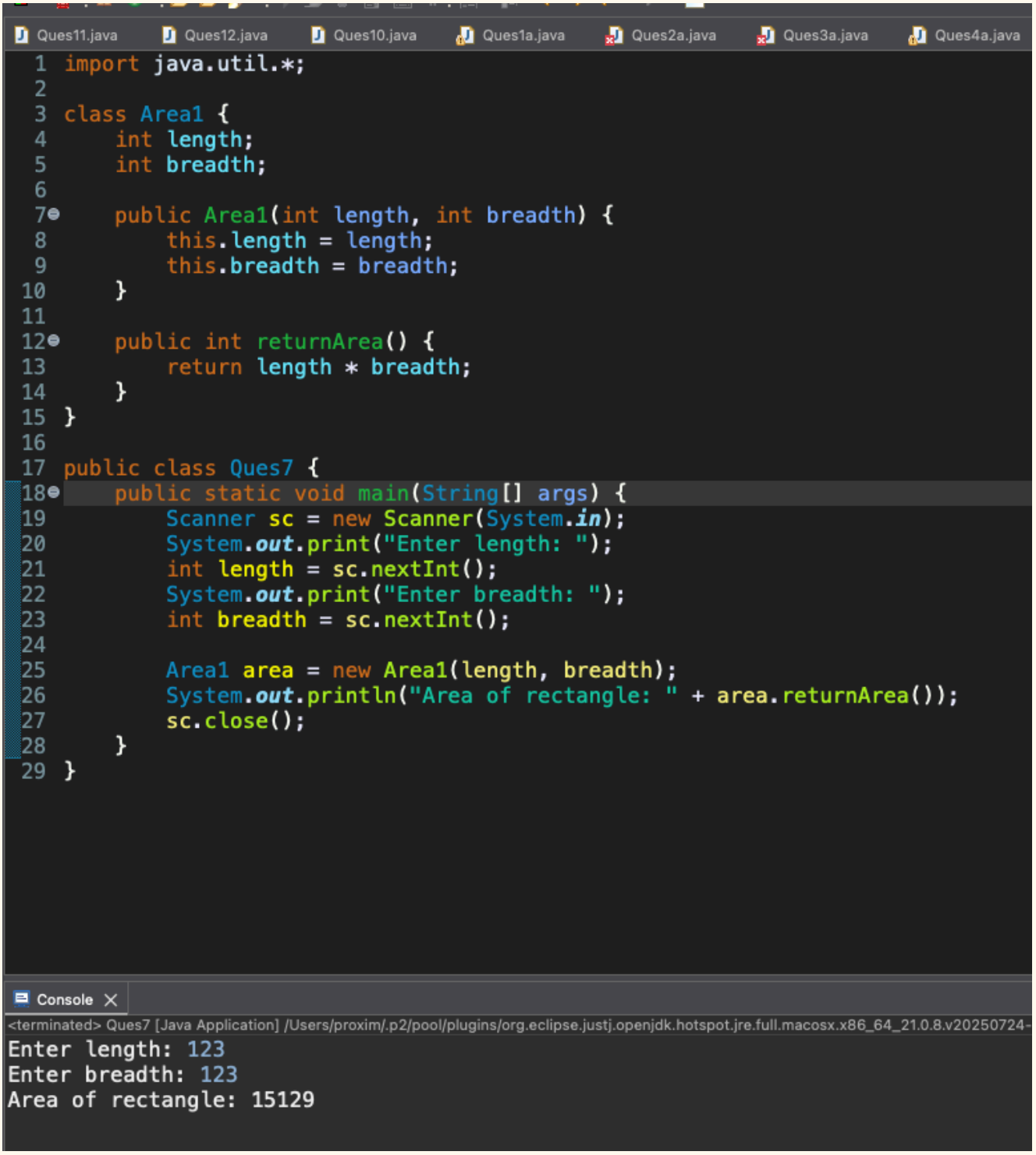
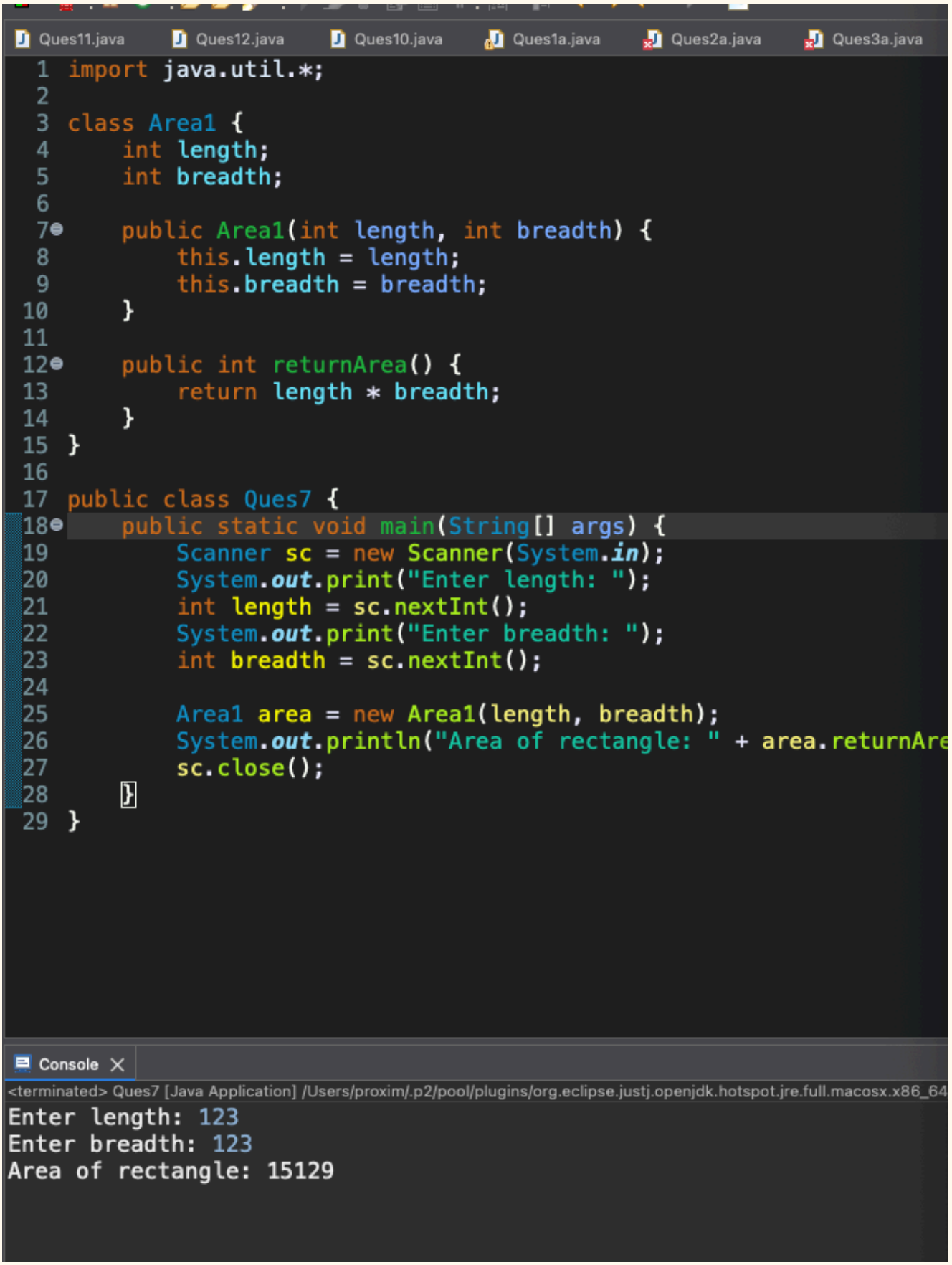
Shubham Raut

