Java Assignment-2

Object-Oriented Programming (OOP) Concepts

Sanjana K S

Engineering Intern

Tecnotree Mysore

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.

   https://codeshare.io/4eoMe7

Car.java

```
1  package assignment2;
2  import java.util.Scanner;
3
4  public class Car {
5
6              private String make;
7              private String model;
8              private int year;
9              private String color;
10             private double price;
11
12             public Car(String make, String model, int year, String color, double price) {
13                 this.make = make;
14                 this.model = model;
15                 this.year = year;
16                 this.color = color;
17                 this.price = price;
18             }
19
20             public String getMake() {
21                 return make;
```

Console × Problems Debug Shell

```
<terminated> Car [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe  (01-Mar-2023, 12:40:08 am – 12:40:52 am) [pid: 3188]
Enter car make: Audi
Enter car model: A1500
Enter car year: 2022
Enter car color: White
Enter car price: 7000000
Make: Audi
Model: A1500
Year: 2022
Color: White
Price: 7000000.0
```

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.
   https://codeshare.io/gL9yL0

Car.java | Student.java ×

```
1  package assignment2;
2  import java.util.Scanner;
3
4  public class Student {
5
6
7
8          private String name;
9          private int age;
10         private String gender;
11         private int grade;
12         private double GPA;
13
14         // Constructor
15         public Student(String name, int age, String gender, int grade, double GPA) {
16             this.name = name;
17             this.age = age;
18             this.gender = gender;
19             this.grade = grade;
20             this.GPA = GPA;
```

Console × | Problems | Debug Shell

```
<terminated> Student [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe  (01-Mar-2023, 12:41:53 am – 12:42:05 am) [pid: 6528]
Enter name: Sanjana
Enter age: 21
Enter gender: F
Enter grade: 10
Enter GPA: 10
Name: Sanjana
Age: 21
Gender: F
Grade: 10
GPA: 10.0
```

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.
   https://codeshare.io/JbMNbn

Circle.java ×

```
1  package assignment2;
2  import java.util.Scanner;
3
4  public class Circle {
5
6              double radius;
7              double diameter;
8              double area;
9
10
11             public Circle(double radius) {
12                 this.radius = radius;
13             }
14
15
16             public void calculateDiameter() {
17                 diameter = radius * 2;
18                 System.out.println("Diameter of the circle is: " + diameter);
19             }
20
21
22             public void calculateArea() {
23                 area = Math.PI * radius * radius;
24                 System.out.println("Area of the circle is: " + area);
25             }
```

Console × | Problems | Debug Shell

```
<terminated> Circle [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe  (01-Mar-2023, 12:42:46 am – 12:42:50 am) [pid: 20680]
Enter the radius of the circle: 5
Diameter of the circle is: 10.0
Area of the circle is: 78.53981633974483
```

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.

https://codeshare.io/8plMpD

Circle.java Rectangle.java

```
package assignment2;
import java.util.Scanner;

public class Rectangle {


        private double length;
        private double width;
        private double area;

        public Rectangle() {
          // Default constructor
        }

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

        public void calculateArea() {
          this.area = this.length * this.width;
        }

        public void setLength(double length) {
          this.length = length;
```

Console Problems Debug Shell

```
<terminated> Rectangle [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe  (01-Mar-2023, 12:43:20 am – 12:43:26 am) [pid: 4364]
Enter length: 20
Enter width: 20
Area of the rectangle is: 400.0
```

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.

