Database design project requirements document

This project mainly investigates database related knowledge, so the task design will be slightly different from the real system.

**1、 Project Title:**

Information management system of covid-19 hospital under new crown epidemic situation.

**2、 System overview:**

After the outbreak of novel coronavirus, many hospitals have devoted themselves to the treatment of new crown patients to alleviate the pressure of domestic anti epidemic. In this special case, in order to better manage the new crown patients and medical staff, it is necessary to design an information management system for patients and medical staff in a hospital, so as to realize the unified management of the new crown patients and medical staff information (during the epidemic period, the hospital temporarily does not accept patients with other diseases, and does not consider the cost of treatment) ）It mainly includes the functions of adding, deleting, modifying and querying the information of all patients and medical staff, as well as the allocation of medical staff, the management of ward area, and the change of patient ward area.

**3、 System workflow:**

A novel coronavirus is diagnosed in the hospital, and the nucleic acid test results will be obtained. The nucleic acid test sheet should include the basic information, test results, test date and condition rating of patients. The condition rating is divided into mild, severe and critical. The hospital has set up separate treatment areas for patients with different condition ratings. Emergency nurses need to import patient information (including personal basic information, condition rating, etc.) when they are admitted to patients. According to the patient's condition rating, the system will automatically divide the patients into the corresponding treatment area. If the conditions of the treatment area allow new patients to transfer in (nurses and beds are available), the system will automatically assign nurses and beds in the corresponding treatment area to the patients (each bed is equipped with a separate curtain, regardless of the patient's gender). If the nurses or beds in the treatment area are not available, they can not receive new patients. The patients to be transferred need to wait for transfer in the isolation area. During this period, the hospital will keep the basic information of the patients, so as to inform the patients to come to the hospital for treatment when conditions permit.

In the process of treatment, nurses need to record the patient's status (including body temperature, existing symptoms, life status, nucleic acid test results, etc.) every day. The life status includes: discharged from hospital, treated in hospital or died of illness. Doctors can evaluate the patient's condition, evaluate the patient's life state, and change the patient's current condition rating. In addition, the change of the patient's condition rating should lead to the change of the patient's treatment area. The patient's attending doctor and head nurse will also be changed to the attending doctor and head nurse who are responsible for transferring to the area. Nurses and beds will be re designated by the system. If the current conditions of the treatment area to be transferred are not allowed to be transferred, the patient's condition rating will change, but the treatment area will remain unchanged. The subsequent system can query such patients, so as to help them transfer when the conditions of the treatment area to be transferred are met. If a treatment area meets the transfer condition again, the system will first select the patients to be transferred from the patients in the isolation area. If there are no patients to be transferred to the treatment area in the isolation area, the system will select the corresponding patients from the patients whose disease grade does not correspond to the treatment area. After selecting the patients to be transferred, the system will transfer them to the area and send a prompt to the head nurse of the area.

For mild patients, if the temperature is normal for three consecutive days (below 37.3 ℃) and the nucleic acid test results are negative for two consecutive times (the interval between the two tests is at least 24 hours), the patient can recover and be discharged. When the patient meets the discharge conditions, the system will automatically prompt the attending doctor. The attending doctor can also query the patients who can be discharged and their information, and allow the patients to be discharged.

**4、 System user description:**

Users include three roles: attending doctor, head nurse and nurse. Different users have different permissions in the system. Nurses are divided into two types: emergency nurses and ward nurses. All users can modify their own information, including but not limited to login password, personal information, etc.

**The following describes the special permissions of different users:**

Attending doctor: each treatment area has an attending doctor who can manage the information of head nurse, nurse and patient. The attending doctor can view the patient information in the current treatment area and support the screening of different conditions (for example, according to whether the discharge conditions are met, whether to transfer to other treatment areas, patient's life status, etc.); the attending doctor can view the head nurse and ward nurse information in the current treatment area, as well as the patients in charge of ward nurses; the patient's condition rating can be modified; the patient's condition rating can be modified The doctor in charge of the mild treatment area can decide whether the patient can recover and leave the hospital according to the patient's condition.

Head nurse: each treatment area has a head nurse who can manage the information of ward nurses, patients and beds. The head nurse can view the patient information in the current treatment area and support the screening of different conditions (for example, according to whether the discharge conditions are met, whether to transfer to other treatment areas, patient's life status, etc.); the head nurse can view the ward nurse information in the treatment area and the patient information that the ward nurse is responsible for; the head nurse can add or delete the ward nurse information in the area; the head nurse can view the treatment area The bed information of the area and the patient information of the bed (if no patient is arranged, the bed status is empty).

Emergency nurse: there are several emergency nurses in the hospital, who are responsible for the admission and treatment of patients with diagnosis. Emergency nurses can register the basic information of patients and their disease grades in the system; they can view the information of patients in each area and support the screening of different conditions (for example, according to the treatment area, whether to wait in the isolation area, patient's disease rating, patient's life status, etc.).

Ward nurse: there are multiple ward nurses in each treatment area, responsible for the treatment of patients and daily information registration (including body temperature, existing symptoms, life status, nucleic acid test results, etc.). Ward nurses can view the information of the patients they are responsible for and support the screening of different conditions (such as whether they can be discharged or not, life status, etc.).

**5、 Correspondence:**

There are several emergency nurses in the hospital, one attending doctor and one head nurse in each of the three treatment areas, but there can be many ward nurses. Each head nurse is responsible for all ward nurses in the area. A ward nurse in the mild treatment area can take care of up to three patients, a ward nurse in the severe treatment area can take care of up to two patients, and a ward nurse in the critical treatment area can take care of up to one patient. There are 4 beds, 2 beds and 1 bed respectively in one ward of mild, severe and critical treatment areas.

**6、 Demo:**

It is not necessary to use the web and do not make unnecessary requirements for the interface. It is not necessary to manually input commands in the database to query. In the implementation, you can use some frameworks that support SQL. In the final test, the operation should be normal and logical.

**7、 Submission requirements**:

Please submit ER diagram, database table structure description, index definition description, SQL statement description of core function, stored procedure and trigger description (if any) and source code.