURL CMD:**   
  *curl -X GET "http://localhost:8081/api/v1/circle/area?radius=5" -H "accept: \*/\*"*
* ***CircleServiceImpl*** class is the service which computes the area of the circle.

**Lombok:** It has been used to reduce boilerplate code.

**@Slf4j**: generates a logger instance for the class.

**@Data**: Generates getters, setters, constructor, equals, hashcode and toString method.

@Getter: Generates getters for the properties.

**@ToString(callSuper = true)**: calls toString() of the parent class.

**Validations/Assumptions:**

* Radius can be 0.
* Radius cannot be negative

**Exceptions:**

* ***CircleException*** : Generic Application level runtime exception
* ***NegativeRadiusException***: specific exception for negative value of radius.

**Test:**

***CircleServiceImplTest*** is the unit test for circle service.

It has 3 tests:

* Positive radius scenario
* Negative radius scenario
* Zero Radius scenario

**Miscellaneous:  
*ApplicationConstants*** is a utility class where all the application level String constants are organized and this class should/cannot be instantiated.

* It has a private constructor which throws ***IllegalStateException*** if invoked.