

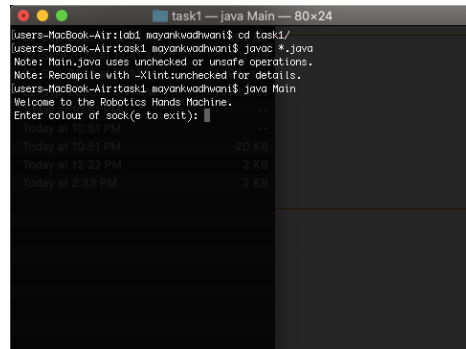
CS-431 PROGRAMMING LANGUAGES LAB

PROJECT README

TASK-1 SOCK MATCHING ROBOT

Instructions to run

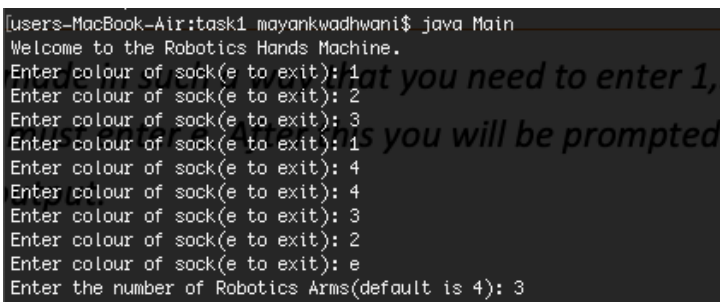
- `cd task1`
- `javac *.java`
- `java Main`



```
task1 — java Main — 80x24
users-MacBook-Air:lab1 mayankwadhwani$ cd task1/
users-MacBook-Air:task1 mayankwadhwani$ javac *.java
Note: Main.java uses unchecked or unsafe operations.
Note: Recompile with -Xlint:unchecked for details.
users-MacBook-Air:task1 mayankwadhwani$ java Main
Welcome to the Robotics Hands Machine.
Enter colour of sock(e to exit): 
Today at 10:51 PM    20 KB
Today at 12:22 PM    2 KB
Today at 2:33 PM     2 KB
```

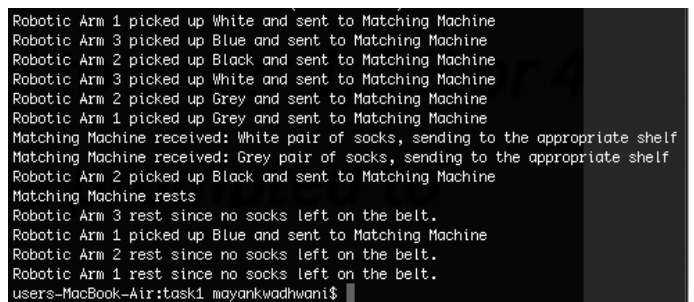
General Instructions

Once the program starts, it asks for inputs of socks (now the input has been made in such a way that you need to enter 1,2,3 or 4 corresponding to the colours white, black, blue and grey. When finished you must enter e. After this you will be prompted to enter the number of robotic arms in the system. After that, you will see the output.



```
users-MacBook-Air:task1 mayankwadhwani$ java Main
Welcome to the Robotics Hands Machine.
Enter colour of sock(e to exit): 1
Enter colour of sock(e to exit): 2
Enter colour of sock(e to exit): 3
Enter colour of sock(e to exit): 1
Enter colour of sock(e to exit): 4
Enter colour of sock(e to exit): 4
Enter colour of sock(e to exit): 3
Enter colour of sock(e to exit): 2
Enter colour of sock(e to exit): e
Enter the number of Robotics Arms(default is 4): 3
```

Figure 2 Giving input



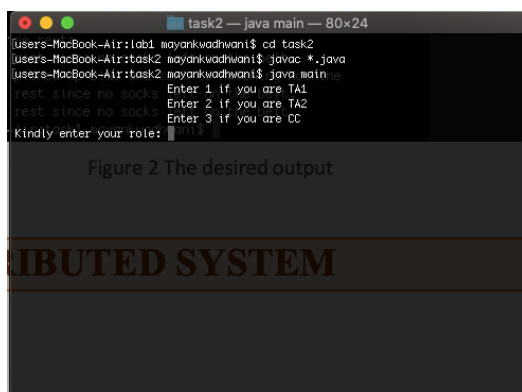
```
Robotic Arm 1 picked up White and sent to Matching Machine
Robotic Arm 3 picked up Blue and sent to Matching Machine
Robotic Arm 2 picked up Black and sent to Matching Machine
Robotic Arm 3 picked up White and sent to Matching Machine
Robotic Arm 2 picked up Grey and sent to Matching Machine
Robotic Arm 1 picked up Grey and sent to Matching Machine
Matching Machine received: White pair of socks, sending to the appropriate shelf
Matching Machine received: Grey pair of socks, sending to the appropriate shelf
Robotic Arm 2 picked up Black and sent to Matching Machine
Matching Machine rests
Robotic Arm 3 rest since no socks left on the belt.
Robotic Arm 1 picked up Blue and sent to Matching Machine
Robotic Arm 2 rest since no socks left on the belt.
Robotic Arm 1 rest since no socks left on the belt.
users-MacBook-Air:task1 mayankwadhwani$
```

