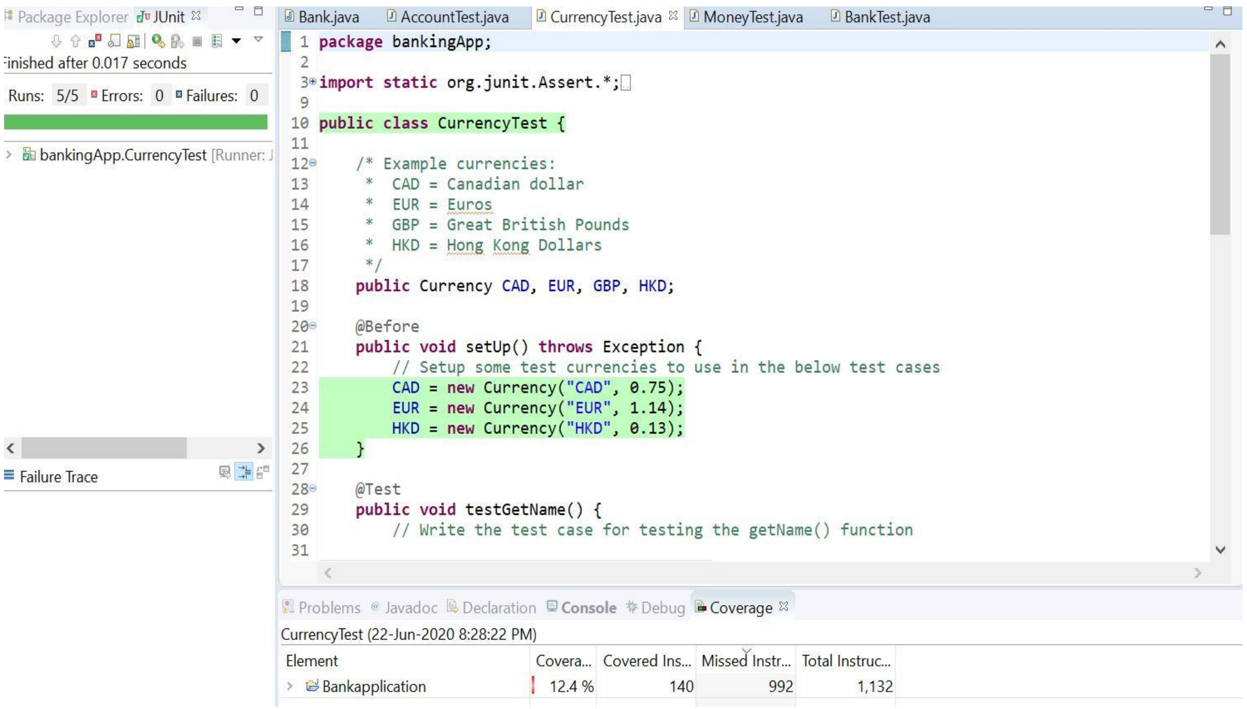
Part 3:

Code coverage:

Currency.java



Package Explorer | JUnit

inished after 0.017 seconds

Runs: 5/5 Errors: 0 Failures: 0

bankingApp.CurrencyTest [Runner: J

Failure Trace

Bank.java | AccountTest.java | CurrencyTest.java | MoneyTest.java | BankTest.java

