Assignment-2

1. Create a class called "Car" that has the following properties: make, model, year, color, and price. Include a constructor and getter and setter methods for each property.

   Code:

Car.java

```java
package com.tecnotree.Assignment2;
public class Car {
    //Car Class
    private String make;
    private String model;
    private int year;
    private String color;
    private int price;
    //Constructor
    public Car(String make, String model, int year, String color, int price) {
        this.make = make;
        this.model = model;
        this.year = year;
        this.color = color;
        this.price = price;
    }
    //Getters and Setters
    public String getMake() {
        return make;
    }
    public void setMake(String make) {
        this.make = make;
    }
    public String getModel() {
        return model;
    }
    public void setModel(String model) {
        this.model = model;
    }
    public int getYear() {
        return year;
    }
    public void setYear(int year) {
        this.year = year;
    }
    public String getColor() {
        return color;
    }
    public void setColor(String color) {
        this.color = color;
    }
    public int getPrice() {
        return price;
    }
    public void setPrice(int price) {
        this.price = price;
    }
}

```

Main.java

```java
package com.tecnotree.Assignment2;

public class Main {
    public static void main(String[] args) {
        //Creating Object
        Car car1 = new Car("Toyota","Supra",2023,"White",100000000);
        //Getting Values
        System.out.println("Car Make:"+car1.getMake());
        System.out.println("Car Model:"+car1.getModel());
        System.out.println("Year:"+car1.getYear());
        System.out.println("Car Color:"+car1.getColor());
        System.out.println("Car Price:"+car1.getPrice()+"\n");
        //Setting Values
        car1.setMake("BMW");
        car1.setModel("X6");
        car1.setYear(2022);
        car1.setColor("Red");
        car1.setPrice(2000000);
        //Getting Values to see Change in Values
        System.out.println("Car Make:"+car1.getMake());
        System.out.println("Car Model:"+car1.getModel());
        System.out.println("Year:"+car1.getYear());
        System.out.println("Car Color:"+car1.getColor());
        System.out.println("Car Price:"+car1.getPrice());
    }
}
```

Codeshare Link: - https://codeshare.io/zyAogj

Output:

```
Car Make:Toyota
Car Model:Supra
Year:2023
Car Color:White
Car Price:100000000

Car Make:BMW
Car Model:X6
Year:2022
Car Color:Red
Car Price:2000000
```

2. Create a class called "Student" that has the following properties: name, age, gender, grade, and GPA. Include a constructor and getter and setter methods for each property.

   Code:

   Student.java

```java
package com.tecnotree.Assignment2;

public class Student {
    //Student Class
    private String name;
    private int age;
    private String gender;
    private String grade;
    private float GPA;

    //Constructor
    public Student(String name, int age, String gender, String grade, float gPA) {
        this.name = name;
        this.age = age;
        this.gender = gender;
        this.grade = grade;
        this.GPA = gPA;
    }

    //Getters and Setters
    public String getName() {
        return name;
    }
    public void setName(String name) {
        this.name = name;
    }
    public int getAge() {
        return age;
    }
    public void setAge(int age) {
        this.age = age;
    }
    public String getGender() {
        return gender;
    }
    public void setGender(String gender) {
        this.gender = gender;
    }
    public String getGrade() {
        return grade;
    }
    public void setGrade(String grade) {
        this.grade = grade;
    }
    public float getGPA() {
        return GPA;
    }
    public void setGPA(float gPA) {
        GPA = gPA;
    }
}
```