https://codeshare.io/K8E0WE

BankAccount.java

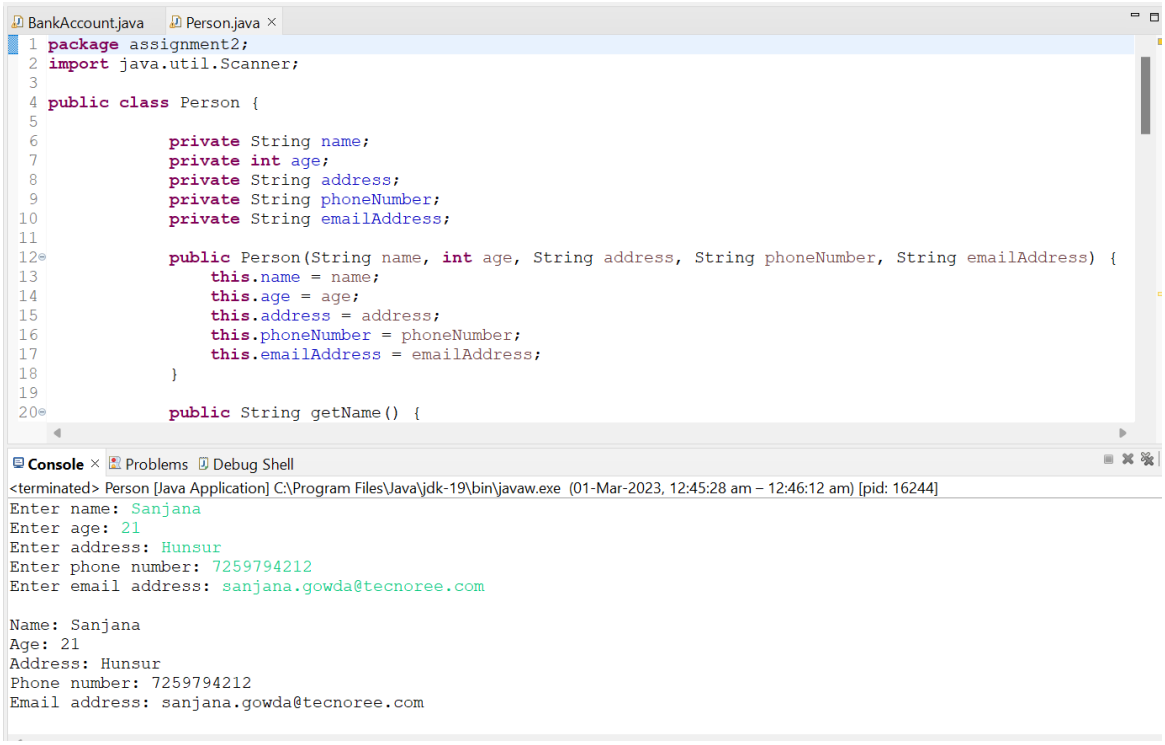
```
package assignment2;
import java.util.Scanner;

public class BankAccount {

        private int accountNumber;
        private double accountBalance;
        private String accountHolderName;
        private String accountType;

        public BankAccount(int accountNumber, double accountBalance, String accountHolderName, String ac
            this.accountNumber = accountNumber;
            this.accountBalance = accountBalance;
            this.accountHolderName = accountHolderName;
            this.accountType = accountType;
        }
```

Console Problems Debug Shell

```
<terminated> BankAccount [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe  (01-Mar-2023, 12:44:15 am – 12:44:52 am) [pid: 13320]
Enter Account Number:
5300
Enter Account Balance:
1000
Enter Account Holder Name:
Sanjana
Enter Account Type:
Saving
Enter amount to deposit:
500
500.0 deposited successfully. Your new account balance is 1500.0
Enter amount to withdraw:
500
500.0 withdrawn successfully. Your new account balance is 1000.0
```

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.

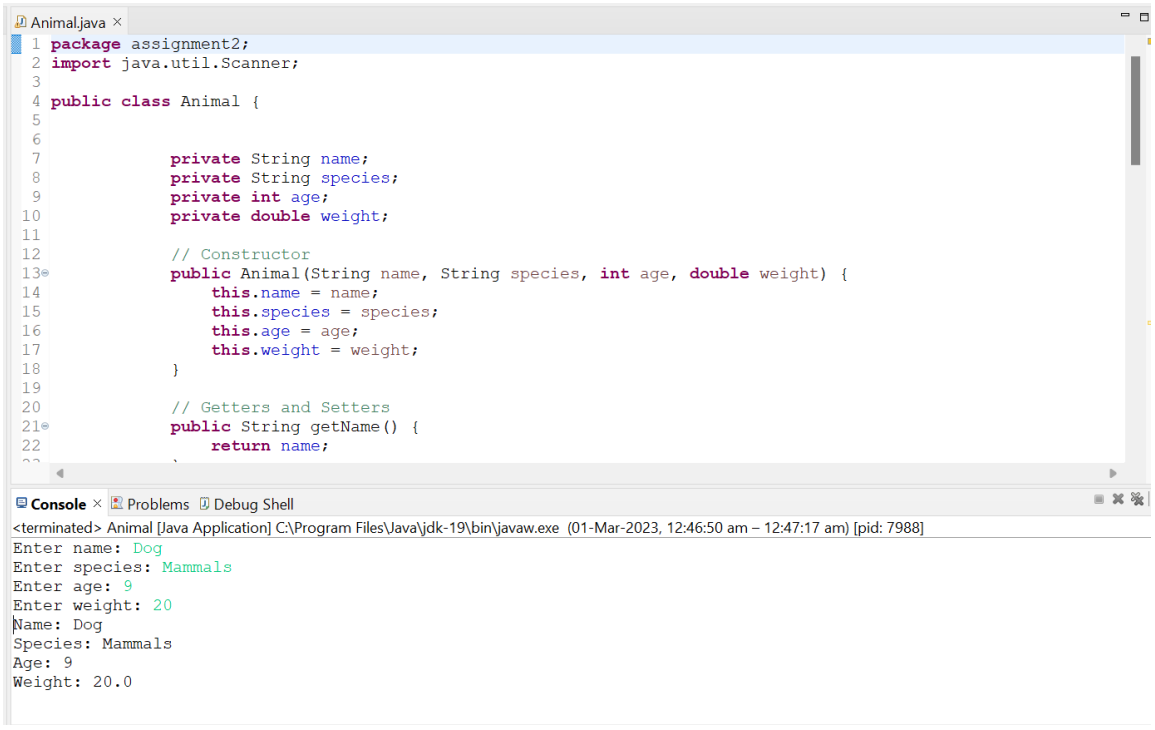
   https://codeshare.io/QnE08J



```
BankAccount.java  Person.java ×
1  package assignment2;
2  import java.util.Scanner;
3
4  public class Person {
5
6              private String name;
7              private int age;
8              private String address;
9              private String phoneNumber;
10             private String emailAddress;
11
12             public Person(String name, int age, String address, String phoneNumber, String emailAddress) {
13                 this.name = name;
14                 this.age = age;
15                 this.address = address;
16                 this.phoneNumber = phoneNumber;
17                 this.emailAddress = emailAddress;
18             }
19
20             public String getName() {

Console × Problems Debug Shell
<terminated> Person [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe (01-Mar-2023, 12:45:28 am – 12:46:12 am) [pid: 16244]
Enter name: Sanjana
Enter age: 21
Enter address: Hunsur
Enter phone number: 7259794212
Enter email address: sanjana.gowda@tecnoree.com

Name: Sanjana
Age: 21
Address: Hunsur
Phone number: 7259794212
Email address: sanjana.gowda@tecnoree.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.

   https://codeshare.io/pqkjAx



