C++ Programming
Hospital System Project

Mostafa S. Ibrahim
Teaching, Training and Coaching since more than a decade!

Artificial Intelligence & Computer Vision Researcher
PhD from Simon Fraser University - Canada
Bachelor / Msc from Cairo University - Egypt
Ex-(Software Engineer / ICPC World Finalist)

Hospital System

- Implement the following system for a hospital
- There are 20 different specialization (e.g. Children, Surgery, etc)
- For each specialization, there are only 5 available spots [queue]
- Adding a patient
  - Read the requested specialization [1-20].
  - Read his name and status (0 = regular, 1 urgent)
  - If 5 patients exist, apologize and don't accept.
  - If the user is regular, add in end of queue. Otherwise, add in Begin
- Print patients, for the specializations that have waiting patients
- Dr pickup a patient
  - Read the requested specialization. If no patients, inform the doctor
  - Otherwise, ask the patient to go with the Dr. Remove from the queue

Hospital System

```
Enter your choice:
1) Add new patient
2) Print all patients
3) Get next patient
4) Exit
1
Enter specialization, name, statis: 15 mostafa 0

Enter your choice:
1) Add new patient
2) Print all patients
3) Get next patient
4) Exit
1
Enter specialization, name, statis: 15 asmaa 0

Enter your choice:
1) Add new patient
2) Print all patients
3) Get next patient
4) Exit
1
Enter specialization, name, statis: 15 belal 1
```

```
Enter your choice:
1) Add new patient
2) Print all patients
3) Get next patient
4) Exit
2
*****************************
There are 3 patients in specialization 15
belal urgent
mostafa regular
asmaa regular


Enter your choice:
1) Add new patient
2) Print all patients
3) Get next patient
4) Exit
1
Enter specialization, name, statis: 15 ziad 1

Enter your choice:
1) Add new patient
2) Print all patients
3) Get next patient
4) Exit
2
*****************************
There are 4 patients in specialization 15
ziad urgent
belal urgent
mostafa regular
asmaa regular
```

Hospital System

```
Enter your choice:
1) Add new patient
2) Print all patients
3) Get next patient
4) Exit
1
Enter specialization, name, statis: 15 safaa 0

Enter your choice:
1) Add new patient
2) Print all patients
3) Get next patient
4) Exit
1
Enter specialization, name, statis: 15 ashraf 0
Sorry we can't add more patients for this specialization

Enter your choice:
1) Add new patient
2) Print all patients
3) Get next patient
4) Exit
2
****************************
There are 5 patients in specialization 15
ziad urgent
belal urgent
mostafa regular
asmaa regular
safaa regular
```

```
Enter your choice:
1) Add new patient
2) Print all patients
3) Get next patient
4) Exit
3
Enter specialization: 10
No patients at the moment. Have rest, Dr

Enter your choice:
1) Add new patient
2) Print all patients
3) Get next patient
4) Exit
3
Enter specialization: 15
ziad please go with the Dr

Enter your choice:
1) Add new patient
2) Print all patients
3) Get next patient
4) Exit
2
*****************************
There are 4 patients in specialization 15
belal urgent
mostafa regular
asmaa regular
safaa regular
```

Hospital System

```
Enter your choice:
1) Add new patient
2) Print all patients
3) Get next patient
4) Exit
1
Enter specialization, name, statis: 7 soha 1

Enter your choice:
1) Add new patient
2) Print all patients
3) Get next patient
4) Exit
2
*****************************
There are 1 patients in specialization 7
soha urgent

There are 4 patients in specialization 15
belal urgent
mostafa regular
asmaa regular
safaa regular


Enter your choice:
1) Add new patient
2) Print all patients
3) Get next patient
4) Exit
```

```
Enter your choice:
1) Add new patient
2) Print all patients
3) Get next patient
4) Exit
1
Enter specialization, name, statis: 15 amal 1

Enter your choice:
1) Add new patient
2) Print all patients
3) Get next patient
4) Exit
3
Enter specialization: 7
soha please go with the Dr

Enter your choice:
1) Add new patient
2) Print all patients
3) Get next patient
4) Exit
2
*****************************
There are 5 patients in specialization 15
amal urgent
belal urgent
mostafa regular
asmaa regular
safaa regular
```

"Acquire knowledge and impart it to the people."

"Seek knowledge from the Cradle to the Grave."