---

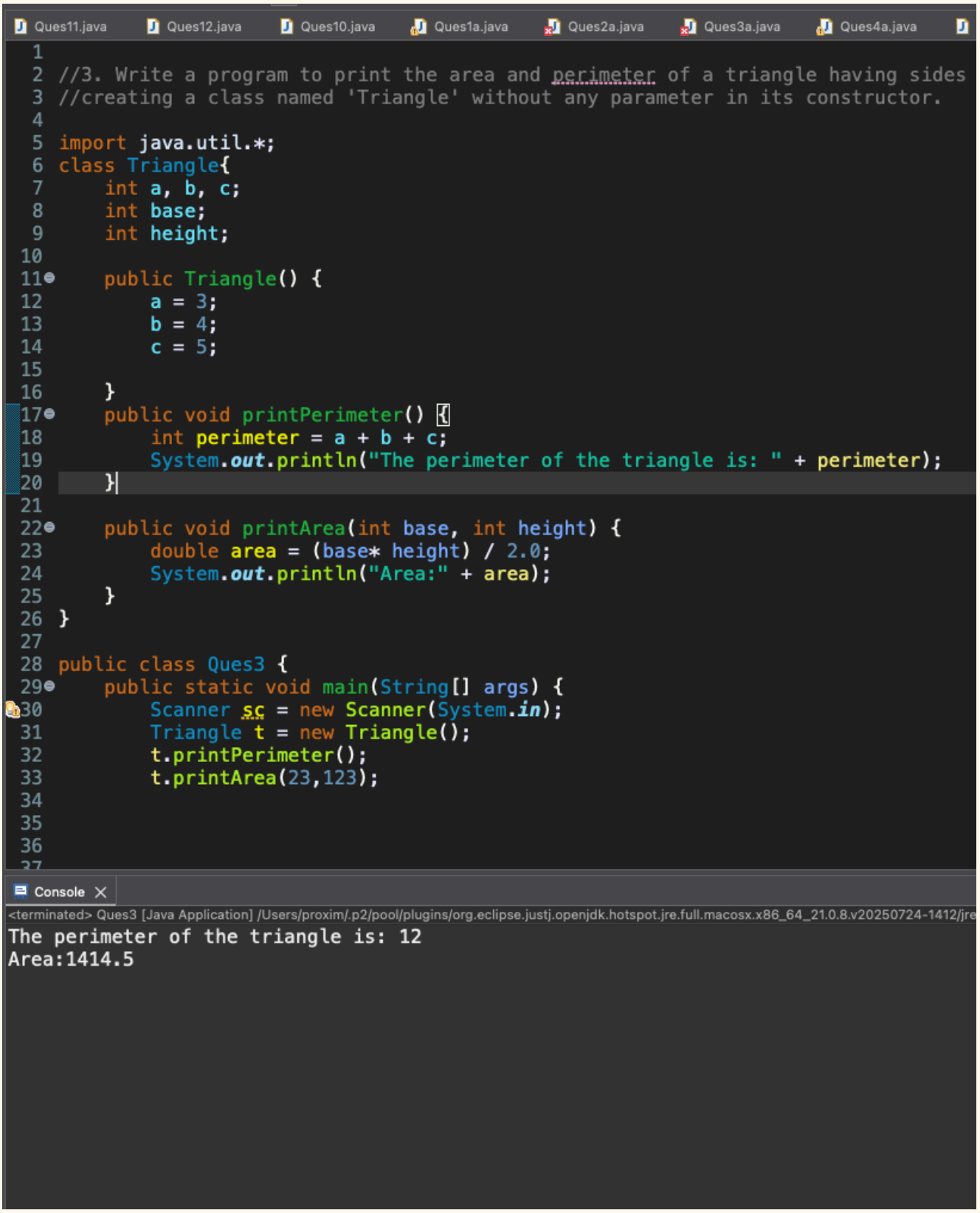
Ques 1.



Ques 2.


Ques11.java
Ques12.java
Ques10.java
Ques1a.java
Ques2a.java
Ques3a.java
1 import java.util.*;
2
3 class Area1 {
4 int length;
5 int breadth;
6
7 public Area1(int length, int breadth) {
8 this.length = length;
9 this.breadth = breadth;
10 }
11
12 public int returnArea() {
13 return length * breadth;
14 }
15 }
16
17 public class Ques7 {
18 public static void main(String[] args) {
19 Scanner sc = new Scanner(System.in);
20 System.out.print("Enter length: ");
21 int length = sc.nextInt();
22 System.out.print("Enter breadth: ");
23 int breadth = sc.nextInt();
24
25 Area1 area = new Area1(length, breadth);
26 System.out.println("Area of rectangle: " + area.returnAre
27 sc.close();
28 }
29 }
Console
<terminated> Ques7 [Java Application] /Users/proxim/.p2/pool/plugins/org.eclipse.justj.openjdk.hotspot.jre.full.macosx.x86_64
Enter length: 123
Enter breadth: 123
Area of rectangle: 15129

Ques 3.


