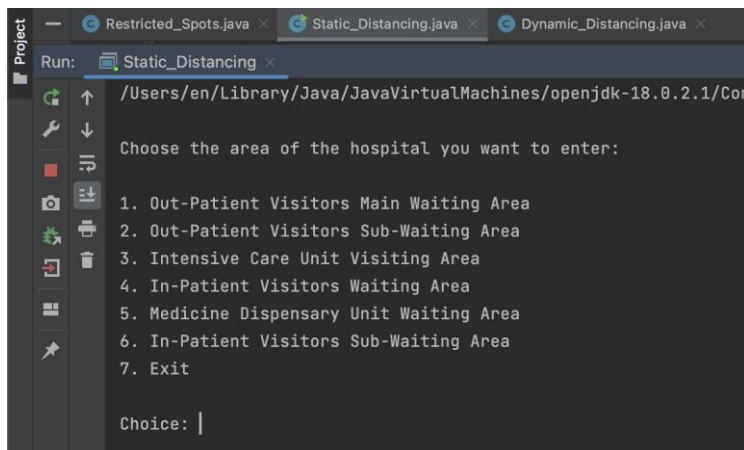


## COMP 1029 – Programming Paradigms

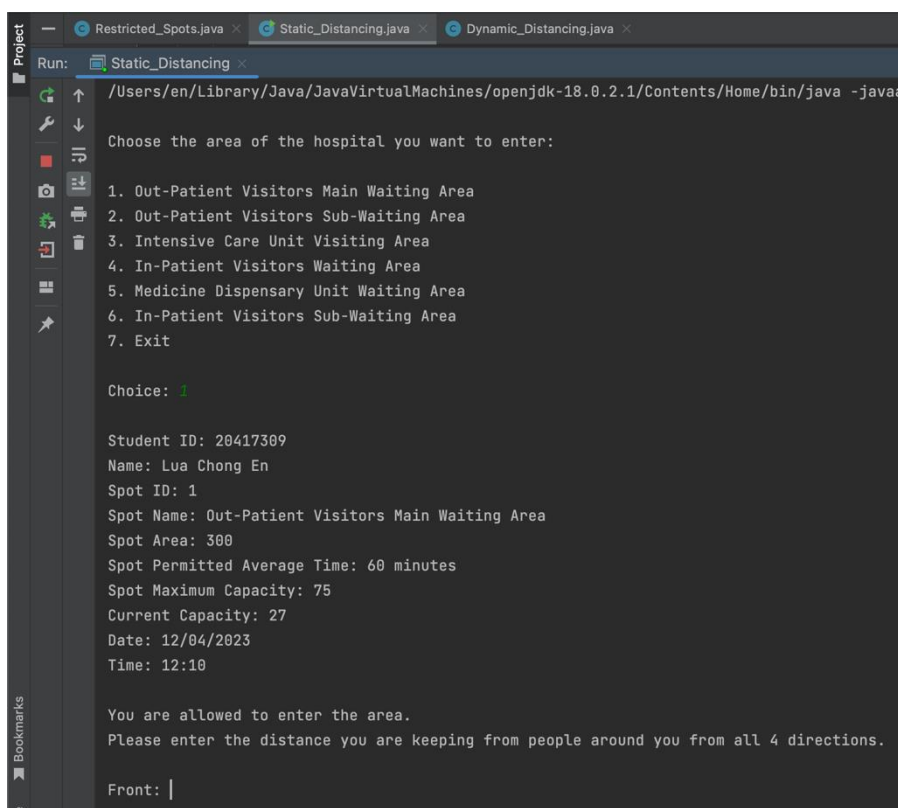
Name: Lua Chong En

Student ID: 20417309

### Screenshots of Output

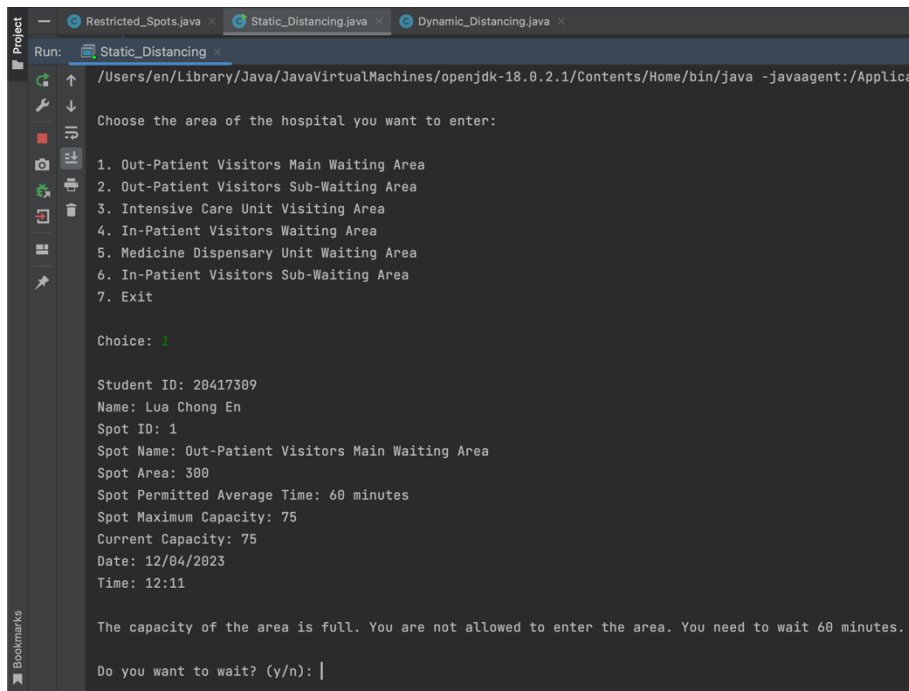


Screenshot 1: After starting the program, the 7 choices of the switch will be printed and beside Choice, the user will be prompted for their input.



Screenshot 2: After the user enters their choice, the properties of the Area will be printed alongside current date, time, and Student ID and Name. The property of Area is Spot ID, Spot Name, Spot Area, Spot Permitted Average Time, Spot Maximum Capacity and Current Capacity. The current capacity number is generated from the random number generator

and because it is lower than the Spot Maximum Capacity, the user is allowed to enter. The user will then be prompted to enter the distances of people around them from 4 directions.