Main.java

```java
package com.tecnotree.Assignment2;

public class Main {
    public static void main(String[] args) {
        //Creating Object
        Student student = new Student("Mohammed Fawaz",21,"Male","A",8.6f);
        //Getting Values
        System.out.println("Student Name:"+student.getName());
        System.out.println("Age:"+student.getAge());
        System.out.println("Gender:"+student.getGender());
        System.out.println("Grade:"+student.getGrade());
        System.out.println("GPA:"+student.getGPA()+"\n");
        //Setting Values
        student.setName("Fawaz");
        student.setAge(22);
        student.setGender("Male");
        student.setGrade("B");
        student.setGPA(8.9f);
        //Getting Values to see Change in Values
        System.out.println("Student Name:"+student.getName());
        System.out.println("Age:"+student.getAge());
        System.out.println("Gender:"+student.getGender());
        System.out.println("Grade:"+student.getGrade());
        System.out.println("GPA:"+student.getGPA()+"\n");
    }
}

```

Codeshare Link: - https://codeshare.io/wnv8Z7

Output:

```
Student Name:Mohammed Fawaz
Age:21
Gender:Male
Grade:A
GPA:8.6

Student Name:Fawaz
Age:22
Gender:Male
Grade:B
GPA:8.9
```

3. Create a class called "Circle" that has the following properties: radius, diameter, and area. Include a constructor and methods to calculate the diameter and area of the circle.

Code:
Circle.java

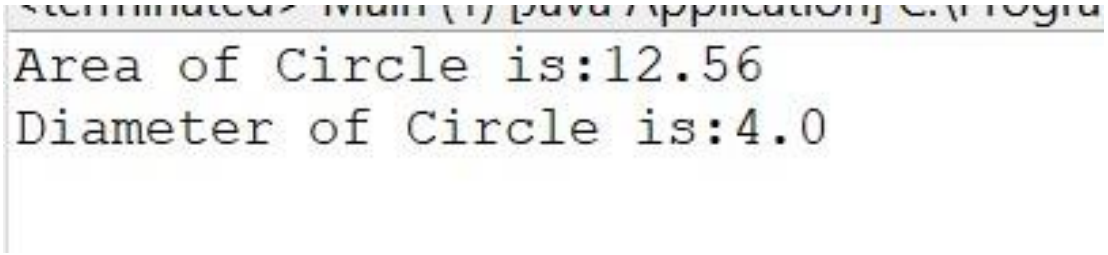
```java
package com.tecnotree.Assignment2;

public class Circle {
    //Class Circle and Properties
    private double radius;
    private double diameter;
    private double area;

    //Constructor
    public Circle(double radius) {
        this.radius = radius;
    }

    //Finds area and returns it
    public double area() {
        this.area = 3.14 * this.radius * this.radius;
        return this.area;
    }

    //Finds diameter and returns it
    public double diameter() {
        this.diameter = 2 * this.radius;
        return this.diameter;
    }
}

```

Main.java

```java
package com.tecnotree.Assignment2;

public class Main {
    public static void main(String[] args) {
        //Creating Object
        Circle cir = new Circle(2.0d);
        double area;
        double diameter;

        //Initializing Values
        area = cir.area();
        diameter = cir.diameter();

        //Printing the Output
        System.out.println("Area of Circle is:"+area);
        System.out.println("Diameter of Circle is:"+diameter);
    }
}


```

Codeshare Link:- https://codeshare.io/ZJEkoQ

Output:



4. Create a class called "Rectangle" that has the following properties: length, width, and area. Include a constructor and a method to calculate the area of the rectangle.

Code:

Rectangle.java

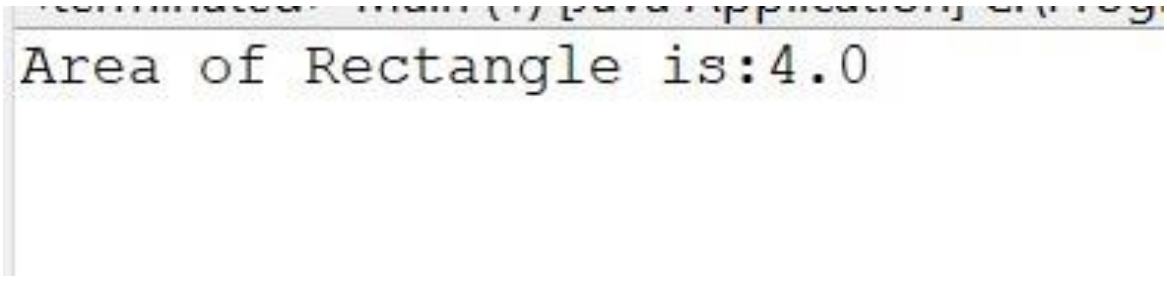
```java
package com.tecnotree.Assignment2;

public class Rectangle {
    private double length;
    private double width;
    private double area;


    public Rectangle(double length, double width) {
        this.length = length;
        this.width = width;
    }

    public double area() {
        this.area = this.length * this.width;
        return this.area;
    }

}