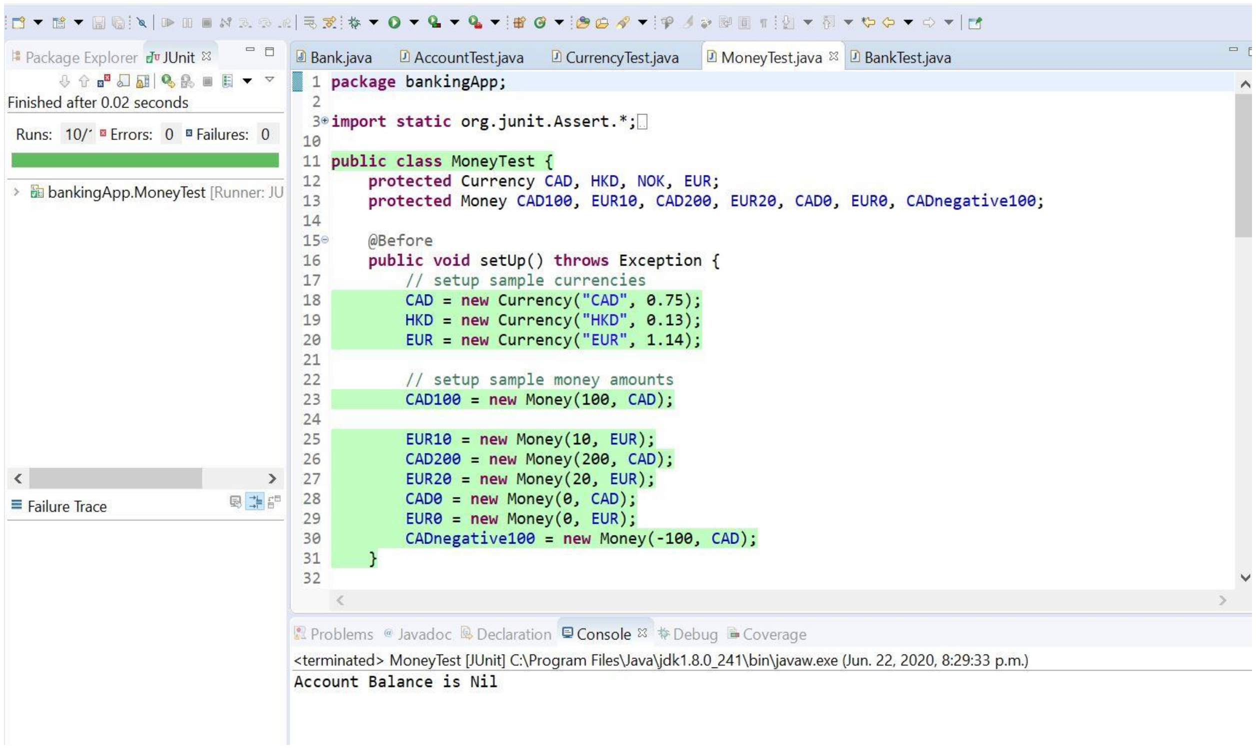
```java
package bankingApp;

import static org.junit.Assert.*;

public class CurrencyTest {

    /* Example currencies:
     *  CAD = Canadian dollar
     *  EUR = Euros
     *  GBP = Great British Pounds
     *  HKD = Hong Kong Dollars
     */
    public Currency CAD, EUR, GBP, HKD;

    @Before
    public void setUp() throws Exception {
        // Setup some test currencies to use in the below test cases
        CAD = new Currency("CAD", 0.75);
        EUR = new Currency("EUR", 1.14);
        HKD = new Currency("HKD", 0.13);
    }

    @Test
    public void testGetName() {
        // Write the test case for testing the getName() function

```

Problems | Javadoc | Declaration | Console | Debug | Coverage

CurrencyTest (22-Jun-2020 8:28:22 PM)

Element	Covera...	Covered Ins...	Missed Instr...	Total Instruc...
Bankapplication	12.4 %	140	992	1,132

Money.java



Package Explorer | JUnit

Finished after 0.02 seconds

Runs: 10/' Errors: 0 Failures: 0

bankingApp.MoneyTest [Runner: JU

Failure Trace

Bank.java | AccountTest.java | CurrencyTest.java | MoneyTest.java | BankTest.java