```
Run: Static_Distancing
/Users/en/Library/Java/JavaVirtualMachines/openjdk-18.0.2.1/Contents/Home/bin/java -javaagent:/Applica

Choose the area of the hospital you want to enter:

1. Out-Patient Visitors Main Waiting Area
2. Out-Patient Visitors Sub-Waiting Area
3. Intensive Care Unit Visiting Area
4. In-Patient Visitors Waiting Area
5. Medicine Dispensary Unit Waiting Area
6. In-Patient Visitors Sub-Waiting Area
7. Exit

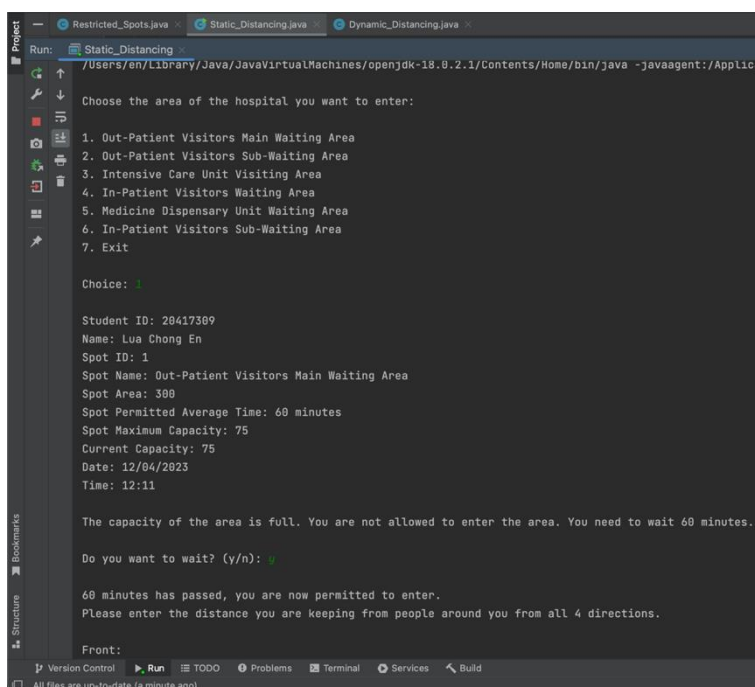
Choice: 1

Student ID: 20417309
Name: Lua Chong En
Spot ID: 1
Spot Name: Out-Patient Visitors Main Waiting Area
Spot Area: 300
Spot Permitted Average Time: 60 minutes
Spot Maximum Capacity: 75
Current Capacity: 75
Date: 12/04/2023
Time: 12:11

The capacity of the area is full. You are not allowed to enter the area. You need to wait 60 minutes.

Do you want to wait? (y/n): |
```