Ques11.java
Ques12.java
Ques10.java
Ques1a.java
Ques2a.java
Ques3a.java
Ques4a.java
//3. Write a program to print the area and perimeter of a triangle having sides
//creating a class named 'Triangle' without any parameter in its constructor.
import java.util.*;
class Triangle{
int a, b, c;
int base;
int height;
public Triangle() {
a = 3;
b = 4;
c = 5;
}
public void printPerimeter() {
int perimeter = a + b + c;
System.out.println("The perimeter of the triangle is: " + perimeter);
}
public void printArea(int base, int height) {
double area = (base* height) / 2.0;
System.out.println("Area:" + area);
}
}
public class Ques3 {
public static void main(String[] args) {
Scanner sc = new Scanner(System.in);
Triangle t = new Triangle();
t.printPerimeter();
t.printArea(23,123);
Console
<terminated> Ques3 [Java Application] /Users/proxim/.p2/pool/plugins/org.eclipse.justj.openjdk.hotspot.jre.full.macosx.x86_64_21.0.8.v20250724-1412/jre
The perimeter of the triangle is: 12
Area:1414.5

Ques 4.

Ques11.java Ques12.java Ques10.java Ques1a.java Ques2a.java Ques3a.java Ques4a.java

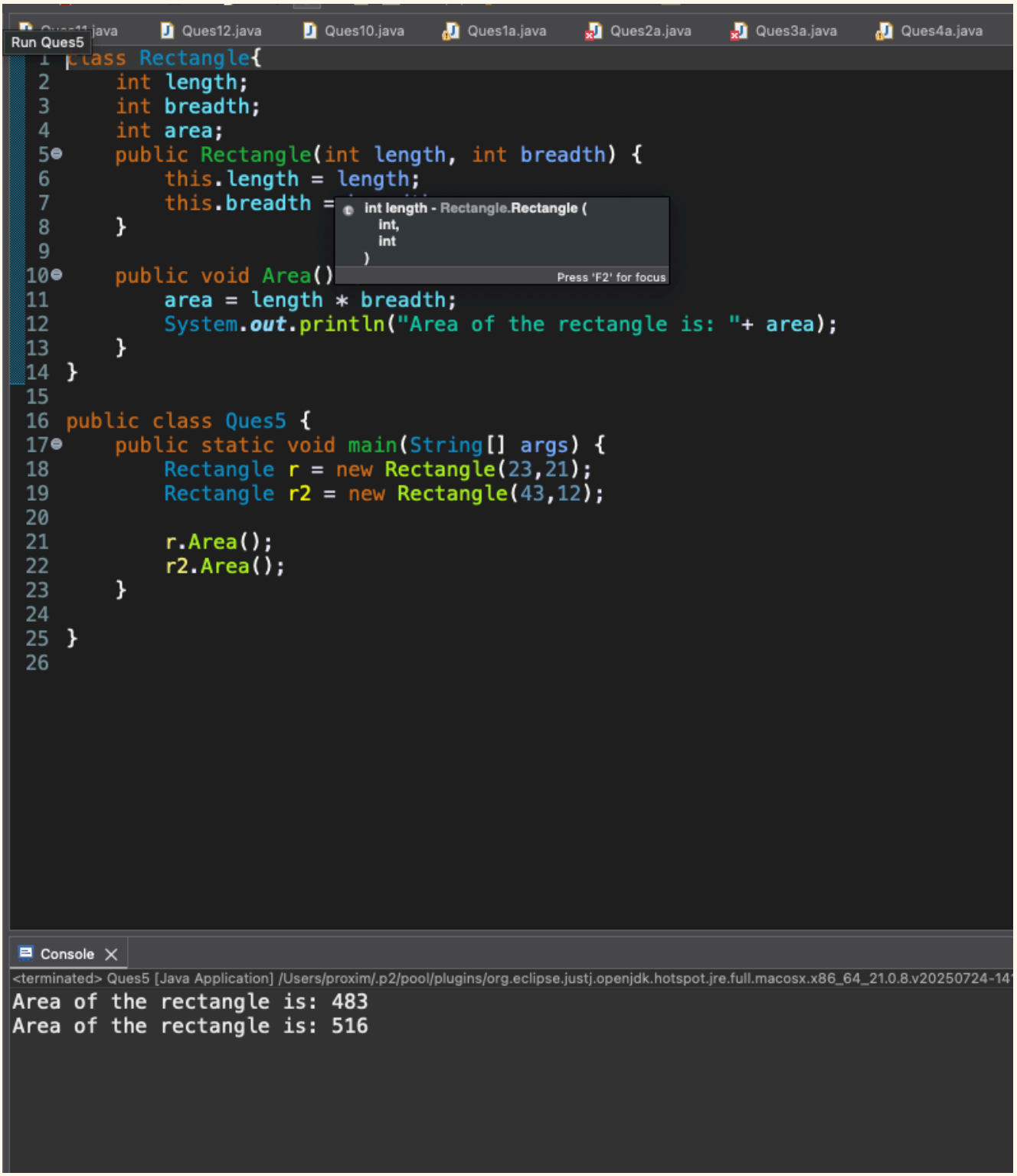
```java
class Triangle1{
    int a,b,c;

    public Triangle1(int a, int b, int c) {
        this.a = a;
        this.b = b;
        this.c = c;
    }

    public void printPerimeter() {
        int perimeter = a + b + c;
        System.out.println("Perimeter of triangle: " + perimeter);
    }

    public void printArea() {
        double area = (4+3)/ 2.0;
        System.out.println("Area of the triangle is: " + area);
    }

}

public class Ques4{
    public static void main(String[] args) {
        Triangle1 t1 = new Triangle1(3,4,5);
        t1.printPerimeter();
        t1.printArea();

    }
}
```