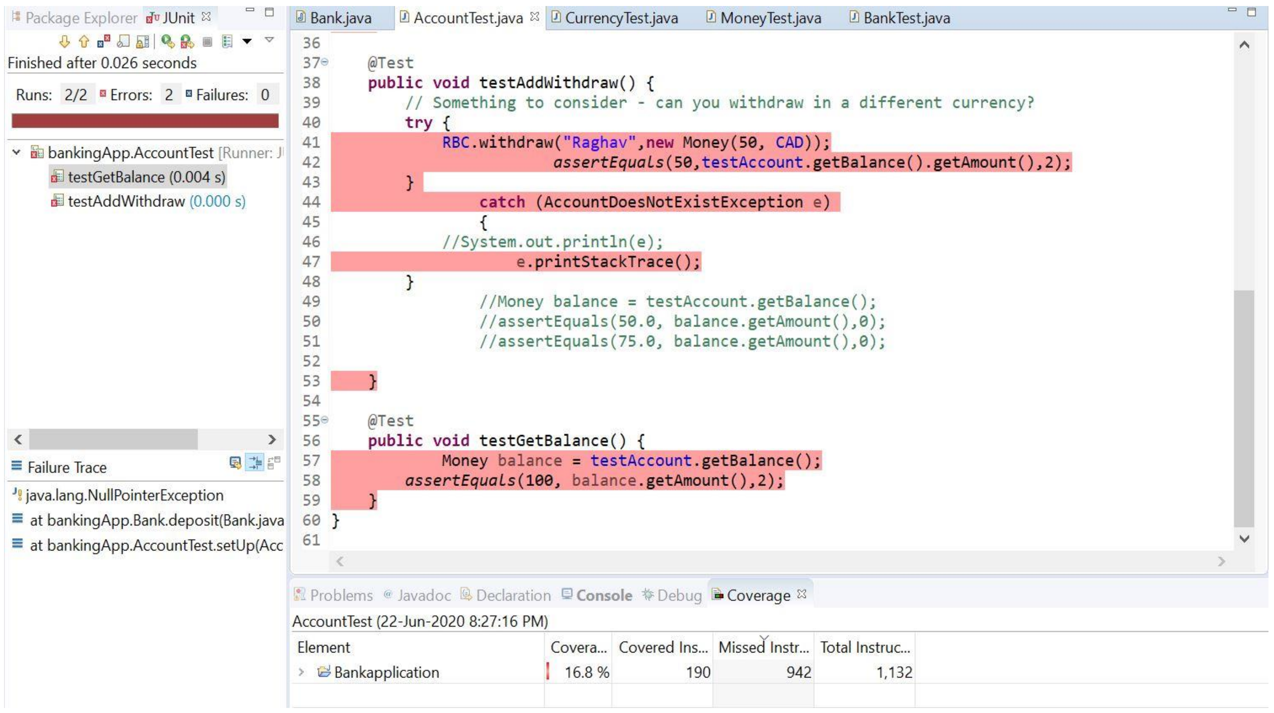
```java
package bankingApp;

import static org.junit.Assert.*;

public class MoneyTest {
    protected Currency CAD, HKD, NOK, EUR;
    protected Money CAD100, EUR10, CAD200, EUR20, CAD0, EUR0, CADnegative100;

    @Before
    public void setUp() throws Exception {
        // setup sample currencies
        CAD = new Currency("CAD", 0.75);
        HKD = new Currency("HKD", 0.13);
        EUR = new Currency("EUR", 1.14);

        // setup sample money amounts
        CAD100 = new Money(100, CAD);

        EUR10 = new Money(10, EUR);
        CAD200 = new Money(200, CAD);
        EUR20 = new Money(20, EUR);
        CAD0 = new Money(0, CAD);
        EUR0 = new Money(0, EUR);
        CADnegative100 = new Money(-100, CAD);
    }

```

Problems | Javadoc | Declaration | Console | Debug | Coverage

```
<terminated> MoneyTest [JUnit] C:\Program Files\Java\jdk1.8.0_241\bin\javaw.exe (Jun. 22, 2020, 8:29:33 p.m.)
Account Balance is Nil
```

Part 4: (Test Cases)

Account test.java



Finished after 0.026 seconds

Runs: 2/2 Errors: 2 Failures: 0

bankingApp.AccountTest [Runner: J
testGetBalance (0.004 s)
testAddWithdraw (0.000 s)

