

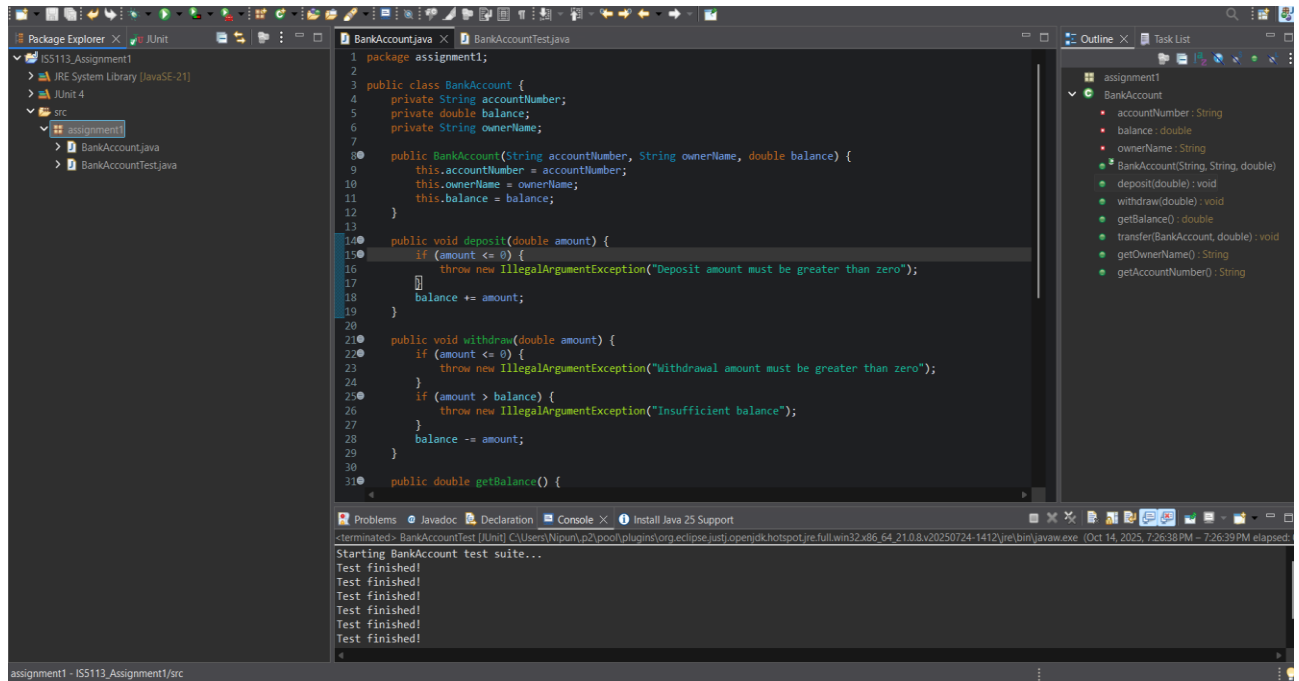
Assignment

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Software Quality Assurance (Practical)
IS5113

21CIS0072
HRNAR Senarath

Part A



The screenshot shows the Eclipse IDE with two files open: `BankAccount.java` and `BankAccountTest.java`. The `BankAccount.java` file contains the following code:

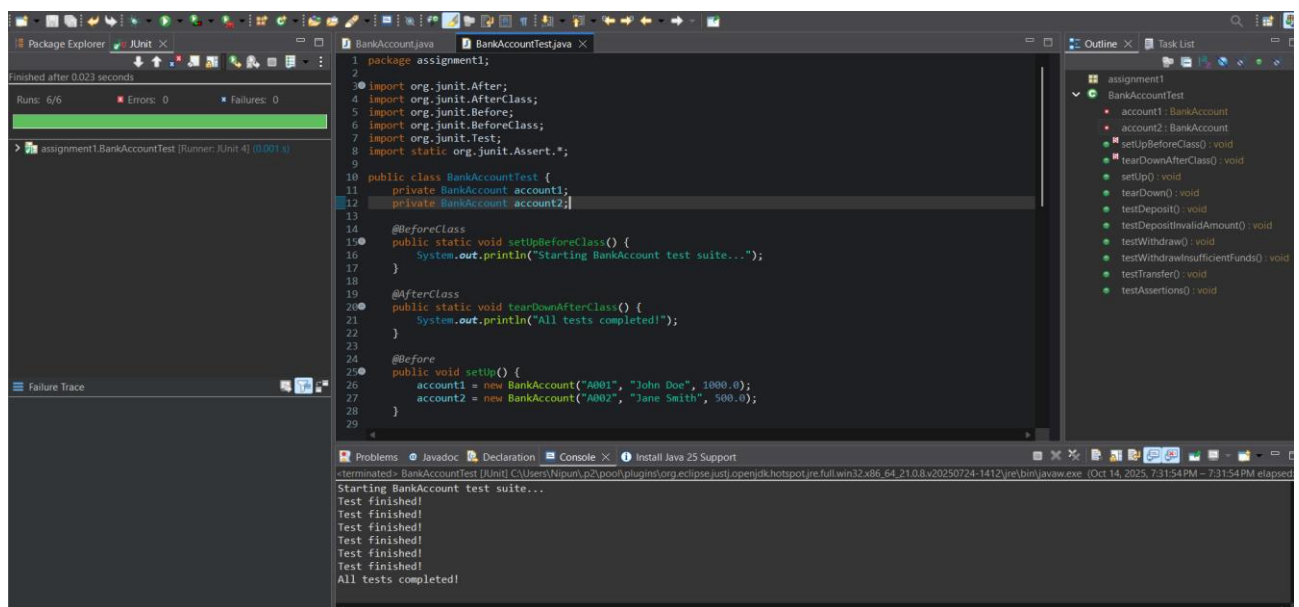
```
1 package assignment1;
2
3 public class BankAccount {
4     private String accountNumber;
5     private double balance;
6     private String ownerName;
7
8     public BankAccount(String accountNumber, String ownerName, double balance) {
9         this.accountNumber = accountNumber;
10        this.ownerName = ownerName;
11        this.balance = balance;
12    }
13
14    public void deposit(double amount) {
15        if (amount <= 0) {
16            throw new IllegalArgumentException("Deposit amount must be greater than zero");
17        }
18        balance += amount;
19    }
20
21    public void withdraw(double amount) {
22        if (amount <= 0) {
23            throw new IllegalArgumentException("Withdrawal amount must be greater than zero");
24        }
25        if (amount > balance) {
26            throw new IllegalArgumentException("Insufficient balance");
27        }
28        balance -= amount;
29    }
30
31    public double getBalance() {
```

The `BankAccountTest.java` file contains the following code:

```
1 package assignment1;
2
3 import org.junit.After;
4 import org.junit.AfterClass;
5 import org.junit.Before;
6 import org.junit.BeforeClass;
7 import org.junit.Test;
8 import static org.junit.Assert.*;
9
10 public class BankAccountTest {
11     private BankAccount account1;
12     private BankAccount account2;
13
14     @BeforeClass
15     public static void setUpBeforeClass() {
16         System.out.println("Starting BankAccount test suite...");
17     }
18
19     @AfterClass
20     public static void tearDownAfterClass() {
21         System.out.println("All tests completed!");
22     }
23
24     @Before
25     public void setUp() {
26         account1 = new BankAccount("A001", "John Doe", 1000.0);
27         account2 = new BankAccount("A002", "Jane Smith", 500.0);
28     }
29 }
```

The console output shows the following messages:

```
Starting BankAccount test suite...
Test finished!
Test finished!
Test finished!
Test finished!
Test finished!
Test finished!
```



The screenshot shows the Eclipse IDE with the `BankAccountTest.java` file open. The `BankAccountTest.java` file contains the following code:

```
1 package assignment1;
2
3 import org.junit.After;
4 import org.junit.AfterClass;
5 import org.junit.Before;
6 import org.junit.BeforeClass;
7 import org.junit.Test;
8 import static org.junit.Assert.*;
9
10 public class BankAccountTest {
11     private BankAccount account1;
12     private BankAccount account2;
13
14     @BeforeClass
15     public static void setUpBeforeClass() {
16         System.out.println("Starting BankAccount test suite...");
17     }
18
19     @AfterClass
20     public static void tearDownAfterClass() {
21         System.out.println("All tests completed!");
22     }
23
24     @Before
25     public void setUp() {
26         account1 = new BankAccount("A001", "John Doe", 1000.0);
27         account2 = new BankAccount("A002", "Jane Smith", 500.0);
28     }
29 }
```

The console output shows the following messages:

```
Starting BankAccountTest [JUnit] C:\Users\Nipun\p2\pool\plugins\org.eclipse.jdt.openjdk.hotspot.jre.full.win32.x86_64_21.0.8.v20250724-1412\jre\bin\javaw.exe (Oct 14, 2025, 7:26:38 PM - 7:26:39 PM elapsed)
Starting BankAccount test suite...
Test finished!
Test finished!
Test finished!
Test finished!
Test finished!
Test finished!
All tests completed!
```

Part B

Purpose:

This file is used to **test** the BankAccount class automatically using **JUnit** (a Java testing framework).

It checks whether the deposit, withdraw, and transfer methods work correctly.

What happens:

- Before all tests start, a message says the test suite is starting.
- Before each test, two accounts are created (account1 and account2).
- Each test checks one part of the BankAccount class (for example: deposit, withdraw, transfer).
- After each test, a message says the test is finished.
- After all tests, a final message says all tests are completed.

Why use it:

- To **make sure the BankAccount class works properly**.
- To **catch errors early** before running the main program.
- To **automate testing** instead of checking manually.

Expected Output:

- Messages like:

Starting BankAccount test suite...

Test finished!

All tests completed!