INFORMATION SYSTEMS IN HEALTH CARE

Presentation of projects
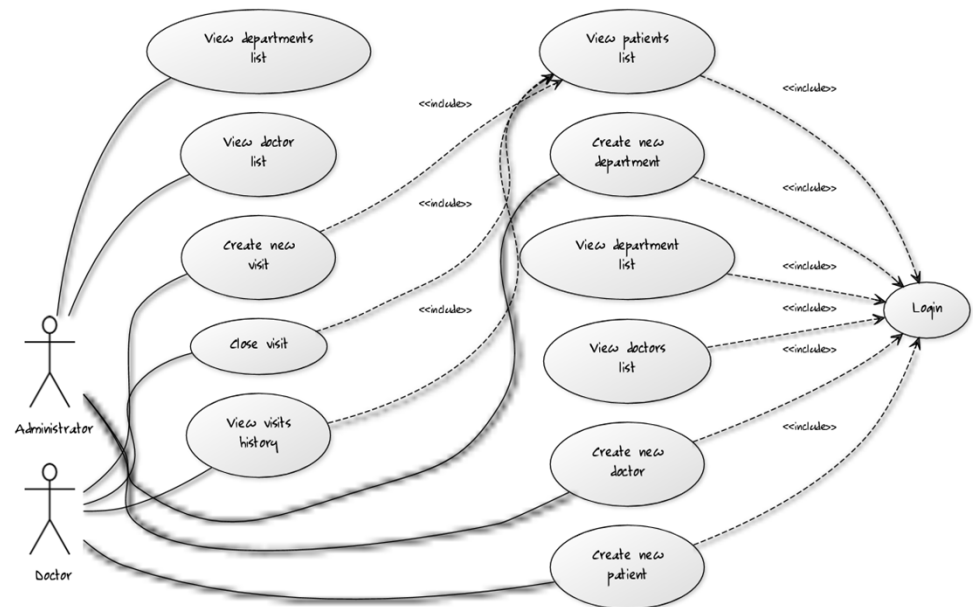
Requirements

Adminstrator

- log into the system
- create new department
- create new doctor
- view doctor list
- view departments list