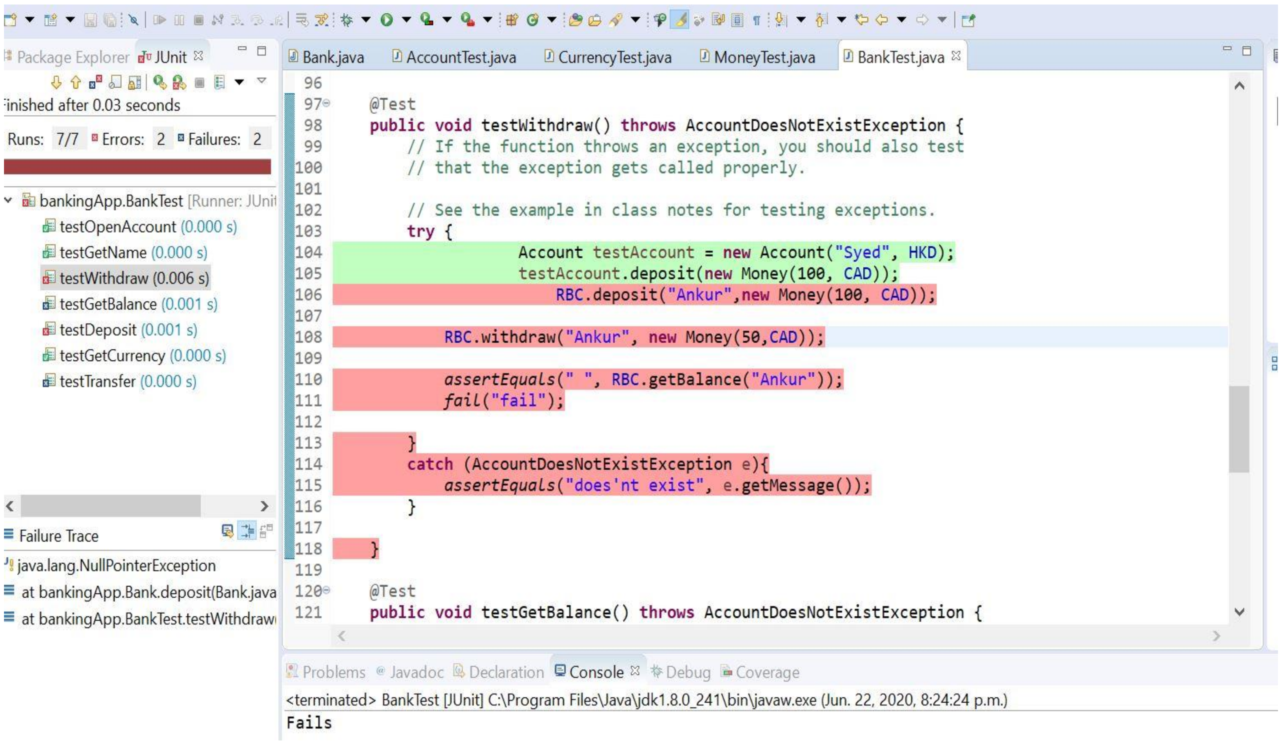
Failure Trace
java.lang.NullPointerException
at bankingApp.Bank.deposit(Bank.java
at bankingApp.AccountTest.setUp(Acc

```java

    @Test
    public void testAddWithdraw() {
        // Something to consider - can you withdraw in a different currency?
        try {
            RBC.withdraw("Raghav",new Money(50, CAD));
                        assertEquals(50,testAccount.getBalance().getAmount(),2);
        }
                catch (AccountDoesNotExistException e)
                {
            //System.out.println(e);
                    e.printStackTrace();
        }
                //Money balance = testAccount.getBalance();
                //assertEquals(50.0, balance.getAmount(),0);
                //assertEquals(75.0, balance.getAmount(),0);

    }

    @Test
    public void testGetBalance() {
            Money balance = testAccount.getBalance();
        assertEquals(100, balance.getAmount(),2);
    }
}

```

AccountTest (22-Jun-2020 8:27:16 PM)

Element	Covera...	Covered Ins...	Missed Instr...	Total Instruc...
Bankapplication	16.8 %	190	942	1,132

Bank test.java



inished after 0.03 seconds

Runs: 7/7 Errors: 2 Failures: 2

bankingApp.BankTest [Runner: JUnit
testOpenAccount (0.000 s)
testGetName (0.000 s)
testWithdraw (0.006 s)
testGetBalance (0.001 s)
testDeposit (0.001 s)
testGetCurrency (0.000 s)
testTransfer (0.000 s)

Failure Trace
java.lang.NullPointerException
at bankingApp.Bank.deposit(Bank.java
at bankingApp.BankTest.testWithdraw

```java

    @Test
    public void testWithdraw() throws AccountDoesNotExistException {
        // If the function throws an exception, you should also test
        // that the exception gets called properly.

        // See the example in class notes for testing exceptions.
        try {
                    Account testAccount = new Account("Syed", HKD);
                    testAccount.deposit(new Money(100, CAD));
                        RBC.deposit("Ankur",new Money(100, CAD));

            RBC.withdraw("Ankur", new Money(50,CAD));

            assertEquals(" ", RBC.getBalance("Ankur"));
            fail("fail");

        }
        catch (AccountDoesNotExistException e){
            assertEquals("does'nt exist", e.getMessage());
        }

    }

    @Test
    public void testGetBalance() throws AccountDoesNotExistException {
```

<terminated> BankTest [JUnit] C:\Program Files\Java\jdk1.8.0_241\bin\javaw.exe (Jun. 22, 2020, 8:24:24 p.m.)

```
Fails
```

