**UNNC-CMS**

**System Requirements Specification (SRS)**

**Version 0.7**

**Produced for:**

UNNC students and staffs

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Overview

This Software Requirements Specification Document (SRS) mainly focuses on the development of a phone app for the system, UNNC-CMS, with functionalities of managing clinic operations. We are going to develop a software which allow users to plan or manage tasks, such as making an appointment in advance for patients, collecting patients’ physical information and manipulating historical measurements for doctors or nurses. It will take advantage of the mobile devices to radically improve the efficiency of dealing with clinical stuff.

The **patient** objectives are to:

* Provide them with an effective way to tackle problems mainly related to both physical and mental health.
* Enable them to easily handle appointments with doctors.
* Enable them to have a more convenient experience of seeking medical advice.

The **doctor** objectives are to:

* Provide them with abundant physical statistics of patients which may be useful for illness prevention and manipulation.
* Enable them to easily and effectively manage patients’ measurements.
* Provide them with an automatic way of generating prescriptions or hospital referrals by inputting patients’ physical information.

The software process model we are going to use is Incremental Development Model. This model could be suitable for UNNC-CMS since it could be much more flexible compared to waterfall model or V-model by breaking up the big problem into fragmentary parts. While batching different parts, problems could be found and resolved as early as possible. Moreover, the estimated time for the whole system is four months which is abundant for system development. Thus, Incremental Development Model is a good choice which allow the team to update the system as well as possible.

The role of each of our members is that Zhicheng SONG is the team leader in charge of the arrangement of tasks and drawing class diagram; Xiangyu WANG, Zhipei LIU and Xiao Liang are in charge of requirement specification; Shihong LIU is in charge of drawing use case diagram and writing overview including objectives and model declaration.

Revision History

|  |  |  |  |
| --- | --- | --- | --- |
| **Date** | **Version** | **Description** | **Author** |
| 4/8/2019 | 0.1 | Initial Draft including Overview, which contains objective, what we are going to do and the model we want to use. | Shihong LIU  Zhipei LIU  Xiangyu WANG  Zhicheng SONG |
| 4/9/2019 | 0.2 | Updated draft including objectives. | Shihong LIU |
| 4/10/2019 | 0.3 | Added the use case diagram.  Modified some parts of objectives. | Shihong LIU |
| 4/11/2019 | 0.4 | Identified the user requirements and system requirement. | Zhipei LIU  Xiangyu WANG  Xiao LIANG |
| 4/12/2019 | 0.5 | Added user requirements and system requirement.  Modified some parts of use case diagram. | Zhipei LIU  Xiangyu WANG |
| 4/13/2019 | 0.6 | Identified the methods.  Modified some parts of system requirements.  Added class diagrams. | ALL |
| 4/14/2019 | 0.7 | Final Draft | ALL |

Table of Contents

Actor/Use Case Form

|  |  |
| --- | --- |
| **Actor** | **Action** |
| patients | Book appointments |
| Nurses and doctors | Access to the system to view appointments |
| Nurses and doctors | record patients’ data |
| Nurses and doctors | write prescriptions |
| Nurses and doctors | make referrals to external hospitals |
| patients | fill a form |
| patients | receives a confirmation message |
| patient | modify or cancel an appointment |
| nurse | search for all appointments |
| nurse | search the system for a specific patient |

Use Case Diagram

图片包含 文字

描述已自动生成

User Requirement

**Functional Requirement:**

1. Patients shall book their appointments (This app is focus on booking the appointments for the patient)
2. Patients shall confirm if they submit the appointments successfully. (In order to avoid the failed appointment)
3. Patients shall modify or cancel an appointment before the original date. (Patients have some irresistible reason and they need one function to modify the appointment)
4. Nurses and doctors shall have access to the system to view the patients’ appointments. (Nurse and doctors need to realize the appointment by the system and settle it)
5. Nurses shall record patients’ data. (In order to understand the patients’ case better, there is a function to add the patient’s data into the system)
6. Nurses shall generate reports such as hospital referrals. (Generate reports on the system is enable them to check and view easily)
7. Doctors shall write a prescription and hospital referrals. (It is more convenient for doctors and nurses to give the better treatment to patients)

**Non-functional Requirement:**

1. Patients should log in to the system using a unique Username (University-ID) and password. (Prevent the others from using this account and it is convenient for the doctor to view the specific patient data)
2. Patients should fill a form including the appointing date, first name, last name, status and the reason of the appointment. (Completed information can help system manage the data.)
3. Patients should confirm if they submit successfully according to receiving a confirmation message. (In order to avoid the failed appointment)
4. Patients should modify or cancel the appointments as long as the date and time of the appointments are not passed. (Unless modify it before the ordered date, it may affect the general working arrangements and reduce the efficiency of hospital)
5. Nurse should log in to the system in order to view patients’ appointments (Prevent Non-related people from view the patients’ data and disclose the information.)
6. Nurse should search for all appointments in a specific date by entering a 6-digit date in the form. (Enable to search and arrange the appointment accurately.)
7. Nurse should search for a specific patient by entering his or her username
8. Nurse should record basic patient information such as attendance
9. Nurse should generate reports such as hospital referrals
10. Doctor should log in to the system to search and view patients’ appointments.
11. Doctor should add more information about the patient case
12. Doctor should write a prescription for the patient in the system
13. Doctor should write the hospital referrals for the patient in the system