Doctor

- log into the system
- create new patient
- create new visit
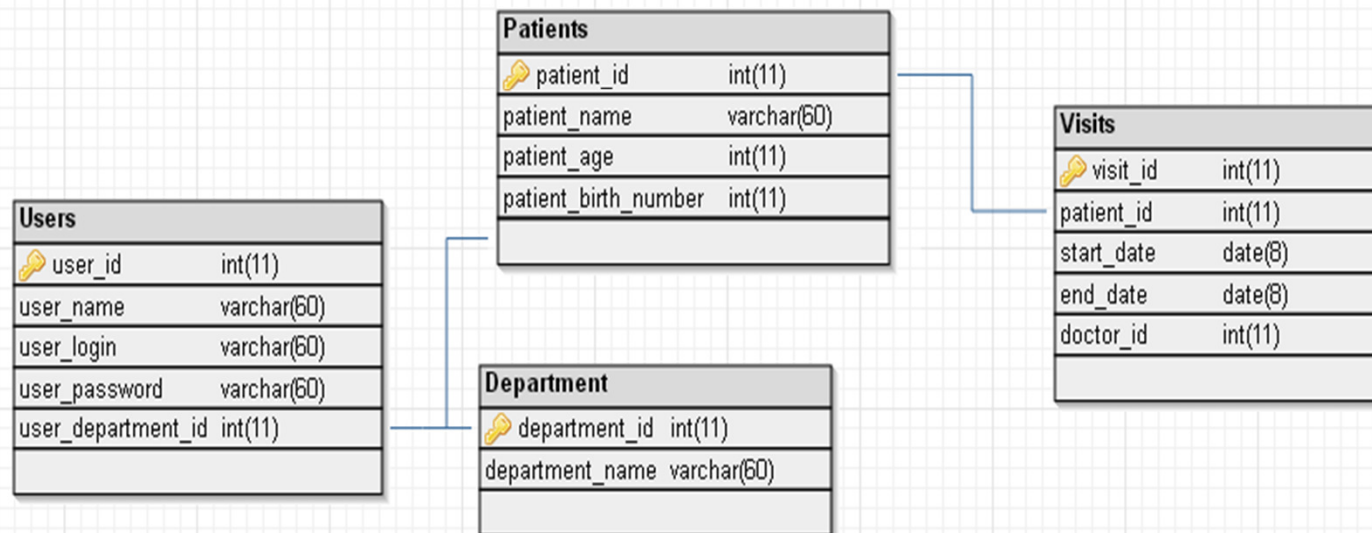- close visit
- view patient list
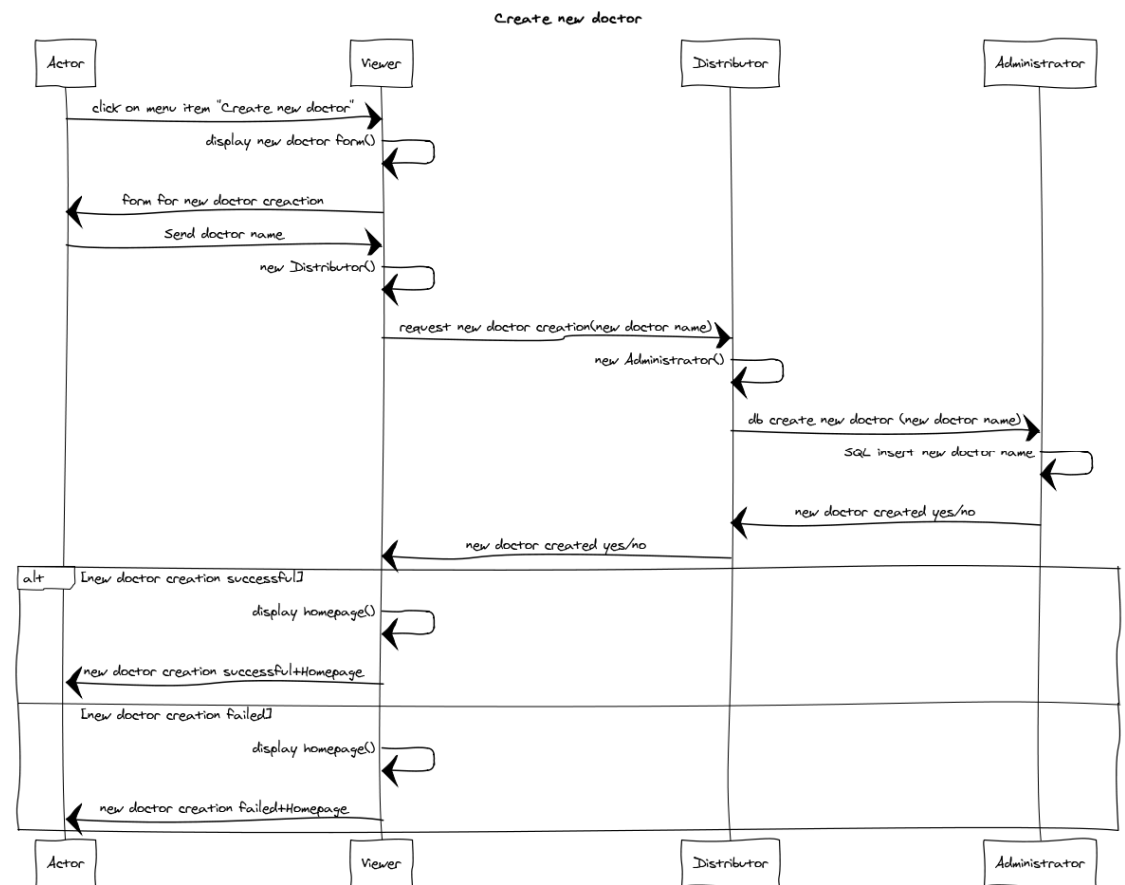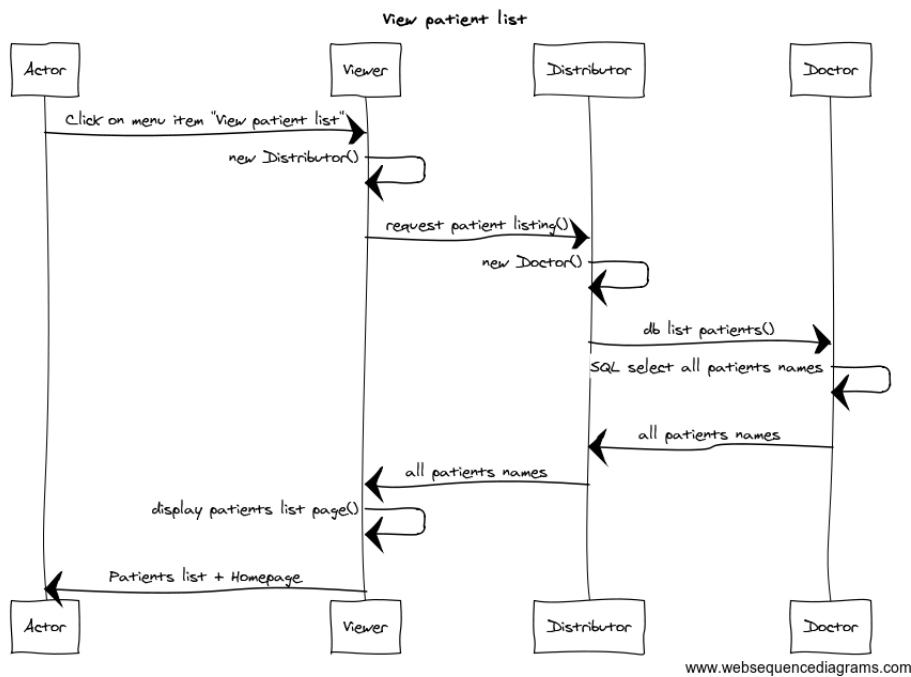- view visit history