Screenshot 3: However, given that the Current Capacity number which is randomly generated is the same as the Spot Maximum Capacity, it means that the Area is full, and the user will not be allowed to enter. Instead, the user will be asked to wait the Spot Permitted Average Time, the user will be prompted for their response.



```
Run: Static_Distancing
/Users/en/Library/Java/JavaVirtualMachines/openjdk-18.0.2.1/Contents/Home/bin/java -javaagent:/Applica

Choose the area of the hospital you want to enter:

1. Out-Patient Visitors Main Waiting Area
2. Out-Patient Visitors Sub-Waiting Area
3. Intensive Care Unit Visiting Area
4. In-Patient Visitors Waiting Area
5. Medicine Dispensary Unit Waiting Area
6. In-Patient Visitors Sub-Waiting Area
7. Exit

Choice: 1

Student ID: 20417309
Name: Lua Chong En
Spot ID: 1
Spot Name: Out-Patient Visitors Main Waiting Area
Spot Area: 300
Spot Permitted Average Time: 60 minutes
Spot Maximum Capacity: 75
Current Capacity: 75
Date: 12/04/2023
Time: 12:11

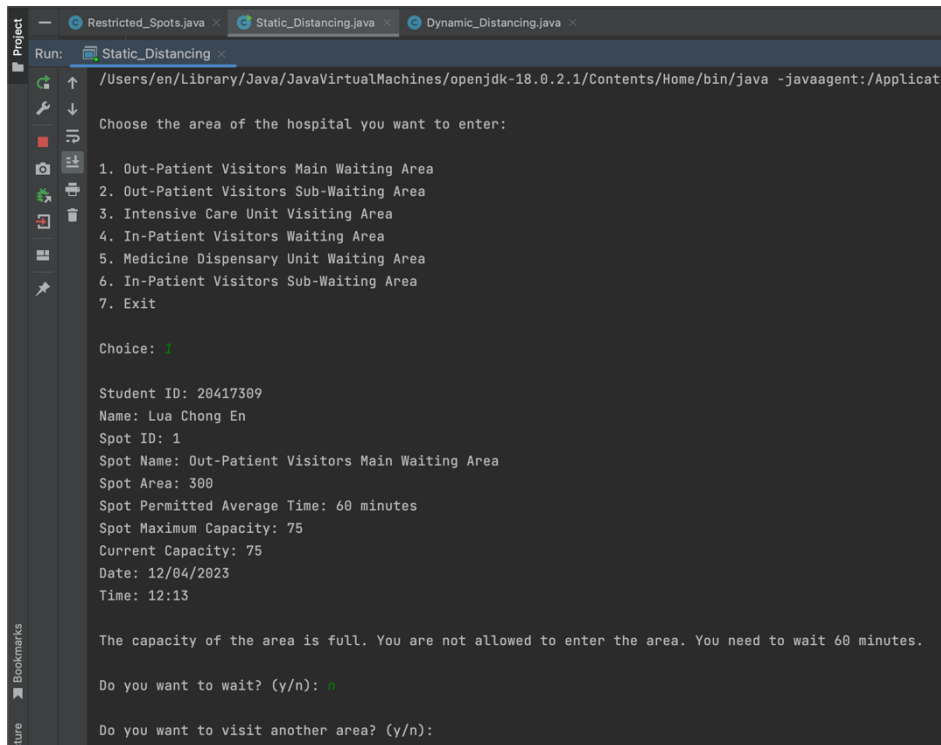
The capacity of the area is full. You are not allowed to enter the area. You need to wait 60 minutes.

Do you want to wait? (y/n): y

60 minutes has passed, you are now permitted to enter.
Please enter the distance you are keeping from people around you from all 4 directions.

Front:
```

Screenshot 4: If the user types 'y' or 'Y' which means yes and they want to wait, the system will assume that the Spot Permitted Average Time has passed, and the user will be permitted to enter. Then the system will ask the user to enter the distances of people around them from 4 directions.



```
Project
  Restricted_Spots.java
  Static_Distancing.java
  Dynamic_Distancing.java

Run: Static_Distancing
/Users/en/Library/Java/JavaVirtualMachines/openjdk-18.0.2.1/Contents/Home/bin/java -javaagent:/Applicat

Choose the area of the hospital you want to enter:

1. Out-Patient Visitors Main Waiting Area
2. Out-Patient Visitors Sub-Waiting Area
3. Intensive Care Unit Visiting Area
4. In-Patient Visitors Waiting Area
5. Medicine Dispensary Unit Waiting Area
6. In-Patient Visitors Sub-Waiting Area
7. Exit

Choice: 1

Student ID: 20417309
Name: Lua Chong En
Spot ID: 1
Spot Name: Out-Patient Visitors Main Waiting Area
Spot Area: 300
Spot Permitted Average Time: 60 minutes
Spot Maximum Capacity: 75
Current Capacity: 75
Date: 12/04/2023
Time: 12:13

The capacity of the area is full. You are not allowed to enter the area. You need to wait 60 minutes.

Do you want to wait? (y/n): y

Do you want to visit another area? (y/n):
```

