<u>ICS4U0 - Files</u>

1. Write a program that reads the marks in from the text file "marks.txt". Your program will calculate and output the average of all the marks. You must use a loop to read in the text.

```
FileReader fr = new FileReader ("./Marks Folder/marks.txt");
Scanner scan = new Scanner(fr); //Reads the file
int mark; //Reads in the marks
double count=0; //counts the number of marks
double sumMark = 0; //Sum of all marks
double average = 0; //Calculates the average of marks

while (scan.hasNextInt()) {
        mark = scan.nextInt();
        sumMark = sumMark + mark;
        count++;
}
scan.close(); //Closes the file
average = sumMark/count;
System.out.println(Math.round(average*100.0)/100.0);
```

2. Write a program that prompts the user for marks and stores them one at a time in a text files called "marks2.txt"

```
Scanner input = new Scanner (System.in);
FileWriter fr = new FileWriter ("./Marks Folder/marks2.txt"); //File Writer
Directory
PrintWriter pw = new PrintWriter (fr);
int mark=1;
while (mark!=0) {
        System.out.println("Enter mark:");
        mark = input.nextInt();
        pw.write(mark + "\n");
}
pw.close();
```

3. The marks for a class are stored in a text file called "marks3.txt". The marks are saved in the following format: The first number represents the total number of (two digit) marks stored sequentially in each line of text. Each line of text represents a set of marks.

For example: 456768758
From above, the 4 represent the number of marks – 56, 76, 87, and 58

Write a program that will calculate the average of each set of marks as well as

the overall average.

```java
                FileReader fr = new FileReader ("./Marks Folder/marks3.txt");
                Scanner scan = new Scanner (fr);
                String mark;
                int setCount = 0;
                        //Counts the total set of marks
                double average = 0;
                            //Stores the average of the set of marks
                double overallSum = 0;
                        //Adds the marks from each set
                double overallAverage = 0;
                        //Calculates the Overall Average


                while (scan.hasNextLine()) {
                //Reads the mark format as a String
                        mark = scan.nextLine();
                        System.out.println(mark);
                        average = Average (mark);
                        overallSum = overallSum + average;
                        setCount++;
                        System.out.println("Set #" + setCount + " average: " + average + "\n");
                }
                scan.close();
                overallAverage = Math.round((overallSum/setCount)*10.0)/10.0;
                System.out.println ("Overall Average: " + overallAverage);
        }

        public static double Average (String mark) {
                int totalMarks = Integer.parseInt(mark.substring(0,1));
                double markConverter=0;
                        //Converts each mark from string to int
                double sum = 0;                                 //Adds all the set of marks
                double  average =0;                             //Calculates the Average of the
        set of marks
                for (int x=totalMarks, y=1; y+2<=mark.length(); x--, y=y+2) {
                        markConverter = Integer.parseInt(mark.substring(y,y+2));
                        System.out.print(markConverter + " ");
                        sum = sum + markConverter;
                        average = Math.round((sum/totalMarks)*10.0)/10.0;
                }
                System.out.println();
                return average;
        }
```