Junit Assignment

Q4

```
<terminated> MathsTest [JUnit] C\Program Files\Java\jdk-16.0.2\bin\javaw. 1⊕ import static org.junit.jupiter.api.Assertions.*;
1.Before All Executed 2.BeforeEach executed
                                                                            import org.junit.jupiter.api.AfterAll;
                                                                         4 import org.junit.jupiter.api.AfterEach;
5 import org.junit.jupiter.api.BeforeAll;
6 import org.junit.jupiter.api.BeforeEach;
3.Test case -> successful
2.BeforeEach executed
3.Test case -> successful
4. The application is terminated
                                                                         7 import org.junit.jupiter.api.Test;
                                                                         9 class MathsTest {
                                                                                  static Maths maths;
                                                                       10
                                                                        11
                                                                       13
14
15
16
17
                                                                                static void beforeAllInit() {
    System.out.println("1.Before All Executed");
                                                                        18⊖
                                                                                 @BeforeEach
                                                                        19
                                                                                 void init() {
Package Explorer  JUnit ⋈
                                                                        20
                                                                                     maths = new Maths();
System.out.println("2.BeforeEach executed");
                                  21
22
Finished after 0.233 seconds
                                                                        23
Runs: 2/2 Errors: 0 Failures: 0
                                                                        24
                                                                        25⊝
                                                                                 @Test
                                                            B 7 f
V BandathsTest [Runner: JUnit 5] (0.0 ■ Failure Trace
                                                                        26
                                                                                 void testAdd() {
                                                                        27
28
29
      # testAdd() (0.023 s)
                                                                                      int expected = 2;
int actual = maths.add(1,1);
      testDivide() (0.005 s)
                                                                                      assertEquals(expected, actual, " Addition of two numbers");
                                                                        30
31
32
33
34<sup>©</sup>
                                                                                @Test
                                                                       35
36
37
38
39
40<sup>®</sup>
                                                                                  void testDivide() {
                                                                                     assertThrows(ArithmeticException.class, ()->maths.divide(1,0), "Divide by zero should throw");
                                                                                 @AfterEach
                                                                        41
                                                                                 void cleanup() {
                                                                       42
                                                                                      System.out.println("3.Test case -> successful");
```

```
1 public class MinMaxFinder {
 2
        public static int getMaxValue(int[] array) {
 3⊝
            int value = Integer.MIN_VALUE;
 4
 5
 6
            if (array.length <= 0) {</pre>
 7
                throw new IllegalArgumentException("Array is empty.");
 8
            }
 9
            for (int i = 0; i < array.length; i++) {</pre>
10
11
                if (array[i] > value) {
12
                     value = array[i];
13
14
            }
15
            return value;
16
        }
17
18⊝
        public static int getMinValue(int[] array) {
19
            int value = Integer.MAX_VALUE;
20
21
            if (array.length <= 0) {</pre>
22
                throw new IllegalArgumentException("Array is empty.");
23
            }
24
25
            for (int i=0; i < array.length; i++) {</pre>
26
                if (array[i] < value) {</pre>
27
                     value = array[i];
28
                }
29
30
            return value;
31
        }
32 }
```

Test Case 1

```
🕀 🕆 🗗 🚨 🔠 🦠 🖟 🔳 🗒 🔻 🖁 📅 🗖 🔯 Collection3.ja... 🚨 Employee.java 🚨 MathsTest.java 🚨 MinMaxFinder.j... 🚨 MinMaxFinder T...
...

₱ Package Explorer dv JUnit ⊠
Finished after 0.182 seconds
                                                                             1 import org.junit.Test;

☐ Failures: 0
   Runs: 2/2
                         ■ Frrors: 0
                                                                              public class MinMaxFinderTest {
                                                                                  int[] array = new int[] {56,34,7,3,54,3,34,34,53};
  v 🛅 MinMaxFinderTest [Runner: JUnit 5] (0.003 s)
      7⊝
                                                                                  @Test
      public void shouldBeMaxValue() {
                                                                                      int maxValue = MinMaxFinder.getMaxValue(array);
                                                                           10
                                                                                      assert(maxValue == 56);
                                                                           11
                                                                           12
                                                                           13⊖
                                                                           14
                                                                                  public void shouldBeMinValue() {
                                                                                      int minValue = MinMaxFinder.getMinValue(array);
                                                                           15
                                                                           16
                                                                                      assert(minValue == 3);
                                                                           17
                                                                           18
                                                                           19
                                                                           20 }
                                                                           21
                                                                           22
                                                                  國泽曾
  Failure Trace
```