Console

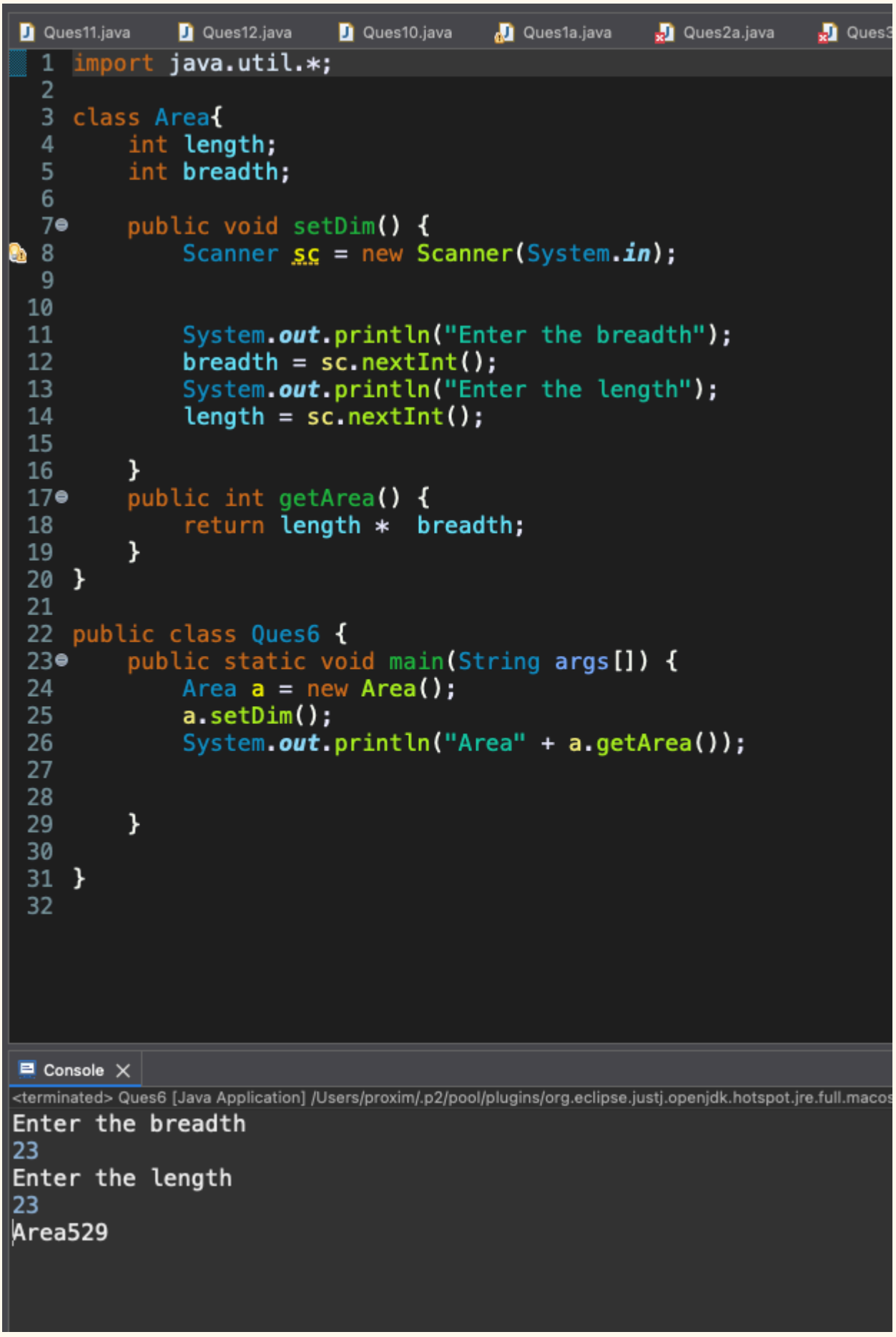
<terminated> Ques3 [Java Application] /Users/proxim/.p2/pool/plugins/org.eclipse.justj.openjdk.hotspot.jre.full.macosx.x86_64_21.0.8.v20250724-1412/jre/

```
The perimeter of the triangle is: 12
Area:1414.5
```

Ques 5.


Run Ques5
Ques12.java
Ques10.java
Ques1a.java
Ques2a.java
Ques3a.java
Ques4a.java
class Rectangle{
int length;
int breadth;
int area;
public Rectangle(int length, int breadth) {
this.length = length;
this.breadth =
}
public void Area()
area = length * breadth;
System.out.println("Area of the rectangle is: "+ area);
}
}
public class Ques5 {
public static void main(String[] args) {
Rectangle r = new Rectangle(23,21);
Rectangle r2 = new Rectangle(43,12);
r.Area();
r2.Area();
}
}
int length - Rectangle.Rectangle (
int,
int
)
Press 'F2' for focus
Console
<terminated> Ques5 [Java Application] /Users/proxim/.p2/pool/plugins/org.eclipse.justj.openjdk.hotspot.jre.full.macosx.x86_64_21.0.8.v20250724-14
Area of the rectangle is: 483
Area of the rectangle is: 516

Ques 6.


Ques11.java
Ques12.java
Ques10.java
Ques1a.java
Ques2a.java
Ques3
1 import java.util.*;
2
3 class Area{
4 int length;
5 int breadth;
6
7 public void setDim() {
8 Scanner sc = new Scanner(System.in);
9
10
11 System.out.println("Enter the breadth");
12 breadth = sc.nextInt();
13 System.out.println("Enter the length");
14 length = sc.nextInt();
15
16 }
17 public int getArea() {
18 return length * breadth;
19 }
20 }
21
22 public class Ques6 {
23 public static void main(String args[]) {
24 Area a = new Area();
25 a.setDim();
26 System.out.println("Area" + a.getArea());
27
28
29 }
30
31 }
32
Console
<terminated> Ques6 [Java Application] /Users/proxim/.p2/pool/plugins/org.eclipse.justj.openjdk.hotspot.jre.full.macos
Enter the breadth
23
Enter the length
23
Area529

Ques 7.

Ques11.java Ques12.java Ques10.java Ques1a.java Ques2a.java Ques3a.java Ques4a.ja

```java
import java.util.*;

class Area1 {
    int length;
    int breadth;

    public Area1(int length, int breadth) {
        this.length = length;
        this.breadth = breadth;
    }

    public int returnArea() {
        return length * breadth;
    }
}

public class Ques7 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter length: ");
        int length = sc.nextInt();
        System.out.print("Enter breadth: ");
        int breadth = sc.nextInt();

        Area1 area = new Area1(length, breadth);
        System.out.println("Area of rectangle: " + area.returnArea());
        sc.close();
    }
}
```

Console

<terminated> Ques7 [Java Application] /Users/proxim/.p2/pool/plugins/org.eclipse.justj.openjdk.hotspot.jre.full.macosx.x86_64_21.0.8.v20250

```
Enter length: 231
Enter breadth: 112
Area of rectangle: 25872
```

Ques 8.

Ques11.java Ques12.java Ques10.java Ques1a.java Ques2a.java Ques3a.java Ques4a.java

```java
//8. Print the average of three numbers entered by the user by creating a cla
//having a method to calculate and print the average.

import java.util.Scanner;

class Average{
    int a, b, c;
    int aver;

    public double printAvg() {
        Scanner sc = new Scanner(System.in);

        System.out.println("Enter three nums");
        a = sc.nextInt();
        b = sc.nextInt();
        c = sc.nextInt();
        double avg = (a+b+c) /3.0;
        return avg;




    }
}

public class Ques8 {
    public static void main(String[] args) {
        Average a = new Average();
        System.out.println("Average of three nums: " + a.printAvg());

    }
}

```

Console

<terminated> Ques8 [Java Application] /Users/proxim/.p2/pool/plugins/org.eclipse.justj.openjdk.hotspot.jre.full.macosx.x86_64_21.0.8.v20250724-14

```
Enter three nums
123
213
12
Average of three nums: 116.0
```

Ques 9.