```
Animal.java ×
1  package assignment2;
2  import java.util.Scanner;
3
4  public class Animal {
5
6
7              private String name;
8              private String species;
9              private int age;
10             private double weight;
11
12             // Constructor
13             public Animal(String name, String species, int age, double weight) {
14                 this.name = name;
15                 this.species = species;
16                 this.age = age;
17                 this.weight = weight;
18             }
19
20             // Getters and Setters
21             public String getName() {
22                 return name;

Console × Problems Debug Shell
<terminated> Animal [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe (01-Mar-2023, 12:46:50 am – 12:47:17 am) [pid: 7988]
Enter name: Dog
Enter species: Mammals
Enter age: 9
Enter weight: 20
Name: Dog
Species: Mammals
Age: 9
Weight: 20.0
```

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.

https://codeshare.io/DZENAr

Animal.java Triangle.java

```java
package assignment2;
import java.util.Scanner;

public class Triangle {


            private double base;
            private double height;
            private double area;

            // Constructor
            public Triangle(double base, double height) {
                this.base = base;
                this.height = height;
                this.area = calculateArea();
            }

            // Method to calculate area
            public double calculateArea() {
                return 0.5 * base * height;
            }
```

Console Problems Debug Shell

```
<terminated> Triangle [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe  (01-Mar-2023, 12:48:05 am – 12:48:14 am) [pid: 15724]
Enter base length: 25
Enter height length: 30
Base: 25.0
Height: 30.0
Area: 375.0
```

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.

https://codeshare.io/r9lj9Z

Employee.java

```java
package assignment2;
import java.util.Scanner;

public class Employee {

            private String name;
            private int employeeID;
            private String department;
            private String jobTitle;
            private double salary;

            public Employee(String name, int employeeID, String department, String jobTitle, double salary)
                this.name = name;
                this.employeeID = employeeID;
                this.department = department;
                this.jobTitle = jobTitle;
                this.salary = salary;
            }

            public String getName() {
                return name;
```

Console Problems Debug Shell

```
<terminated> Employee [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe  (01-Mar-2023, 12:48:42 am – 12:49:27 am) [pid: 12964]
Enter employee name: Sanjana
Enter employee ID: 20691
Enter employee department: Eng Intern
Enter employee job title: Value Eng
Enter employee salary: 38650
Employee name: Sanjana
Employee ID: 20691
Employee department: Eng Intern
Employee job title: Value Eng
Employee salary: 38650.0
```

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.

https://codeshare.io/km8ymV

Employee.java | Address.java

```
1  package assignment2;
2  import java.util.Scanner;
3
4  public class Address {
5
6              private String street;
7              private String city;
8              private String state;
9              private String zipCode;
10             private String country;
11
12             public Address(String street, String city, String state, String zipCode, String country) {
13                 this.street = street;
14                 this.city = city;
15                 this.state = state;
16                 this.zipCode = zipCode;
17                 this.country = country;
18             }
19
20             public String getStreet() {
21                 return street;
```

Console | Problems | Debug Shell

```
<terminated> Address [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe  (01-Mar-2023, 12:49:59 am – 12:51:02 am) [pid: 5284]
Enter street address: Prena Motors
Enter city: Hunsur
Enter state: Karnataka
Enter ZIP code: 571105
Enter country: India
Street address: Prena Motors
City: Hunsur
State: Karnataka
ZIP code: 571105
Country: India
```

----------THANK YOU----------