```

Main.java

```java
package com.tecnotree.Assignment2;

public class Main {
    public static void main(String[] args) {
        //Creating Object
        Rectangle rect = new Rectangle(2.0d,2.0d);
        double area;

        //Initializing Values
        area = rect.area();

        //Printing the Output
        System.out.println("Area of Rectangle is:"+area);
    }
}

```

Codeshare Link: - https://codeshare.io/X8EovE

Output:



5 Create a class called "BankAccount" that has the following properties: account number, account balance, account holder name, and account type. Include a constructor and methods to deposit and withdraw money from the account.

Code:

BankAccount.java

```java
package com.tecnotree.Assignment2;

public class BankAccount {
    private long accountNumber;
    private float accountBalance;
    private String accountHolderName;
    private String accountType;

    public BankAccount(long accountNumber, float accountBalance, String accountHolderName, String accountType) {
        this.accountNumber = accountNumber;
        this.accountBalance = accountBalance;
        this.accountHolderName = accountHolderName;
        this.accountType = accountType;
    }
    public float deposit(float depositAmount) {
        this.accountBalance = this.accountBalance + depositAmount;
        return this.accountBalance;
    }
    public float withdraw(float withdrawAmount) {
        this.accountBalance = this.accountBalance - withdrawAmount;
        return this.accountBalance;
    }
    public long getAccountNumber() {
        return accountNumber;
    }
    public void setAccountNumber(long accountNumber) {
        this.accountNumber = accountNumber;
    }
    public float getAccountBalance() {
        return accountBalance;
    }

    public void setAccountBalance(float accountBalance) {
        this.accountBalance = accountBalance;
    }

    public String getAccountHolderName() {
        return accountHolderName;
    }

    public void setAccountHolderName(String accountHolderName) {
        this.accountHolderName = accountHolderName;
    }
    public String getAccountType() {
        return accountType;
    }
    public void setAccountType(String accountType) {
        this.accountType = accountType;
    }
}

```

Main.java

```java
package com.tecnotree.Assignment2;

public class Main {
    public static void main(String[] args) {
        BankAccount account = new BankAccount(123453423421,25000.00f,"Mohammed Fawaz","Savings");
        //Getting Values
        System.out.println("Account Holder Name:"+account.getAccountHolderName());
        System.out.println("Account Type:"+account.getAccountType());
        System.out.println("Account Number:"+account.getAccountNumber());
        System.out.println("Balance"+account.getAccountBalance()+"\n");

        //depositing
        float newBalance = account.deposit(2500f);

        //After Deposit
        System.out.println("After Deposit");
        System.out.println("Account Holder Name:"+account.getAccountHolderName());
        System.out.println("Account Type:"+account.getAccountType());
        System.out.println("Account Number:"+account.getAccountNumber());
        System.out.println("Balance:"+account.getAccountBalance()+"\n");

        //Returned Value
        System.out.println("New Balance:"+newBalance);

        //Withdraw

        newBalance = account.withdraw(10000f);

        //After Withdraw
        System.out.println("After Withdraw");
        System.out.println("Account Holder Name:"+account.getAccountHolderName());
        System.out.println("Account Type:"+account.getAccountType());
        System.out.println("Account Number:"+account.getAccountNumber());
        System.out.println("Balance:"+account.getAccountBalance()+"\n");

        //Returned Value
        System.out.println("New Balance:"+newBalance);
    }
}
```