Screenshot 5: However, If the user does not choose to wait and types in 'n', then the user will not enter the area but will be prompted again whether they want to visit another area in the hospital. Entering 'y' or 'Y' will display the 7 choices again while entering 'n' will exit the program.

```
Run: Static_Distancing
Spot Area: 380
Spot Permitted Average Time: 60 minutes
Spot Maximum Capacity: 75
Current Capacity: 27
Date: 12/04/2023
Time: 12:31

You are allowed to enter the area.
Please enter the distance you are keeping from people around you from all 4 directions.

Front: 1
Back: 1
Left: 1
Right: 1

Dynamic Distancing instructions:
- You are practicing Dynamic Distancing Rules.

CONTACT STATUS: NORMAL
You are safe in Dynamic Distancing!.

Contact Rules: 1) High Risk: At-least one person is present less than 0.5 meters from you.
               2) Casual Contact: At-least one person is present less than 1 meter from you but greater than 0.5 meters.
               3) Normal: Nobody within 1 meter of you.

MASK RULES: You are free to choose to wear a mask or not.

Hospital Appointment: Since you are deemed as Normal Status, you don't need to book an appointment in the hospital

Do you want to visit another area? (y/n):
```

Screenshot 6: If the user enters 1 or greater as the distance for all 4 directions, then their Contact Status will be deemed as Normal and 'You are safe in Dynamic Distancing' will be printed. The relevant contact rules are also displayed, and (extraordinary features) Mask Rules will be displayed and because the user's contact status is Normal then the user can choose to wear a mask or not. Then because the user's contact status is Normal, no hospital appointment will be required. The user will then be prompted if they want to enter another area of the hospital.

```
Run: Static_Distancing
Spot Maximum Capacity: 75
Current Capacity: 10
Date: 12/04/2023
Time: 12:31

You are allowed to enter the area.
Please enter the distance you are keeping from people around you from all 4 directions.

Front: 0.5
Back: 0.7
Left: 0.5
Right: 1

Dynamic Distancing instructions:
- Please move away from the FRONT by 0.4 meters.
- Please move away from the BACK by 0.3 meters.
- Please move away from the LEFT by 0.5 meters.

CONTACT STATUS: CASUAL CONTACT
Please continue to follow the Dynamic Distancing Rules.

Contact Rules: 1) High Risk: At-least one person is present less than 0.5 meters from you.
                2) Casual Contact: At-least one person is present less than 1 meter from you but greater than 0.5 meters.
                3) Normal: Nobody within 1 meter of you.

MASK RULES: Please wear a medical mask.

Hospital Appointment: Since you are deemed as Close Contact, we suggest you book an appointment in the hospital to check for any possible symptoms.

Do you want to book an appointment? (y/n):
```

Screenshot 7: If the user enters 0.5 or greater but less than 1 meter as the distance for all 4 directions, then their Contact Status will be deemed as Casual Contact and 'Please continue to follow the Dynamic Distancing Rules' will be printed. The relevant contact rules are also displayed, and (extraordinary features) Mask Rules will be displayed and because the user's contact status is Casual Contact then the user will be asked to wear a medical mask. Then because the user's contact status is Casual Contact, the program will suggest the user to book a hospital appointment to check for any symptoms. If the user enters 'y' or 'Y' (SCREENSHOT BELOW), a random date will be generated, and it'll be the appointment date for the user. If the user enters 'n' then no appointment will be created. The user will then be prompted if they want to enter another area of the hospital.

```
Do you want to book an appointment? (y/n): y
Appointment date: 2023-APRIL-28

Do you want to visit another area? (y/n):
```

```
Run: Static_Distancing
Current Capacity: 50
Date: 12/04/2023
Time: 12:31

You are allowed to enter the area.
Please enter the distance you are keeping from people around you from all 4 directions.

Front: 0.5
Back: 0.5
Left: 1
Right: 0.2

Dynamic Distancing instructions:
- Please move away from the FRONT by 0.8 meters.
- Please move away from the BACK by 0.7 meters.
- Please move away from the RIGHT by 0.2 meters.

CONTACT STATUS: HIGH RISK
Please continue to follow the Dynamic Distancing Rules.

Contact Rules: 1) High Risk: At-least one person is present less than 0.5 meters from you.
                2) Casual Contact: At-least one person is present less than 1 meter from you but greater than 0.5 meters.
                3) Normal: Nobody within 1 meter of you.

MASK RULES: Please wear a N95 Specific mask.

Hospital Appointment: Since you are deemed as High Risk, we insist that you book an appointment in the hospital to check for any possible symptoms
Appointment date: 2023-APRIL-20

Do you want to visit another area? (y/n): |
```