Part I: Analysis

Databaze

UML sequence diagram

- Create new doctor
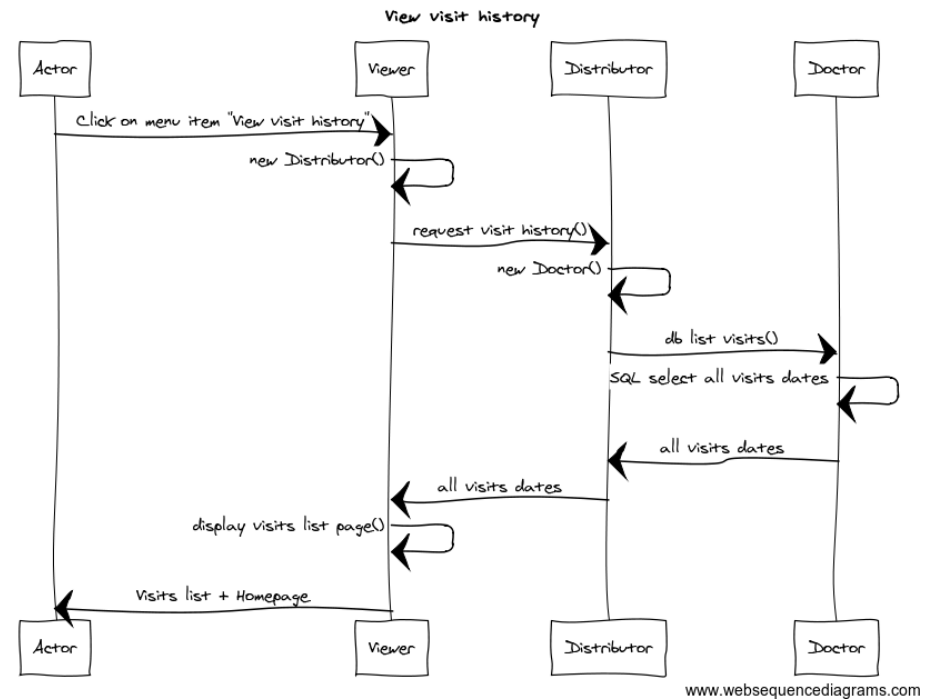
- View patient list   View visit history

Part II: Coding

Administrator

+db_create_new_department()
+db_list_departments()
+db_create_new_doctor()
+db_list_doctors()

User

+name
+username
+password

+db_check_login_credentials

Doctor

+department_name

+db_create_new_patient()
+db_list_patients()
+db_create_new_visit()
+db_close_visit()
+db_list_visits_history()
+db_get_doctorName()
+db_change_startdate_visit()

GUI

+display_login_form()
+display_homepage()
+display_new_department_form()
+display_new_doctor_form()
+display_department_list_page()
+display_doctors_list_page()
+display_new_patient_form()
+display_patients_list_page()
+display_visits_history_page()
+display_start_visit_form()
+display_end_visit_form()

Distributor

+request_check_login_credentials()
+request_new_department_creation()
+request_departments_listing()
+request_new_doctor_creation()
+request_doctor_listing()
+request_new_patient_creation()
+request_patients_listing()
+request_new_visit_creation()
+request_visit_closing()
+request_visit_history_listing()

- class.viewer

- class.doctor

```php
<?php
    session_start();

    include("class.distributor.php");

    class viewer{
        function display_login_form(){
        function display_homepage($user_name, $user_department, $message){
        function display_new_department_form(){
        function display_departments_list_page($departments){
        function display_new_doctor_form(){
        function display_doctors_list_page($doctors){
        function display_new_patient_form(){
        function display_patient_list_page($patients){
        function display_visit_history_page($visits, $distrib){
        function display_start_visit_form($patient){
        function display_end_visit_form($patient, $vid){
```

```php
1   <?php
2
3       class doctor extends user{
4
5           function db_create_new_patient($patient_name, $patient_age, $patient_birth_number){
23
24          function db_list_patients($id){
46
47          function db_create_new_visit($patient_id, $start_date, $doctor_id){
66
67          function db_list_visit_history(){
86
87          function db_close_visit($end_date, $visit_id){
107
108         function db_get_doctorName($id) {
127
128         function db_change_startdate_visit($start_date, $patient_id){
148             }
149
150  ?>
151
```