Codeshare Link:- https://codeshare.io/wnv8A9

Output:

```
Account Holder Name:Mohammed Fawaz
Account Type:Savings
Account Number:12345342342
Balance25000.0

After Deposit
Account Holder Name:Mohammed Fawaz
Account Type:Savings
Account Number:12345342342
Balance:27500.0

New Balance:27500.0
After Withdraw
Account Holder Name:Mohammed Fawaz
Account Type:Savings
Account Number:12345342342
Balance:17500.0

New Balance:17500.0
```

6 Create a class called "Person" that has the following properties: name, age, address, phone number, and email address. Include a constructor and getter and setter methods for each property.

Code:

Person.java

```java
package com.tecnotree.Assignment2;

public class Person {
    private String name;
    private int age;
    private String address;
    private long phoneNumber;
    private String emailAddress;

    public Person(String name, int age, String address, long phoneNumber, String emailAddress) {
        this.name = name;
        this.age = age;
        this.address = address;
        this.phoneNumber = phoneNumber;
        this.emailAddress = emailAddress;
    }

    public String getName() {
        return name;
    }

    public void setName(String name) {
        this.name = name;
    }

    public int getAge() {
        return age;
    }

    public void setAge(int age) {
        this.age = age;
    }
    public String getAddress() {
        return address;
    }
    public void setAddress(String address) {
        this.address = address;
    }
    public long getPhoneNumber() {
        return phoneNumber;
    }
    public void setPhoneNumber(long phoneNumber) {
        this.phoneNumber = phoneNumber;
    }
    public String getEmailAddress() {
        return emailAddress;
    }
    public void setEmailAddress(String emailAddress) {
        this.emailAddress = emailAddress;
    }
}
```

Main.java

```java
package com.tecnotree.Assignment2;


public class Main {
public static void main(String[] args) {
    //Creating Object
    Person person = new Person("Mohammed Fawaz",21,"Mysore",8123333230l,"mohammedfawaz507@g
    //Getting Values
    System.out.println("Person Name:"+person.getName());
    System.out.println("Age:"+person.getAge());
    System.out.println("Phone Number:"+person.getPhoneNumber());
    System.out.println("Address:"+person.getAddress());
    System.out.println("Email:"+person.getEmailAddress()+"\n");
    //Setting Values
    person.setName("Fawaz");
    person.setAge(22);
    person.setPhoneNumber(8147472823l);
    person.setAddress("Banglore");
    person.setEmailAddress("mohammedfawaz@gmail.com");
    //Getting Values to see Change in Values
    System.out.println("Person Name:"+person.getName());
    System.out.println("Age:"+person.getAge());
    System.out.println("Phone Number:"+person.getPhoneNumber());
    System.out.println("Address:"+person.getAddress());
    System.out.println("Email:"+person.getEmailAddress()+"\n");
}
}
```

Codeshare Link: - https://codeshare.io/9OLxxK

Output:

```
<terminated> Main (1) [Java Application] C:\Program
Person Name:Mohammed Fawaz
Age:21
Phone Number:8123333230
Address:Mysore
Email:mohammedfawaz507@gmail.com

Person Name:Fawaz
Age:22
Phone Number:8147472823
Address:Banglore
Email:mohammedfawaz@gmail.com
```

7. Create a class called "Animal" that has the following properties: name, species, age, and weight. Include a constructor and getter and setter methods for each property.