Screenshot 8: If the user enters 0.5 or lower as the distance for all 4 directions, then their Contact Status will be deemed as High Risk and 'Please continue to follow the Dynamic Distancing Rules' will be printed. The relevant contact rules are also displayed, and (extraordinary features) Mask Rules will be displayed and because the user's contact status is High Risk then the user will be asked to wear a N95 mask. Then because the user's contact status is High Risk, the program will automatically create a random appointment date for the user. The user will then be prompted if they want to enter another area of the hospital.

**Remark:** All these functions work for all 6 locations in the hospital

```
Run: Static_Distancing
/Users/en/Library/Java/JavaVirtualMachines/openjdk-18.0.2.1/Contents/Home/bin/jav

Choose the area of the hospital you want to enter:

1. Out-Patient Visitors Main Waiting Area
2. Out-Patient Visitors Sub-Waiting Area
3. Intensive Care Unit Visiting Area
4. In-Patient Visitors Waiting Area
5. Medicine Dispensary Unit Waiting Area
6. In-Patient Visitors Sub-Waiting Area
7. Exit

Choice: 7

Process finished with exit code 0
```

Screenshot 9: If the user enters 7, the program will exit.

```
Project
Run: Static_Distancing x
/Users/en/Library/Java/JavaVirtualMachines/openjdk-18.0.2.1/Contents/Home/bin/java

Choose the area of the hospital you want to enter:

1. Out-Patient Visitors Main Waiting Area
2. Out-Patient Visitors Sub-Waiting Area
3. Intensive Care Unit Visiting Area
4. In-Patient Visitors Waiting Area
5. Medicine Dispensary Unit Waiting Area
6. In-Patient Visitors Sub-Waiting Area
7. Exit

Choice: 8

Please enter a valid number.

Do you want to visit another area? (y/n): |
```

Screenshot 10: If the user enters a number that is not from 1-7, then because of the default case in the switch, the program will display 'Please enter a valid number'. And then prompt the user if they want to visit another area of the hospital.

```
Run: Static_Distancing x
/Users/en/Library/Java/JavaVirtualMachines/openjdk-18.0.2.1/Contents/Home/bin/java

Choose the area of the hospital you want to enter:

1. Out-Patient Visitors Main Waiting Area
2. Out-Patient Visitors Sub-Waiting Area
3. Intensive Care Unit Visiting Area
4. In-Patient Visitors Waiting Area
5. Medicine Dispensary Unit Waiting Area
6. In-Patient Visitors Sub-Waiting Area
7. Exit

Choice: 8

Please enter a valid number.

Do you want to visit another area? (y/n): n

Thank you. Good Bye.

Process finished with exit code 0
```

Screenshot 11: Given at any point the user enters 'n' for when they are prompted to visit another area, the program will finish and end and 'Thank you. Goodbye' will be printed.



```
Run: Static_Distancing x
Current Capacity: 25
Date: 14/04/2023
Time: 12:55

You are allowed to enter the area.
Please enter the distance you are keeping from people around you from all 4 directions.

Front: 1
Back: 1
Left: 1
Right: 1

Dynamic Distancing instructions:
- You are practicing Dynamic Distancing Rules.

CONTACT STATUS: NORMAL
You are safe in Dynamic Distancing!.

Contact Rules: 1) High Risk: At-least one person is present less than 0.5 meters from you.
                2) Casual Contact: At-least one person is present less than 1 meter from you but greater than 0.5 meters.
                3) Normal: Nobody within 1 meter of you.

MASK RULES: You are free to choose to wear a mask or not.

Hospital Appointment: Since you are deemed as Normal Status, you don't need to book an appointment in the hospital

Do you want to visit another area? (y/n): y

Choose the area of the hospital you want to enter:

1. Out-Patient Visitors Main Waiting Area
2. Out-Patient Visitors Sub-Waiting Area
3. Intensive Care Unit Visiting Area
4. In-Patient Visitors Waiting Area
5. Medicine Dispensary Unit Waiting Area
6. In-Patient Visitors Sub-Waiting Area
7. Exit

Choice: |
```

Screenshot 12: Given at any point the user enters 'y' or 'Y' for when they are prompted to visit another area, the 7 choices will be printed, and the user can choose to enter another area of the hospital.