Ques11.java Ques12.java Ques10.java Ques1a.java Ques2a.java Ques3a.java

```java
//
//9. Print the sum, difference and product of two complex numbers
//'Complex' with separate methods for each operation whose real a
//the user.


import java.util.*;

class Complex {
    double real, imag;

    Complex(double r, double i) {
        real = r;
        imag = i;
    }

    Complex add(Complex o) {
        return new Complex(real + o.real, imag + o.imag);
    }

    Complex sub(Complex o) {
        return new Complex(real - o.real, imag - o.imag);
    }

    Complex mul(Complex o) {
        double realPart = real * o.real - imag * o.imag;
        double imagPart = real * o.imag + imag * o.real;
        return new Complex(realPart, imagPart);
    }

    void print() {
        System.out.println(real + " + " + imag + "i");
    }
}
public class Ques9 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
```

Console

<terminated> Ques9 [Java Application] /Users/proxim/.p2/pool/plugins/org.eclipse.justj.openjdk.hotspot.jre.full.macosx.x86_64

```
123
123
24
123
147.0 + 246.0i
99.0 + 0.0i
-12177.0 + 18081.0i
```

Ques 10.

Ques11.java | Ques12.java | Ques10.java | Ques1a.java | Ques2a.java | Ques3a.java | Ques4a.java | Que

```java
//10. Write a program that would print the information (name, year of joining, sal
//three employees by creating a class named 'Employee'. The output should be as fo
//Name Year of joining Address
//Robert 1994 64C- WallsStreat
//Sam 2000 68D- WallsStreat
//John 1999 26B- WallsStreat


class Employee {
    String name;
    int yoj;
    String address;

    Employee(String name, int yoj, String address) {
        this.name = name;
        this.yoj = yoj;
        this.address = address;
    }
    void print() {
        System.out.println(name + " " + yoj + " " + address);
    }
}

public class Ques10 {
    public static void main(String args[]) {
        System.out.println("Name       Year of joining  Address");
        Employee em = new Employee("Robert", 1994, "64C- WallsStreat");
        Employee em1 = new Employee("Sam", 2000, "68D- WallsStreat");
        Employee em2 = new Employee("John", 1999, "26B- WallsStreat");

        em.print();
        em1.print();
        em2.print();
    }
}
```

Console

<terminated> Ques9 [Java Application] /Users/proxim/.p2/pool/plugins/org.eclipse.justj.openjdk.hotspot.jre.full.macosx.x86_64_21.0.8.v20250724-1412/jre/bin

```
123
123
24
123
147.0 + 246.0i
99.0 + 0.0i
-12177.0 + 18081.0i
```

Ques 11.