Code: -

Aniaml.java

```java
package com.tecnotree.Assignment2;

public class Animal {
    private String name;
    private String species;
    private int age;
    private float weight;


    public Animal(String name, String species, int age, float weight) {
        this.name = name;
        this.species = species;
        this.age = age;
        this.weight = weight;
    }


    public String getName() {
        return name;
    }
    public void setName(String name) {
        this.name = name;
    }
    public String getSpecies() {
        return species;
    }
    public void setSpecies(String species) {
        this.species = species;
    }
    public int getAge() {
        return age;
    }
    public void setAge(int age) {
        this.age = age;
    }
    public float getWeight() {
        return weight;
    }
    public void setWeight(float weight) {
        this.weight = weight;
    }

```

Main.java

```java
package com.tecnotree.Assignment2;


public class Main {
public static void main(String[] args) {
    //Creating Object
    Animal animal = new Animal("Dog","Canis Familiaris",6,20f);
    //Getting Values
    System.out.println("Animal Name:"+animal.getName());
    System.out.println("Age:"+animal.getAge());
    System.out.println("Species Name:"+animal.getSpecies());
    System.out.println("Weight:"+animal.getWeight());

    //Setting Values
    animal.setName("Cat");
    animal.setAge(7);
    animal.setSpecies("Persian");
    animal.setWeight(8.0f);

    //Getting Values to see Change in Values
    System.out.println("Animal Name:"+animal.getName());
    System.out.println("Age:"+animal.getAge());
    System.out.println("Species Name:"+animal.getSpecies());
    System.out.println("Weight:"+animal.getWeight());
}
}

```

Codeshare Link:- https://codeshare.io/3Ab8Om

Output: -

```
Animal Name:Dog
Age:6
Species Name:Canis Familiaris
Weight:20.0
Animal Name:Cat
Age:7
Species Name:Persian
Weight:8.0
```

8. Create a class called "Triangle" that has the following properties: base, height, and area. Include a constructor and a method to calculate the area of the triangle.

Code:

Trinagle.java

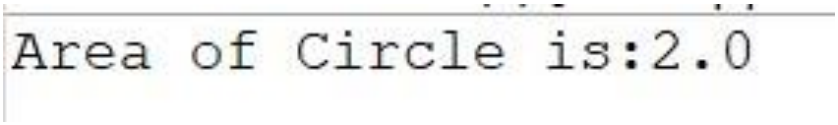
```java
package com.tecnotree.Assignment2;

public class Triangle {
    private double base;
    private double height;
    private double area;

    public Triangle(double base, double height) {
        this.base = base;
        this.height = height;
    }

    public double area() {
        this.area = 0.5 * this.base * this.height;
        return this.area;
    }

}

```

Main.java

```java
package com.tecnotree.Assignment2;

public class Main {
public static void main(String[] args) {
    //Creating Object
    Triangle tri = new Triangle(2.0d,2.0d);
    double area;

    //Initializing Values
    area = tri.area();

    //Printing the Output
    System.out.println("Area of Circle is:"+area);
}
}
```

Codeshare Link: - https://codeshare.io/Ad1WJr

Output:



9. Create a class called "Employee" that has the following properties: name, employee ID, department, job title, and salary. Include a constructor and getter and setter methods for each property.

Code: -

Employee.java

```
package com.tecnotree.Assignment2;

public class Employee {
    //Fields
    private String employeeName;
    private int employeeID;
    private String department;
    private String jobTitle;
    private int salary;

    //Constructor
    public Employee(String employeeName, int employeeID, String department, String jobTitle, int salary) {
        this.employeeName = employeeName;
        this.employeeID = employeeID;
        this.department = department;
        this.jobTitle = jobTitle;
        this.salary = salary;
    }
    //Setters and Getters
    public String getEmployeeName() {
        return employeeName;
    }
    public void setEmployeeName(String employeeName) {
        this.employeeName = employeeName;
    }
    public int getEmployeeID() {
        return employeeID;
    }
    public void setEmployeeID(int employeeID) {
        this.employeeID = employeeID;
    }
    public String getDepartment() {
        return department;
    }
    public void setDepartment(String department) {
        this.department = department;
    }
    public String getJobTitle() {
        return jobTitle;
    }
    public void setJobTitle(String jobTitle) {
        this.jobTitle = jobTitle;
    }
    public int getSalary() {
        return salary;
    }
    public void setSalary(int salary) {
        this.salary = salary;
    }
}
```

