Introduction to Java V2

Java JDK installation

- Download Java JDK from here: http://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html
- Select Java SE Development Kit 8uX where X is the current version. Select the proper operating system.
- Install as usual (next, next, finish)

Environment Variables settings

- Path: C:\installdir\jdk1.x.y.z_abc\bin

Eclipse installation

- Download Eclipse Neon from here: https://www.eclipse.org/downloads/?
- Run installer in administrator mode
- In the installer select the following option: Eclipse IDE for Java Developers
- Wait until it finishes ☺, then Launch

Eclipse first start

- Workspace creation: this is where eclipse will store it's own setting, general project settings, etc.
- It will come with a customisable layout, use as you see fit

New Project

- File -> New
- Alt+Shift+N
- Window icon with + sign

Exercise 1 - HelloWorld

- Write a program called HelloWorld that prints out Hello World!
- Solution

Exercise 2 - Months

- Write an application that creates and populates an array of 12 Strings with the name of the months. Use a for loop to print out each month, one per line
- Solution

Exercise 3 - Months reloaded

- Modify Months to be more formal. First declare the array, then create the array and last but not least, populate the array. Use for-each loop instead of for
- Solution

Exercise 4 - CheckPassFail

- Write a program called CheckPassFail which prints "PASS" if the int variable "mark" is more than or equal to 50; or prints "FAIL" otherwise. The program shall always print “DONE” before exiting.
- Solution

Exercise 5 - CheckOddEven

- Write a program called CheckOddEven which prints "Odd Number" if the int variable “number” is odd, or “Even Number” otherwise. The program shall always print “BYE!” before exiting.
- Hints: n is an even number if (n % 2) is 0; otherwise, it is an odd number.
- Solution

Exercise 6 - PrintNumberInWord

- Write a program called PrintNumberInWord which prints "ONE", "TWO", "THREE", "OTHER" if the int variable "number" is 1, 2, 3, or other, respectively. Use (a) a "nested-if" statement; (b) a "switch-case" statement.
- Solution

Exercise 7 - SumAndAverage

- Write a program called SumAndAverage to produce the sum of 1, 2, 3, ..., to 100. Also compute and display the average. The output shall look like:
- The sum is: xyz
- The average is: zxy
- Hint: Use a for loop
- Solution

Exercise 8 - SumAndAverage with while

- Modify the previous program to use a while loop instead of for
- Solution

Exercise 9 - SumAndAverage with do-while

- Modify the previous program to use a do-while loop instead of while
- Solution

Solution 1

```
package exercises;

public class HelloWorld {

    public static void main(String[] args) {
        System.out.println("Hello World");
    }
}
```

Solution 2

```
package exercises;

public class Months {
    public static void main(String args[]) {
        String[] months = {"January", "February", "March", "April",  "May", "June",
                "July", "August", "September", "October", "November", "December"};
        for (int i = 0; i < months.length; i++) {
            System.out.println(months[i]);
        }
    }
}
```

Solution 3

```
package exercises;

public class Months {
    public static void main(String args[]) {
        String[] months;
        months = new String[12];
        months[0] = "January";
        months[1] = "February";
        months[2] = "March";
        months[3] = "April";
        months[4] = "May";
        months[5] = "June";
        months[6] = "July";
        months[7] = "August";
        months[8] = "September";
        months[9] = "October";
        months[10] = "November";
        months[11] = "December";

        for (String m : months) {
            System.out.println(m);
        }
    }
}
```

Solution 4

```
package exercises;

public class CheckPassFail {
    public static void main(String[] args) {
          int mark = 49;
          if (mark >= 50) {
             System.out.println("PASS");
          } else {
             System.out.println("FAIL");
          }
          System.out.println("DONE");
       }
}
```

Solution 5

```
package exercises;

public class CheckOddEven {
    public static void main(String[] args) {
        int mark = 49;
        if (mark % 2 == 0) {
            System.out.println("Even Number");
        }
        else {
            System.out.println("Odd Number");
        }
        System.out.println("Bye!");
    }
}
```

Solution 6

```
package exercises;

public class Months {
    public static void main(String args[]) {
        String[] months;
        months = new String[12];
        months[0] = "January";
        months[1] = "February";
        months[2] = "March";
        months[3] = "April";
        months[4] = "May";
        months[5] = "June";
        months[6] = "July";
        months[7] = "August";
        months[8] = "September";
        months[9] = "October";
        months[10] = "November";
        months[11] = "December";

        for (String m : months) {
            System.out.println(m);
        }
    }
}
```

Solution 7

```java
package exercises;

public class SumAndAverage {
    public static void main (String[] args) {
        int sum = 0;
        double average;
        for (int number = 1; number <= 100; ++number) {
            sum += number;
        }
        System.out.println("The sum is " + sum);
        double sumInDouble = sum;
        average = sumInDouble / 100;
        System.out.println("The average is " + average);
    }
}
```

Solution 8

```java
package exercises;

public class SumAndAverage {
    public static void main (String[] args) {
        int sum = 0;
        double average;
        int number = 1;
        while (number <= 100) {
            sum += number;
            number++;
        }
        System.out.println("The sum is " + sum);
        double sumInDouble = sum;
        average = sumInDouble / 100;
        System.out.println("The average is " + average);
    }
}
```

Solution 9

```java
package exercises;

public class SumAndAverage {
    public static void main (String[] args) {
        int sum = 0;
        double average;
        int number = 1;
        do {
            sum += number;
            number++;
        } while (number <= 100);
        System.out.println("The sum is " + sum);
        double sumInDouble = sum;
        average = sumInDouble / 100;
        System.out.println("The average is " + average);
    }
}
```