Figure 1 The desired output

TASK-2 DATA MODIFICATION IN DISTRIBUTED SYSTEM

Instructions to run

- `cd task2`
- `javac *.java`
- `java main`



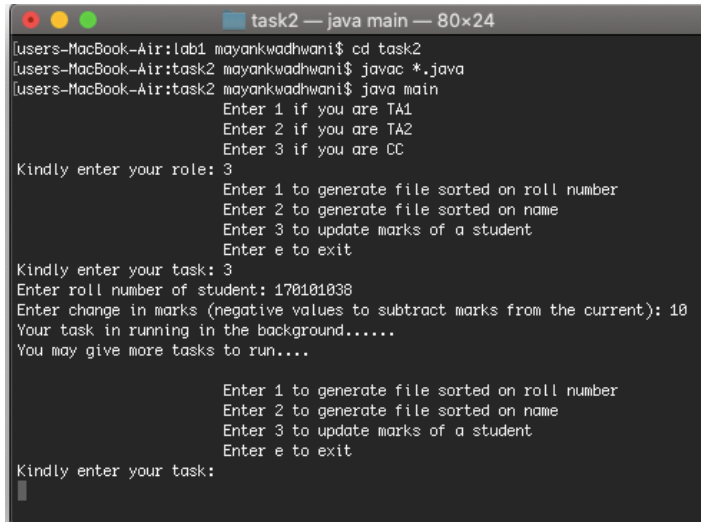
```
task2 — java main — 80x24
users-MacBook-Air:lab1 mayankwadhwani$ cd task2
users-MacBook-Air:task2 mayankwadhwani$ javac *.java
users-MacBook-Air:task2 mayankwadhwani$ java main
rest since no socks: Enter 1 if you are TA1
rest since no socks: Enter 2 if you are TA2
rest since no socks: Enter 3 if you are CC
Kindly enter your role: 
Figure 2 The desired output
DISTRIBUTED SYSTEM
```

General Instructions

Once the program starts, you will be asked to enter your role (like press 1 if you are TA1, etc). Following this, you will be asked to choose the operation that you may wish to perform. Choose the appropriate operation.

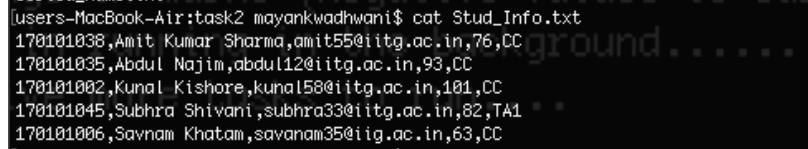
NOTE: Since we are using multithreading here for different operations, we may see interleaved output in the terminal.

Attached screenshots:



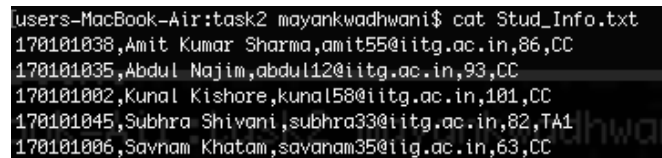
```
task2 — java main — 80x24
[users-MacBook-Air:lab1 mayankwadhwani$ cd task2
[users-MacBook-Air:task2 mayankwadhwani$ javac *.java
[users-MacBook-Air:task2 mayankwadhwani$ java main
Enter 1 if you are TA1
Enter 2 if you are TA2
Enter 3 if you are CC
Kindly enter your role: 3
Enter 1 to generate file sorted on roll number
Enter 2 to generate file sorted on name
Enter 3 to update marks of a student
Enter e to exit
Kindly enter your task: 3
Enter roll number of student: 170101038
Enter change in marks (negative values to subtract marks from the current): 10
Your task is running in the background.....
You may give more tasks to run....
Enter 1 to generate file sorted on roll number
Enter 2 to generate file sorted on name
Enter 3 to update marks of a student
Enter e to exit
Kindly enter your task:
```

Figure 5 Giving input to program



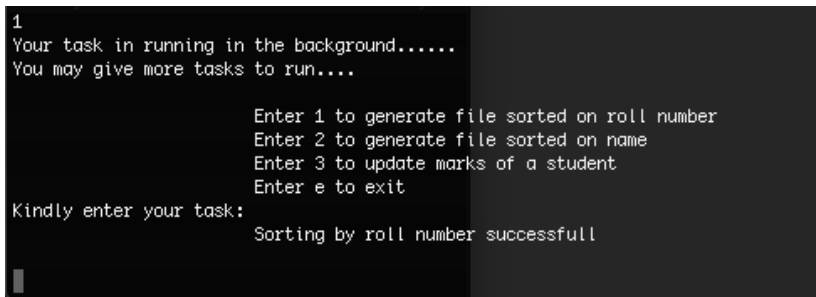
```
[users-MacBook-Air:task2 mayankwadhwani$ cat Stud_Info.txt
170101038,Amit Kumar Sharma,amit55@iitg.ac.in,76,CC
170101035,Abdul Najim,abdul12@iitg.ac.in,93,CC
170101002,Kunal Kishore,kunal58@iitg.ac.in,101,CC
170101045,Subhra Shivani,subhra33@iitg.ac.in,82,TA1
170101006,Savnam Khatam,savnam35@iitg.ac.in,63,CC
```

