> **README.md**

All the commands are given from main directory of the submission

The source code is compiled used java 14 (Openjdk 14.0.1). You can check the version using:

`$java --version`

1) Sock Matching Robot:

To execute the program run these commands from terminal

`$cd src/Q1`

`$javac *.java -d .`

`$java Q1.Main ../../resources/Q1/Input.txt`

- After this program will take the heap from the specified file (given as argument), and you will be prompted to enter number of robotic arms, then press enter.
- The specified file has only a sequence of numbers where each number corresponds to a sock of appropriate color.
- 1, 2, 3 and 4 indicate White, Black, Blue and Grey color sock respectively.

---

2) Data Modification in Distributed System:

To execute the program run these commands from terminal

`$cd src/Q2`

`$javac *.java -d .`

`$java Q2.Main`

After this follow along the instructions from terminal:

Meaning of the commands that appear and steps to follow are:

- "1) Update marks" -> use it to provide the updates you want to make. Since we provide updates in batch format keep on selecting this option to add more updates to the current batch.
- After this asked to enter the name of evaluator which can be only CC/TA1/TA2, if you enter something else program will ask you again to enter right name.
- Next step is to enter the roll no. of student whose marks the specified evaluator wants to update. If roll is wrong or not present in Stud_Info.txt then you will be asked to enter it again.
- Next enter by how much you want to update this student's marks.
- Since we have to show concurrency, we take updates in batches and then execute concurrently so if you want to add another update to this batch select option 1 and follow along.
- If you want to execute all the updates you provided select option 2.
- To exit select option 3.

Here is sample output and input format if CC wants to update 174101035's marks by 5 and TA1 wants to decrease this student's marks by 2 at the same time.

```
------------Choose one of the options:--------------
1) Update marks
2) Perform updates
3) Exit
1
ACTION: Enter evaluator's name (CC/TA1/TA2):
CC
ACTION: Enter Roll number of student whose marks are to be updated.
174101035
```

```
    Current marks of this student are: 109
    ACTION: Enter by how much you want to update the marks (to decrease enter negative number):
    5

    ------------Choose one of the options:--------------
    1) Update marks
    2) Perform updates
    3) Exit
    1
    ACTION: Enter evaluator's name (CC/TA1/TA2):
    TA1
    ACTION: Enter Roll number of student whose marks are to be updated.
    174101035
    Current marks of this student are: 109
    ACTION: Enter by how much you want to update the marks (to decrease enter negative number):
    -2

    ------------Choose one of the options:--------------
    1) Update marks
    2) Perform updates
    3) Exit
    2
    ##############################################
    INFO: CC updated 174101035's marks to 114
    INFO: TA1 cannot 174101035's marks as they are already updated by CC.
    INFO: Stud_Info.txt has been updated.
    INFO: Sorted_Name.txt has been written.
    INFO: Sorted_Roll.txt has been written.
    ##############################################

    ------------Choose one of the options:--------------
    1) Update marks
    2) Perform updates
    3) Exit
    3
```

You can view the Sorted_Roll.txt and Sorted_Name.txt files using (Assuming are in the main directory of submission)

`$cd resources/Q2`

`$cat Sorted_Roll.txt`

`$cat Sorted_Name.txt`

---

3) Calculator for Differently Abled Persons:

- *a) Using only ENTER KEY:*

  Run these commands from terminal

  `$cd src/Q3/a`

  `$javac *.java -d .`

  `$java Q3.a.Main`

  Use ENTER key to select number or function. The two portions (number pad and function pad) will be alternatively highlighted.

- *b) Using ENTER AND SPACE keys:*

  Run these commands from terminal

  `$cd src/Q3/b`

  `$javac *.java -d .`

  `$java Q3.b.Main`

Use ENTER key to select number and SPACE key to select function. The two portions (number pad and function pad) will be simultaneously highlighted.

- For both the calculators use 'Stop' key to evaluate the expression.

- To move on to the next expression first 'Clear' the screen.

- If after pressing 'Stop' you press anything other than 'Clear' it will be neglected.