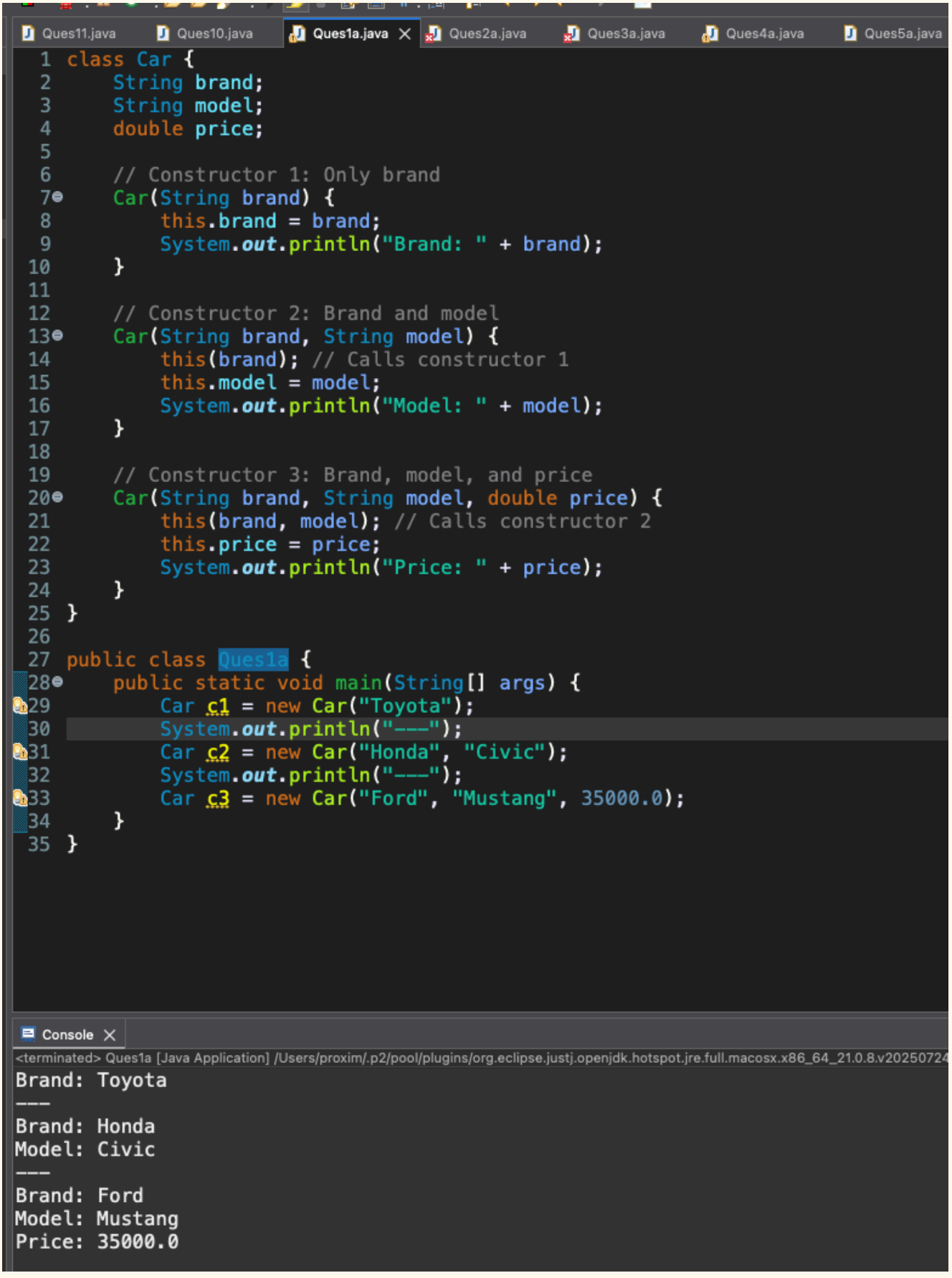
```java
import java.util.Scanner;

class Clock {
    private int hours;   // 0-23
    private int minutes; // 0-59
    private int seconds; // 0-59

    // Default constructor: 12:00:00
    public Clock() {
        this.hours = 12;
        this.minutes = 0;
        this.seconds = 0;
    }

    // Constructor with hours, minutes, seconds
    public Clock(int hours, int minutes, int seconds) {
        setHours(hours);
        setMinutes(minutes);
        setSeconds(seconds);
    }

    // Constructor with seconds since midnight
    public Clock(int secondsSinceMidnight) {
        setClock(secondsSinceMidnight);
    }
```

```java
    // setClock: set time from seconds since midnight
    public void setClock(int secondsSinceMidnight) {
        if (secondsSinceMidnight < 0) secondsSinceMidnight = 0;
        this.hours = (secondsSinceMidnight / 3600) % 24;
        this.minutes = (secondsSinceMidnight % 3600) / 60;
        this.seconds = secondsSinceMidnight % 60;
    }

    // Getters
    public int getHours() { return hours; }
    public int getMinutes() { return minutes; }
    public int getSeconds() { return seconds; }

    // Setters
    public void setHours(int hours) {
        this.hours = (hours >= 0 && hours < 24) ? hours : 0;
    }
    public void setMinutes(int minutes) {
        this.minutes = (minutes >= 0 && minutes < 60) ? minutes : 0;
    }
    public void setSeconds(int seconds) {
        this.seconds = (seconds >= 0 && seconds < 60) ? seconds : 0;
    }
```

```java
// Increment time by one second
public void tick() {
    seconds++;
    if (seconds == 60) {
        seconds = 0;
        minutes++;
        if (minutes == 60) {
            minutes = 0;
            hours = (hours + 1) % 24;
        }
    }
}

// Decrement time by one second
public void tickDown() {
    seconds--;
    if (seconds < 0) {
        seconds = 59;
        minutes--;
        if (minutes < 0) {
            minutes = 59;
            hours = (hours - 1 + 24) % 24;
        }
    }
}

// Add another clock's time to this clock
public void addClock(Clock other) {
    int totalSeconds = this.toSeconds() + other.toSeconds();
    setClock(totalSeconds % (24 * 3600)); // wrap around 24 hours
}
```

```java
    // Subtract another clock's time from this clock, return as new Clock
    public Clock subtractClock(Clock other) {
        int diff = this.toSeconds() - other.toSeconds();
        if (diff < 0) diff += 24 * 3600; // wrap around
        return new Clock(diff);
    }

    // Convert current time to seconds since midnight
    private int toSeconds() {
        return hours * 3600 + minutes * 60 + seconds;
    }

    // String representation
    public String toString() {
        return String.format("(%02d:%02d:%02d)", hours, minutes, seconds);
    }


/ Demo class
ublic class Ques11 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);

        // Instantiate firstClock using seconds since midnight
        System.out.print("Enter seconds since midnight for firstClock: ");
        int secSinceMidnight = sc.nextInt();
        Clock firstClock = new Clock(secSinceMidnight);

        // Tick firstClock 10 times
        System.out.println("Ticking firstClock 10 times:");
        for (int i = 0; i < 10; i++) {
            firstClock.tick();
```

```java
        // Instantiate secondClock using hours, minutes, seconds
        System.out.print("Enter hours for secondClock: ");
        int h = sc.nextInt();
        System.out.print("Enter minutes for secondClock: ");
        int m = sc.nextInt();
        System.out.print("Enter seconds for secondClock: ");
        int s = sc.nextInt();
        Clock secondClock = new Clock(h, m, s);

        // Tick secondClock 10 times
        System.out.println("Ticking secondClock 10 times:");
        for (int i = 0; i < 10; i++) {
            secondClock.tick();
            System.out.println(secondClock);
        }

        // Add secondClock to firstClock
        firstClock.addClock(secondClock);

        // Print both clocks
        System.out.println("firstClock: " + firstClock);
        System.out.println("secondClock: " + secondClock);

        // Subtract secondClock from firstClock
        Clock thirdClock = firstClock.subtractClock(secondClock);
        System.out.println("thirdClock (firstClock - secondClock): " + thirdClock);

        sc.close();
    }
```


Ques11.java
Ques10.java
Ques1a.java
Ques2a.java
Ques3a.java
Ques4a.java
Ques5a.java
1 class Car {
2 String brand;
3 String model;
4 double price;
5
6 // Constructor 1: Only brand
7 Car(String brand) {
8 this.brand = brand;
9 System.out.println("Brand: " + brand);
10 }
11
12 // Constructor 2: Brand and model
13 Car(String brand, String model) {
14 this(brand); // Calls constructor 1
15 this.model = model;
16 System.out.println("Model: " + model);
17 }
18
19 // Constructor 3: Brand, model, and price
20 Car(String brand, String model, double price) {
21 this(brand, model); // Calls constructor 2
22 this.price = price;
23 System.out.println("Price: " + price);
24 }
25 }
26
27 public class Ques1a {
28 public static void main(String[] args) {
29 Car c1 = new Car("Toyota");
30 System.out.println("---");
31 Car c2 = new Car("Honda", "Civic");
32 System.out.println("---");
33 Car c3 = new Car("Ford", "Mustang", 35000.0);
34 }
35 }
Console
<terminated> Ques1a [Java Application] /Users/proxim/.p2/pool/plugins/org.eclipse.justj.openjdk.hotspot.jre.full.macosx.x86_64_21.0.8.v20250724
Brand: Toyota
---
Brand: Honda
Model: Civic
---
Brand: Ford
Model: Mustang
Price: 35000.0

Ques11.java | Ques10.java | Ques1a.java | Ques2a.java | Ques3a.java | Ques4a.java | Ques5a.java | Ques7.java | Ques3