Main.java

```java
package com.tecnotree.Assignment2;

public class Main {
public static void main(String[] args) {
    //Creating Object
    Employee emp = new Employee("Mohammed Fawaz",20685,"Value Engineer","Digtal Solution Engineer",500000);
    //Getting Values
    System.out.println("Employee Name:"+emp.getEmployeeName());
    System.out.println("Employee ID:"+emp.getEmployeeID());
    System.out.println("Employee Department:"+emp.getDepartment());
    System.out.println("Job Title:"+emp.getJobTitle());
    System.out.println("Salary:"+emp.getSalary());
    //Setting Values
    emp.setEmployeeName("Fawaz");
    emp.setEmployeeID(34533);

    //Getting Values to see Change in Values
    System.out.println("Employee Name:"+emp.getEmployeeName());
    System.out.println("Employee ID:"+emp.getEmployeeID());
    System.out.println("Employee Department:"+emp.getDepartment());
    System.out.println("Job Title:"+emp.getJobTitle());
    System.out.println("Salary:"+emp.getSalary());
}
}
```

Codeshare Link: - https://codeshare.io/9OLx7K

Output: -

```
Employee Name:Mohammed Fawaz
Employee ID:20685
Employee Department:Value Engineer
Job Title:Digtal Solution Engineer
Salary:500000
Employee Name:Fawaz
Employee ID:34533
Employee Department:Value Engineer
Job Title:Digtal Solution Engineer
Salary:500000
```

10. Create a class called "Address" that has the following properties: street, city, state, zip code, and country. Include a constructor and getter and setter methods for each property

Code: -

Address.java

```java
package com.tecnotree.Assignment2;

public class Address {
    //Fields
    private String street;
    private String city;
    private String state;
    private int zipCode;
    private String country;
    //Constructor
    public Address(String street, String city, String state, int zipCode, String country) {
        this.street = street;
        this.city = city;
        this.state = state;
        this.zipCode = zipCode;
        this.country = country;
    }
    //Getters and Setters
    public String getStreet() {
        return street;
    }
    public void setStreet(String street) {
        this.street = street;
    }
    public String getCity() {
        return city;
    }
    public void setCity(String city) {
        this.city = city;
    }
    public String getState() {
        return state;
    }
    public void setState(String state) {
        this.state = state;
    }
    public int getZipCode() {
        return zipCode;
    }
    public void setZipCode(int zipCode) {
        this.zipCode = zipCode;
    }
    public String getCountry() {
        return country;
    }
    public void setCountry(String country) {
        this.country = country;
    }
}
```

Main.java

```java
package com.tecnotree.Assignment2;


public class Main {
public static void main(String[] args) {
    //Creating Object
    Address addr = new Address("4rth Corss Metgalli","Mysore","Karnataka",570001,"India");
    //Getting Values
    System.out.println("Street:"+addr.getStreet());
    System.out.println("City:"+addr.getCity());
    System.out.println("State:"+addr.getState());
    System.out.println("Zip Code:"+addr.getZipCode());
    System.out.println("Country:"+addr.getCountry()+"\n");
    //Setting Values
    addr.setStreet("Janatha Colony");
    addr.setCity("Udupi");

    //Getting Values to see Change in Values
    System.out.println("Street:"+addr.getStreet());
    System.out.println("City:"+addr.getCity());
    System.out.println("State:"+addr.getState());
    System.out.println("Zip Code:"+addr.getZipCode());
    System.out.println("Country:"+addr.getCountry());
}
}

```

Codeshare Link: - https://codeshare.io/3Ab8km

Output: -

```
Street:4rth Corss Metgalli
City:Mysore
State:Karnataka
Zip Code:570001
Country:India

Street:Janatha Colony
City:Udupi
State:Karnataka
Zip Code:570001
Country:India
```