

King Saud University College of Computer and Information Systems Department of Computer Science

CSC 113: Java Programming-II



Tutorial: Relationship between Classes (Aggregation)

Create the classes along with the functionality given in the following UML Diagram. To understand the problem, please refer to the description given after the diagram.

Hospital		Patient
-hospitalName:String	1 * -arrPatient	-patientId:int -name:String -disease:String
<pre>+Hospital(size:int,hospitalName:String) +addPatient(p:Patient):Boolean +countPatients(d: String):int +getPatients(d: String):Patient[] +getOldestPatient(d: String):Patient +getTyphoidPatients(int age):Patient[]</pre>		<pre>-age:int +Patient(id:int,name:String,dis:String, age:int) +getName():String +getPatientId():int +getDisease():String +getAge():int +displayPatientInfo()</pre>

Patient Class:

o Attributes:

- patientId: unique id of the patient.
- *name*: the name of the patient.
- *disease*: The disease of the patient.

 \circ Methods:

- Patient(id:int,name: string, disease: String, age: int): constructor
- *displayPatientinfo()*: this method displays all the attributes of the patient.
- Getters



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Hospital Class:

 \circ Attributes:

• *hospitalName*: name of the hospital.

o Methods:

- *Hospital(size:int, name:String)*: constructor
- *addPatient(p:Patient):* this method adds a patient to the hospital. It returns true if the *Patient p* is added; false otherwise.
- *countPatient(d:String)*: this method returns the number of patients in the hospital with disease *d*.
- *getPatients(d:String):* this method returns an array containing all patients in the hospital with disease *d*.
- *getOldestPatient(d:String):* this method returns the oldest patient of the hospital with disease *d*.
- *getTyphoidPatients(age:int):* this method returns an array containing all patients in the hospital with disease "Typhoid" and age greater than *age*.

Write java code for classes Patient and Hospital.