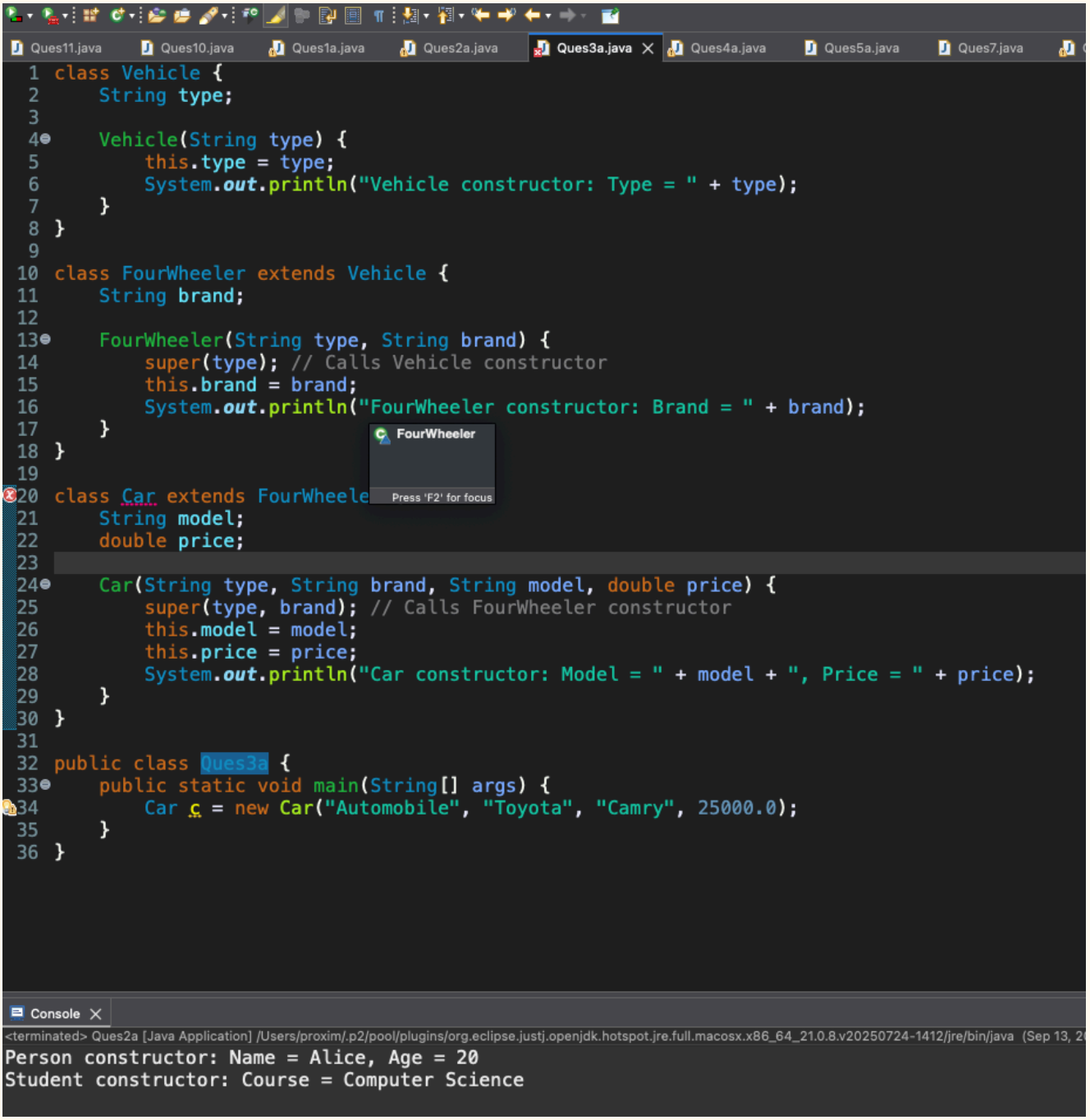
```java
class Person {
    String name;
    int age;

    Person(String name, int age) {
        this.name = name;
        this.age = age;
        System.out.println("Person constructor: Name = " + name + ", Age = " + age);
    }
}

class Student1 extends Person {
    String course;

    Student1(String name, int age, String course) {
        super(name, age); // Calls Person constructor
        this.course = course;
        System.out.println("Student constructor: Course = " + course);
    }
}

public class Ques2a {
    public static void main(String[] args) {
        Student1 s = new Student1("Alice", 20, "Computer Science");
    }
}
```

Console

<terminated> Ques2a [Java Application] /Users/proxim/.p2/pool/plugins/org.eclipse.justj.openjdk.hotspot.jre.full.macosx.x86_64_21.0.8.v20250724-1412/jre/bin/java (Sep 13, 2025, 7

```
Person constructor: Name = Alice, Age = 20
Student constructor: Course = Computer Science
```

Ques 3a.


Ques11.java
Ques10.java
Ques1a.java
Ques2a.java
Ques3a.java
Ques4a.java
Ques5a.java
Ques7.java
1 class Vehicle {
2 String type;
3
4 Vehicle(String type) {
5 this.type = type;
6 System.out.println("Vehicle constructor: Type = " + type);
7 }
8 }
9
10 class FourWheeler extends Vehicle {
11 String brand;
12
13 FourWheeler(String type, String brand) {
14 super(type); // Calls Vehicle constructor
15 this.brand = brand;
16 System.out.println("FourWheeler constructor: Brand = " + brand);
17 }
18 }
19
20 class Car extends FourWheele
21 String model;
22 double price;
23
24 Car(String type, String brand, String model, double price) {
25 super(type, brand); // Calls FourWheeler constructor
26 this.model = model;
27 this.price = price;
28 System.out.println("Car constructor: Model = " + model + ", Price = " + price);
29 }
30 }
31
32 public class Ques3a {
33 public static void main(String[] args) {
34 Car c = new Car("Automobile", "Toyota", "Camry", 25000.0);
35 }
36 }
FourWheeler
Press 'F2' for focus
Console
<terminated> Ques2a [Java Application] /Users/proxim/.p2/pool/plugins/org.eclipse.justj.openjdk.hotspot.jre.full.macosx.x86_64_21.0.8.v20250724-1412/jre/bin/java (Sep 13, 2
Person constructor: Name = Alice, Age = 20
Student constructor: Course = Computer Science

Ques 4a.