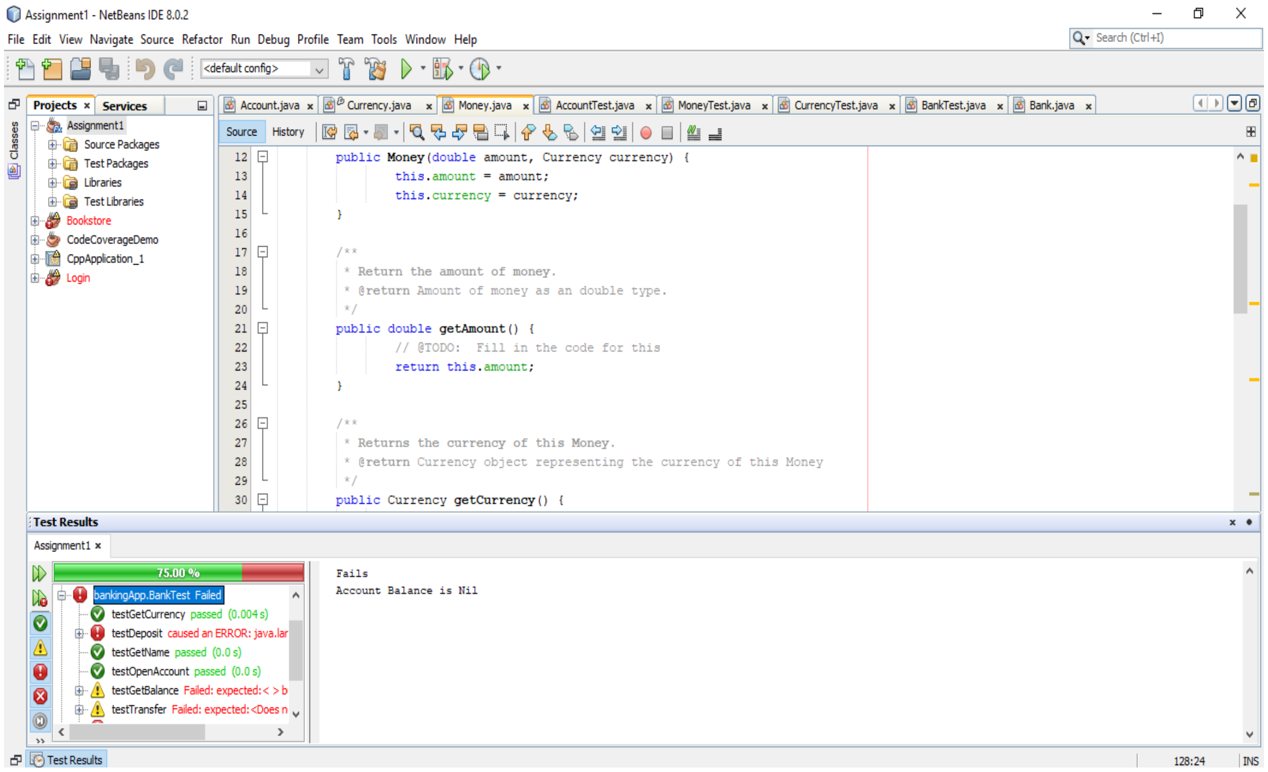
Part - 5 (Cases failed)

Test cases Failed:

- From AccountTest (testAddWithdraw and testGetBalance) Failed.
- From BankTest (testDeposit and testWithdraw) Failed.

Withdraw test and test deposit fail in bank-test.java

Reason: The reason for failure is the Null pointer exception thrown at the time of execution because the object of reference was carrying null value, additionally method deposit in bank.java did not took the input when called from BankTest.java file which continuously gave the error of parameter money.



```
public Money(double amount, Currency currency) {
        this.amount = amount;
        this.currency = currency;
}

/**
 * Return the amount of money.
 * @return Amount of money as an double type.
 */
public double getAmount() {
        // @TODO:  Fill in the code for this
        return this.amount;
}

/**
 * Returns the currency of this Money.
 * @return Currency object representing the currency of this Money
 */
public Currency getCurrency() {
```

```
bankingApp.BankTest Failed
    testGetCurrency passed (0.004 s)
    testDeposit caused an ERROR: java.lar
    testGetName passed (0.0 s)
    testOpenAccount passed (0.0 s)
    testGetBalance Failed: expected:< > b
    testTransfer Failed: expected:<Does n
```

```
Fails
Account Balance is Nil
```

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