Test Case 2

```
Finished after 0.194 seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     import org.junit.Test;
    Runs: 2/2
                                                                                                                                                                                                                                                                                                         ■ Failures: 0
                                                                                                                                                  ■ Errors: 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     public class MinMaxFinderTest {
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               int[] array = new int[] {56,34,7,3,54,3,34,34,53};

→ Image: Value of the value o
                              shouldBeMaxValue (0.005 s)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
9
10
11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               public void shouldBeMaxValue() {
  int maxValue = MinMaxFinder.getMaxValue(array);
  assert(maxValue == 56);
                              public void shouldBeMinValue() {
   int minValue = MinMaxFinder.getMinValue(array);
   assert(minValue == 0);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           @Test(expected = IllegalArgumentException.class)
public void shouldBeIllegalArgumentException() {
  int[] emptyArray = new int[] {};
  int maxValue = MinMaxFinder.getMaxValue(emptyArray);
  int minValue = MinMaxFinder.getMinValue(emptyArray);
}
                                                                                                                                                                                                                                                                                                                                                                                                                      22
23
24
25 }
26
27
    Failure Trace
```

Test Case 3

```
🗦 🕆 📲 🚨 📓 🔍 🔒 🗏 🗸 🖁 🖰 🖸 🖸 Collection3ja... 🖸 Employee.java 🛕 MathsTest.java 🖟 MinMaxFinderj... 🖟 MinMaxFinder ...
Finished after 0.273 seconds
                                                                                                                    import org.junit.Test;
    Runs: 1/1

    Errors: 0
                                                                                                                     public class MinMaxFinderTest {
                                                                                                                          int[] array = new int[] {};

→ MinMaxFinderTest [Runner: JUnit 5] (0.071 s)

                                                                                                                          /*@Test
public void shouldBeMaxValue() {
   int maxValue = MinMaxFinder.getMaxValue(array);
   assert(maxValue == 56);
          a shouldBelllegalArgumentException (0.071 s)
                                                                                                                          public void shouldBeMinValue() {
    int minValue = MinMaxFinder.getMinValue(array);
    assert(minValue == 0);
                                                                                                                          @Test(expected = IllegalArgumentException.class)
                                                                                                                          prest(expected = firegiarygumentException() {
   int[] emptyArray = new int[] {};
   int maxYalue = MinMaxFinder.getMaxValue(emptyArray);
   int minValue = MinMaxFinder.getMinValue(emptyArray);
                                                                                                   25 }
26
   Failure Trace
```

Q3

```
<terminated> BankTest [JUnit] C:\Program Files\Java\jdk-16.0.2\bin\javaw.e 😘 1® import static org.junit.jupiter.api.Assertions.*;
Deposit an amount
                                                               3 import java.util.Scanner:
Withdraw an amount
                                                            5 import org.junit.jupiter.api.Assertions;
11000
                                                              6 import org.junit.jupiter.api.Test;
                                                              8 class BankTest {
                                                             109
                                                                          @Test
                                                             11
                                                                           void bankAccount() throws IllegalAccessException
                                                             12
                                                             13
                                                                          {
                                                             14
                                                                              double balance = 0, damount, wamount:
                                                             15
                                                                              Scanner dep=new Scanner(System.in);
                                                             16
                                                              17
                                                                              System.out.println("Deposit an amount");
                                                             18
                                                                              damount=dep.nextInt();
                                                             19
                                                                              balance += damount;
Package Explorer d<sup>®</sup> JUnit ⋈
                             Scanner wd=new Scanner(System.in);
                                                                              System.out.println("Withdraw an amount");
Finished after 14.135 seconds
                                                                              wamount=wd.nextInt();
Runs: 1/1 

Errors: 1 

Failures: 0
                                                                              balance -= wamount;
                                                             25
                                                                              if (balance<0)

    ▼ BankTest [Runner: JUnit 5] (13.9 ■ Failure Trace

                                                   ₽ 7 #
    bankAccount() (13.947 s)
                             🛂 java.lang.NullPointerException: Car
                                                                              throw new IllegalAccessException();
                                                              28
                              at BankTest.bankAccount(BankTes
                                                             29
                              at java.base/java.util.ArrayList.forE
                                                              30
                                                                              System.out.println(balance);
                              at java.base/java.util.ArrayList.forE
                                                             31
                                                             33⊜
                                                                           void main(String args[])
                                                             34
                                                                          {
                                                             35
                                                             36
                                                                              try
                                                             37
                                                             38
                                                                                  bankAccount();
                                                             39
                                                             40
                                                                              catch(IllegalAccessException ex)
                                                             41
                                                                                  System.out.println("Exceeding Balance");
                                                             42
                                                             43
```