Assignment 4

Exercise 1 (3pt)

Write a program that reads n numbers and prints their standard deviation ([Wikipedia](#)).
The program should first prompt the user to input the number of numbers. Then it should read the numbers, compute their standard deviation, and print it.

EXAMPLE:

```
How many numbers:
> 3
Insert 3 numbers:
> 2.1
> 2.6
> 1

Their std is 0.6683312552
```

Exercise 2 (5pt)

Write a program that reads a string of integer numbers separated by space and removes duplicated numbers (the order of the output is not important). Finally, print the result.

EXAMPLE:

```
Numbers:
> 3 4 5 6 3 1 2

Without duplicates 3 1 5 6 4 2
```

Exercise 3 (7pt)

Write a program that simulates the Bean machine (Wikipedia).
Balls are dropped from the top opening of the board. Every time a ball hits a pin it has 50% chances of going left or right. Finally, all balls are accumulated in the slots the bottom of the box.

The program should ask the user to specify the number of balls and the number of slots. It should display the all paths taken by the balls as sequences of L and R depending on where that ball went. Finally, it should show the final disposition of the balls as a **horizontal** chart.

EXAMPLE:

```
Number of balls to drop
> 5
Number of slots:
>8

Paths:
LRLRLRR
RRLLLRR
LLRLLRR
RRLLLLL
LRLRRLR

Disposition:


o
o
ooo
```

Instructions

The solution of the exercises must be provides as a **java** (for the code, do not submit class files), **png** (for eventual screenshot), and **pdf** (for eventual text) files. The **files must be zipped** together before upload. Use the **terminal** to compile and execute the code.

Assignments not respecting these instructions will be ignored.