Part III: Testing

Login form

Login: _____
Password: _____
[Login]

Homepage – admin

Create new department | Show departments list | Create new doctor | Show doctor list

Login successful. Homepage for **administrator**, from department **admin**

Homepage - doctor

Register new patient | Show patients list | Show visits

Login successful. Homepage for **MUDr.Pavel Janda**, from department **Pediatry ID doc: 2**

Show doctor name

Create new department | Show departments list | Create new doctor | Show doctor list

Department name
admin
Pediatry
Radiology
Anesthesiology

Show department name

Create new department | Show departments list

Doctor name
administrator
MUDr.Pavel Janda
MUDr.Jana Novakova
MUDr. Victor Roberts
MUDr. Oscar Brovn

Register new patient

Patient name: [ ]   Patient age: [ ]   Patient birth number: [ ]
[Submit]

Register new patient | Show patients list | Show visits

Patient name	Open Visit
Shepherd Ginny	Open visit
Galderman Johny	Open visit
Whitman Margaret	Open visit
Dale Gwen	Open visit
Bernhard Rue	Open visit
Mellark Miro	Open visit
Pimplebottom Cynthia	Open visit
Collins Eric	Open visit
Robinson Will	Open visit
Bell Agnes	Open visit
Robert Rob	Open visit
Andrzej Nocak	Open visit

Show patients list

Show visits

Register new patient | Show patients list | Show visits

Date of start visit	Date of end visit	Doctor name	Patient Name	Close Visit
2010-10-10	2009-10-10	MUDr.Pavel Janda	Shepherd Ginny	Close Visit
2008-11-12	2009-10-10	MUDr.Pavel Janda	Galderman Johny	Close Visit
2010-10-10	2010-10-25	MUDr.Pavel Janda	Shepherd Ginny	Close Visit
2008-11-12	2008-11-16	MUDr.Pavel Janda	Shepherd Ginny	Close Visit
2003-12-03	2003-12-29	MUDr.Pavel Janda	Dale Gwen	Close Visit
2001-04-05	2001-04-12	MUDr.Pavel Janda	Pimplebottom Cynthia	Close Visit
2005-06-13	2005-06-30	MUDr.Pavel Janda	Collins Eric	Close Visit
2004-05-19	2004-08-19	MUDr.Pavel Janda	Pimplebottom Cynthia	Close Visit
2007-05-24	2007-06-21	MUDr.Pavel Janda	Pimplebottom Cynthia	Close Visit
2011-09-22	2011-09-28	MUDr.Pavel Janda	Whitman Margaret	Close Visit

SQL queries for searching the following information:

- Name of the patient with the greatest number of visits

SELECT name from (SELECT COUNT(v.patient_id) as liczba, p.patient_name as name

FROM Patients p, Visits v

WHERE p.patient_id = v.patient_id

GROUP BY v.patient_id

ORDER BY liczba DESC) res

LIMIT 1

```
SELECT name
FROM (

   SELECT COUNT( v.patient_id ) AS liczba, p.patient_name AS name
   FROM Patients p, Visits v
   WHERE p.patient_id = v.patient_id
   GROUP BY v.patient_id
   ORDER BY liczba DESC
)res
LIMIT 1
```

←—T—→   **name**

☐ ✏ ✗   Dale Gwen

- ## Name of the doctor who was assigned to the patient with the longest visit duration

SELECT user_name Doctor_Name, MAX(end_date - start_date) as NAZWA from Visits v, user u

WHERE end_date is not null

AND end_date > start_date and u.user_id = v.doctor_id

GROUP BY v.visit_id

ORDER BY NAZWA desc

LIMIT 1

```
SELECT user_name Doctor_Name, MAX( end_date - start_date ) AS NAZWA
FROM Visits v, user u
WHERE end_date IS NOT NULL
AND end_date & gt;

start_date AND u.user_id = v.doctor_id GROUP BY v.visit_id ORDER BY NAZWA DESC LIMIT 1
```

←T→	
Doctor_Name	NAZWA
MUDr.Pavel Janda	69808

- List of patients who are currently hospitalized and are younger than 5 years old

SELECT patient_name, patient_age from Patients p, Visits v

WHERE p.patient_id = v.patient_id and

(v.end_date is null or v.end_date like '0000-00-00') and p.patient_age < 5

```
SELECT patient_name, patient_age
FROM Patients p, Visits v
WHERE p.patient_id = v.patient_id
AND (
    v.end_date IS NULL
    OR v.end_date LIKE '0000-00-00'
)
AND p.patient_age & lt;

5 LIMIT 0 , 30
```

←T→			patient_name	patient_age
☐	✎	✗	Shepherd Ginny	4
☐	✎	✗	Andrzej Nocak	3