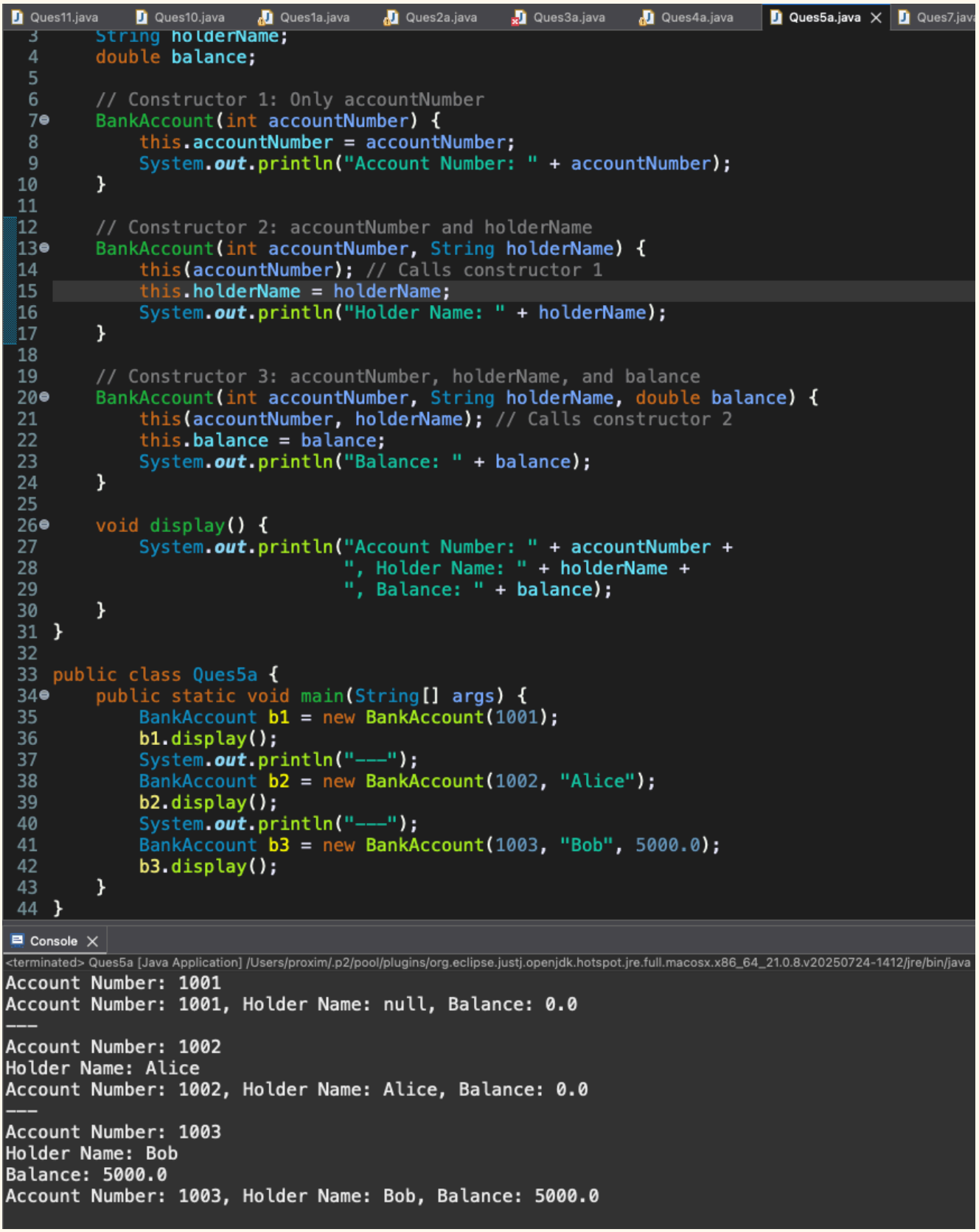
```java
class Order {
    int orderId;
    String customerName;
    double totalAmount;

    // Constructor 1: Only orderId
    Order(int orderId) {
        this.orderId = orderId;
        System.out.println("OrderId: " + orderId);
    }

    // Constructor 2: orderId and customerName
    Order(int orderId, String customerName) {
        this(orderId); // Calls constructor 1
        this.customerName = customerName;
        System.out.println("Customer Name: " + customerName);
    }

    // Constructor 3: orderId, customerName, and totalAmount
    Order(int orderId, String customerName, double totalAmount) {
        this(orderId, customerName); // Calls constructor 2
        this.totalAmount = totalAmount;
        System.out.println("Total Amount: " + totalAmount);
    }
}

public class Ques4a {
    public static void main(String[] args) {
        Order o1 = new Order(101);
        System.out.println("---");
        Order o2 = new Order(102, "Alice");
        System.out.println("---");
        Order o3 = new Order(103, "Bob", 2500.50);
    }
}
```

Console

<terminated> Ques2a [Java Application] /Users/proxim/.p2/pool/plugins/org.eclipse.justj.openjdk.hotspot.jre.full.macosx.x86_64_21.0.8.v20250724-1412/jre/bin/java (Se

```
Person constructor: Name = Alice, Age = 20
Student constructor: Course = Computer Science
```

Ques 5a.



```
Ques11.java  Ques10.java  Ques1a.java  Ques2a.java  Ques3a.java  Ques4a.java  Ques5a.java  Ques7.java

 3      String holderName;
 4      double balance;
 5
 6      // Constructor 1: Only accountNumber
 7      BankAccount(int accountNumber) {
 8          this.accountNumber = accountNumber;
 9          System.out.println("Account Number: " + accountNumber);
10      }
11
12      // Constructor 2: accountNumber and holderName
13      BankAccount(int accountNumber, String holderName) {
14          this(accountNumber); // Calls constructor 1
15          this.holderName = holderName;
16          System.out.println("Holder Name: " + holderName);
17      }
18
19      // Constructor 3: accountNumber, holderName, and balance
20      BankAccount(int accountNumber, String holderName, double balance) {
21          this(accountNumber, holderName); // Calls constructor 2
22          this.balance = balance;
23          System.out.println("Balance: " + balance);
24      }
25
26      void display() {
27          System.out.println("Account Number: " + accountNumber +
28                             ", Holder Name: " + holderName +
29                             ", Balance: " + balance);
30      }
31  }
32
33  public class Ques5a {
34      public static void main(String[] args) {
35          BankAccount b1 = new BankAccount(1001);
36          b1.display();
37          System.out.println("---");
38          BankAccount b2 = new BankAccount(1002, "Alice");
39          b2.display();
40          System.out.println("---");
41          BankAccount b3 = new BankAccount(1003, "Bob", 5000.0);
42          b3.display();
43      }
44  }
```

Console

```
<terminated> Ques5a [Java Application] /Users/proxim/.p2/pool/plugins/org.eclipse.justj.openjdk.hotspot.jre.full.macosx.x86_64_21.0.8.v20250724-1412/jre/bin/java
Account Number: 1001
Account Number: 1001, Holder Name: null, Balance: 0.0
---
Account Number: 1002
Holder Name: Alice
Account Number: 1002, Holder Name: Alice, Balance: 0.0
---
Account Number: 1003
Holder Name: Bob
Balance: 5000.0
Account Number: 1003, Holder Name: Bob, Balance: 5000.0
```