Create a class template *Hospital.* It should contain the following properties/attributes

* *hospital\_id* that stores the id of the hospital. This can be an alphanumeric type value.
* *hospital\_name* of type string to store the name of the hospital.
* *hospital\_rating* of type string to store the rating of the hospital. The rating must be one of the following values **only** (Good, Decent, Average, Poor).
* A constructor that accepts all the above parameters to initialize the object.
* A constructor that copies attributes of another *hospital* object to create a new

object.

* Add a suitable mechanism to display all attributes of a *Hospital type* object (string stream representation using << operator overload or dedicated member function to display all properties of an object).

All attributes of this class need to be accessible from only within this class and its children. Ensure appropriate mechanism for the same. Add relevant member methods to enable read/write access to properties.

Create a class *Doctor*. It should inherit from the *Hospital* class and contain the following attributes

* *doctor\_id* that stores the id of the doctor. This can be either a numeric or string.
* *doctor\_name* of type string to store the name of the doctor.
* *doctor\_speciality* of type string that stores speciality of the doctor.
* registered\_hospital\_name of type string that stores the name of the hospital where the doctor practices.
* *doctor\_fees* of type float that describes fees taken by the doctor for a session of consultancy.
* A member method *CalculateTax* that calculates Tax as 20% of consultancy fees.
* A constructor that accepts all the above parameters to initialize the object.

Add a suitable mechanism to represent all attributes of a *Hospital type* object (string stream representation using << operator overload or dedicated member function to display all properties of an object).

In the main function or separate top-level functions, do the following:

* Accept a value n from the user to check how many hospital details will be provided.
* Accept hospital\_id,hospital\_name,hospital\_rating for each hospital **exactly in this specified order.**
* All objects need to be stored in an array called *hospitals\_arr.*
* Accept a value n from the user to check the number of doctors whose details will be accepted.
* Take input for *doctor\_id*,*doctor\_name*,*doctor\_speciality*,*registered\_hospital\_name*, *doctor\_fees* for each hospital **exactly in this specified order.**
* Calculate and print tax for the doctor with the highest consultancy fees among all.
* Accept a *doctor\_name* from the user. Find the hospital where this doctor practices.
* Accept a *rating* from the user. Find hospitals with this matching rating.

Notes:

1. Follow best coding practices to solve this coding problem.
2. Add comments where necessary.
3. You will be evaluated on the basis of correctness of code, completion of requirements, readability among other parameters.