System Requirement

1. Choose the identity which contains students or nurses or doctors on the login interface by offering the option of three identities as the following pictures shows.
2. The system should allow user to enter his/her user name which is their unique student ID and password and login by clicking the ‘Sign in’ button.
3. If the wrong username or password is entered, it will put out error message in the notice box as the following picture shows.

图片包含 屏幕截图

描述已自动生成

1. The system should offer the service of finding the password by click the ‘Forgot?’ button and jump to the reset page.
2. Once enter the page for finding the password, it will automatically send an e-mail including reset number and require a reset number input in the middle of the screen.
3. The system should then allow user to fill the related information in the reset page and find the information in the database in order to find the password in the forgetting page.
4. After entering the system, there will be a sidebar which contains two buttons ‘Make Appointment’ and ‘Manage Appointment’ and patients should select from these two buttons.
5. If the patient clicks the ‘Make Appointment’ button, it will automatically ask the patient to fill a form with several textboxes containing his/her information, such as name, status and description of the syndrome as the following picture shows.

图片包含 屏幕截图

描述已自动生成

1. The system should also allow patients to manage their appointment by clicking the ‘Manage Appointment’ button and it will jump to another page.
2. The system should offer the service of modifying or cancel the appointment by clicking the ‘modify’ or ‘cancel’ button and jump to the related page as following picture shows.

图片包含 屏幕截图

描述已自动生成

1. The system should allow patients to modify the date and the time of appointment in the previous page by filling the form and submit it.
2. The system will alert the message “You have modified it successfully’ when the modify information has been examined successfully.
3. The patient shall access the implement of making an appointment by clicking the ‘make an appointment’ in the home page and jump to the appoint page
4. The system should examine the result of appointing and give a reminder which display the message “You have submitted successfully” when the detection has passed.
5. Jump to an interface which contains a sidebar and a main page which contains two rectangular buttons for nurse to enter date and username respectively and all appointments arranging below like the following example picture.

图片包含 屏幕截图

描述已自动生成

1. When any one of two sort buttons is clicked, read the numbers entered in date space if there is any number and the numbers entered in username space.
2. Look for the matched appointments in database if the entered numbers in date space are 6-digit date.
3. Show all matched appointments which can be found in database and hyperlinks which can access to the information of appointments after each appointment in an interface.
4. Alert an "invalid date" message if the entered numbers in date space are not 6-digit date.
5. Look for the matched appointments in database if the entered numbers in username.
6. Find the appointment which matches with the username in database.
7. Show all matched appointments which can be found in database and hyperlinks which can access to the information of appointments after each appointment in an interface.
8. When the hyperlinks after appointments are clicked, jump to another interface which contains the information of patients, four rectangular spaces for basic patient information, patient case, prescription and hospital referral respectively where only the "basic patient information" can be edited by nurses, and a "generate" button, a "save" button like the following example picture.

图片包含 屏幕截图

描述已自动生成

1. Read the information entered in “basic patient information” column by nurse when “save” button is clicked.
2. Update the information of appointment in database.
3. When "generate" button is clicked, a report which contains the information of patients, basic patient information, patient case, prescription and hospital referral and a "confirm" button and a "print" button will be shown in a new page.
4. When "confirm" button is clicked, jump back to search page.
5. When "print" button is clicked, print this page out.

图片包含 屏幕截图

描述已自动生成

1. When the hyperlinks after appointments are clicked, jump to another interface which contains the information of patients, four rectangular spaces for basic patient information, patient case, prescription and hospital referral respectively where only the "basic patient information" can't be edited doctors, and a "save" button, "next appointment" button like following example picture.

图片包含 屏幕截图

描述已自动生成

1. When “save” button is clicked, read the information entered in three rectangular by doctors.
2. Update the information of appointment in database.
3. When "next appointment" button is clicked, jump to "make appointment" interface which is the same as the "make appointment" in the student end.

**Appendix 1.**

**Explanation of the use case diagram**

Since the patient, nurses and doctors have different interaction interfaces, we differ the login systems for different users. Moreover, patients have options for cancelling or modifying the appointment and making appointment and we determine the relations as extend. In making appointment part, students have to fill a form and receive a confirmation form the nurse. Doctors and nurses almost have the same requirements and the relations are as following diagram.