Figure 4 Contents of file before running in the input in Fig 5



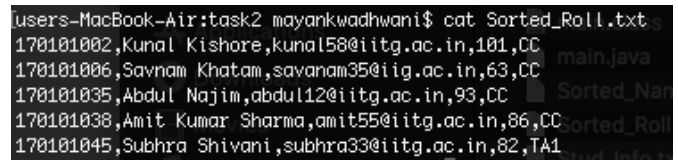
```
[users-MacBook-Air:task2 mayankwadhwani$ cat Stud_Info.txt
170101038,Amit Kumar Sharma,amit55@iitg.ac.in,86,CC
170101035,Abdul Najim,abdul12@iitg.ac.in,93,CC
170101002,Kunal Kishore,kunal58@iitg.ac.in,101,CC
170101045,Subhra Shivani,subhra33@iitg.ac.in,82,TA1
170101006,Savnam Khatam,savnam35@iitg.ac.in,63,CC
```

Figure 3 Contents of the file after running the input in Fig 5



```
1
Your task is running in the background.....
You may give more tasks to run....
Enter 1 to generate file sorted on roll number
Enter 2 to generate file sorted on name
Enter 3 to update marks of a student
Enter e to exit
Kindly enter your task:
Sorting by roll number successfull
```

Figure 6 Generating Sorted File



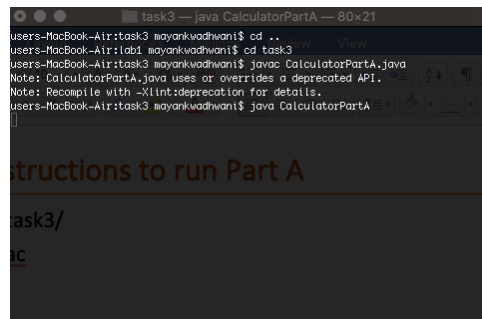
```
[users-MacBook-Air:task2 mayankwadhwani$ cat Sorted_Roll.txt
170101002,Kunal Kishore,kunal58@iitg.ac.in,101,CC
170101006,Savnam Khatam,savnam35@iitg.ac.in,63,CC
170101035,Abdul Najim,abdul12@iitg.ac.in,93,CC
170101038,Amit Kumar Sharma,amit55@iitg.ac.in,86,CC
170101045,Subhra Shivani,subhra33@iitg.ac.in,82,TA1
```

Figure 7 Contents of sorted file by roll

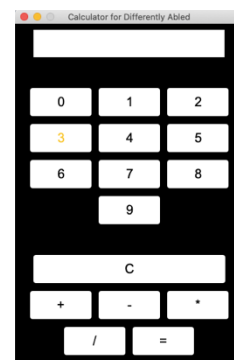
TASK-3 CALCULATOR FOR DIFFERENTLY ABLED

Instructions to run Part A

- cd task3/
- javac CalculatorPartA.java
- java CalculatorPartA



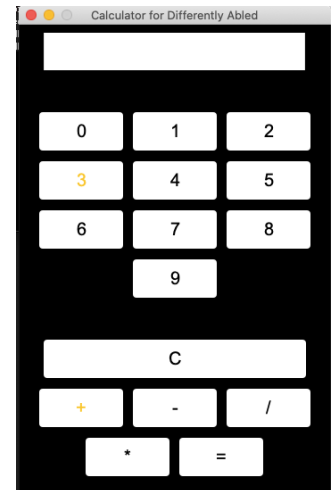
```
task3 — java CalculatorPartA — 80x21
[users-MacBook-Air:task3 mayankwadhwani$ cd ..
[users-MacBook-Air:lab1 mayankwadhwani$ cd task3
[users-MacBook-Air:task3 mayankwadhwani$ javac CalculatorPartA.java
Note: CalculatorPartA.java uses or overrides a deprecated API.
Note: Recompile with -Xlint:deprecation for details.
[users-MacBook-Air:task3 mayankwadhwani$ java CalculatorPartA
```



Instructions to run Part B

- d) `cd task3/`
- e) `javac CalculatorPartB.java`
- f) `java CalculatorPartB`

```
task3 — java CalculatorPartB — 80×24
users-MacBook-Air:lab1 mayankwadhvani$ cd task3/
users-MacBook-Air:task3 mayankwadhvani$ javac CalculatorPartB.java
Note: CalculatorPartB.java uses or overrides a deprecated API.
Note: Recompile with -Xlint:deprecation for details.
users-MacBook-Air:task3 mayankwadhvani$ java CalculatorPartB
```



General Instructions

For both the parts, we do as mentioned in the question. Wait for the desired number or operator, press spacebar or enter depending on the part.

Here are screenshots showing working of part B for 16+17.

