**Laboratory in1278LR Introduction to Programming with Java**
**Delft University of Technology, Faculty EWI, Software Engineering Research Group.**
**Group = 2; Remainder = 1**

**Assignment 2**
Create a new directory with the name Assignment2.
Use this directory to save all programs that you will create as part of this assignment.

## Part 1, if-then-else

A price of a flight depends upon the number of days the flight has been booked in advance of the flight date:

| Days in advance | Price reduction |
|---|---|
| 0 .. 10 | Basic Price |
| 11 .. 20 | 20% |
| 21 .. 30 | 30% |
| 31 .. 40 | 33% |
| more than 41 | 37% |

Using this information, write a Java program that accepts a Basic Price and the number of days in advance and prints the price. Use a loop to test your program. Exit the loop when a number of days less than zero has been input.
Use simple System input and output to accomplish the task.

**Part 2, Nested if-then-else**

Ms Latte's Moped Rental Ltd. rents mopeds at 11 KluyverRd. To promote business during the slow weekdays, the store gives a huge discount. The rental charges are as follows:

| Moped type | Weekday rental | Weekend rental |
|---|---|---|
| 50 cc Solex | $ 12.00 for the first 3 h, $2.20 per hour after the first 3 h. | $ 20.00 for the first 3 h, $7.00 per hour after the first 3 h. |
| 250 cc Mohawk | $ 22.00 for the first 4 h, $3.20 per hour after the first 4 h. | $ 35.00 for the first 4 h, $8.50 per hour after the first 4 h. |
| 1.2 litre BMW | $ 35.00 for the first 5 h, $3.50 per hour after the first 5 h. | $ 45.00 for the first 5 h, $9.80 per hour after the first 5 h. |

1) Based upon the table, construct a flowchart (just a drawing on a piece of paper) for the decision structure in this algorithm.
2) Given this table, construct a Java program that, given the kind of Moped, the period (Weekday or Weekend) and the (whole) number of hours, calculates the rental charge. Incorrect input will be rejected with an appropriate error message after which the program will halt. For input and output you should use GUI-commands as discussed in the book. You may use numeric codes to distinguish between the various input values (e.g. BMW = 1, etc.).

## Part 3, Loops

Write a program to evaluate the equation $y(x) = x^2 - 3x + 0.3$ for all values of $x$ between -3 and + 3 in steps of 0.1.
1) Draw a flowchart of the requested program.
2) Construct a program using a while-loop,
3) Construct a program using a for-loop.

Use DecimalFormat to obtain a neat listing using 1 decimal digit.

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