

T-822

iTrust Project

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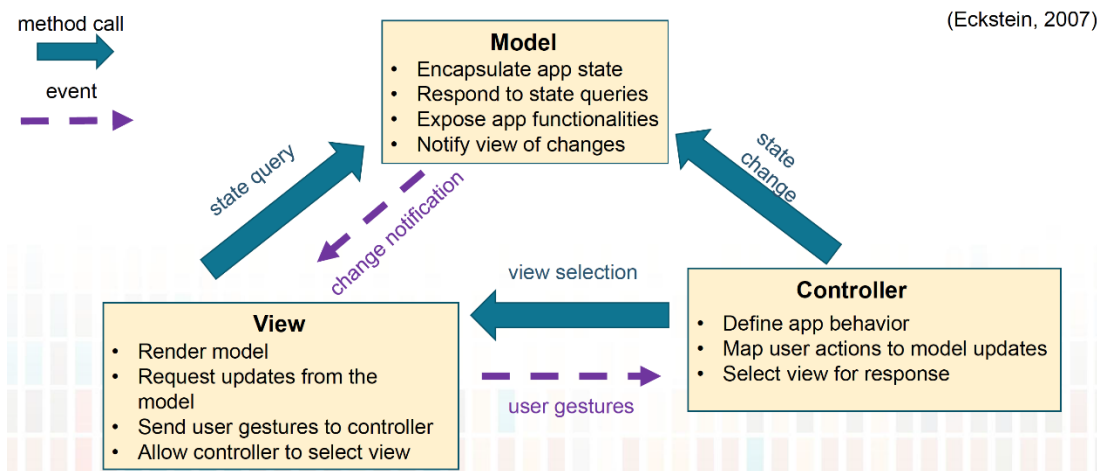
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Brief Description:

iTrust is a medical application that provides patients with a means to keep up with their medical history and records as well as communicate with their doctors, including selecting which doctors to be their primary caregiver, seeing and sharing satisfaction results, and other tasks. iTrust is also an interface for medical staff from various locations. iTrust allows the staff to keep track of their patients through messaging capabilities, scheduling of office visits, diagnoses, prescribing medication, ordering and viewing lab results, among other functions.

Architecture and Design:

This project follows the Model-View-Controller (MVC) software architectural pattern as depicted in the diagram below:



The MVC design pattern consists of three modules: model, view and controller.

- **Model**

The model represents the state (data) and business logic of the application.
The DAO and Bean classes form the Model components in this implementation.

- **View**

The view module is responsible to display data i.e. it represents the presentation.
The JSP files form the View components in this implementation

- **Controller**

The controller module acts as an interface between view and model. It intercepts all the requests i.e. receives input and commands to Model / View to change accordingly.
The Action classes play the Controller roles in this implementation.

The project also uses common design patterns such as Abstract Factory, Singleton, Composite.

The project followed the Extreme Programming (XP) software development methodology. The project was divided into three iterations, with each iteration addressing various use cases and test cases.

UC 93: Obstetrics Patient Initialization

UC-93 User Stories

actual	estimated	story (Team_Story_Task)	description
8	5	UC-93 User Story-1	As a Health Care Personnel (HCP), I want to search existing obstetrics records so that I can see the history of the patient's obstetrics care.
8	5	UC-93 User Story-2	As a Health Care Personnel (HCP), I want to view an existing obstetrics record so that I can see the patient's OBGYN information.
8	3	UC-93 User Story-3	As a Health Care Personnel (HCP) with a specialization of "OB/GYN", I want to create a new obstetrics record with information about the patient's specific obstetrics patient care.

Files Created

Back End:

- iTrust/src/main/edu/ncsu/csc/itrust/action/ObstetAction.java
- iTrust/src/main/edu/ncsu/csc/itrust/model/old/beans/ObstetPriorPregBean.java
- iTrust/src/main/edu/ncsu/csc/itrust/model/old/beans/ObstetRecBean.java
- iTrust/src/main/edu/ncsu/csc/itrust/model/old/beans/loaders/ObstetBeanLoader.java
- iTrust/src/main/edu/ncsu/csc/itrust/model/old/beans/loaders/PriorPregBeanLoader.java
- iTrust/src/main/edu/ncsu/csc/itrust/model/old/dao/mysql/ObstetRecDAO.java
- iTrust/src/main/edu/ncsu/csc/itrust/util/OSInfo.java

Front End:

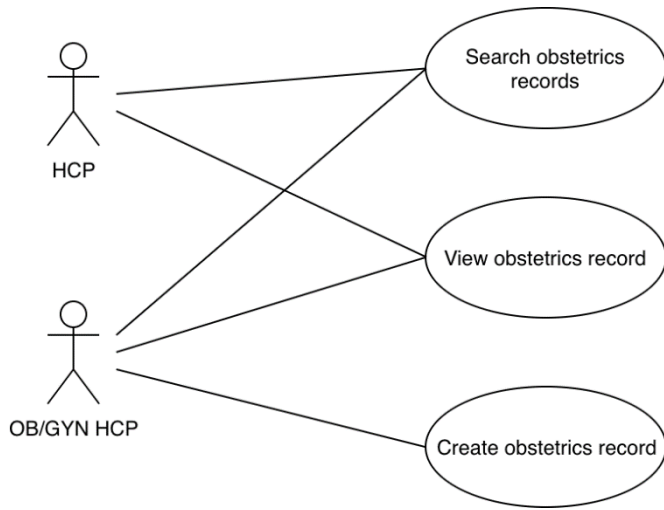
- iTrust/WebRoot/auth/hcp-obstet/addObstetRec.jsp
- iTrust/WebRoot/auth/hcp-obstet/addPriorPreg.jsp
- iTrust/WebRoot/auth/hcp-obstet/editObstetRec.jsp
- iTrust/WebRoot/auth/hcp-obstet/editPriorPreg.jsp
- iTrust/WebRoot/auth/hcp-obstet/initObstetPatient.jsp

Tests:

- iTrust/src/test/java/edu/ncsu/csc/itrust/unit/T822/UC93/selenium/uc93BlackBoxTests.java
- iTrust/src/test/java/edu/ncsu/csc/itrust/unit/T822/UC93/unit/ObstetActionTest.java
- iTrust/src/test/java/edu/ncsu/csc/itrust/unit/T822/UC93/unit/ObstetBeanLoaderTest.java
- iTrust/src/test/java/edu/ncsu/csc/itrust/unit/T822/UC93/unit/ObstetRecDAOTest.java
- iTrust/src/test/java/edu/ncsu/csc/itrust/unit/T822/UC93/unit/PriorPregBeanLoaderTest.java

UC-93 Use Cases

Use Case Diagram



Use Case Description:

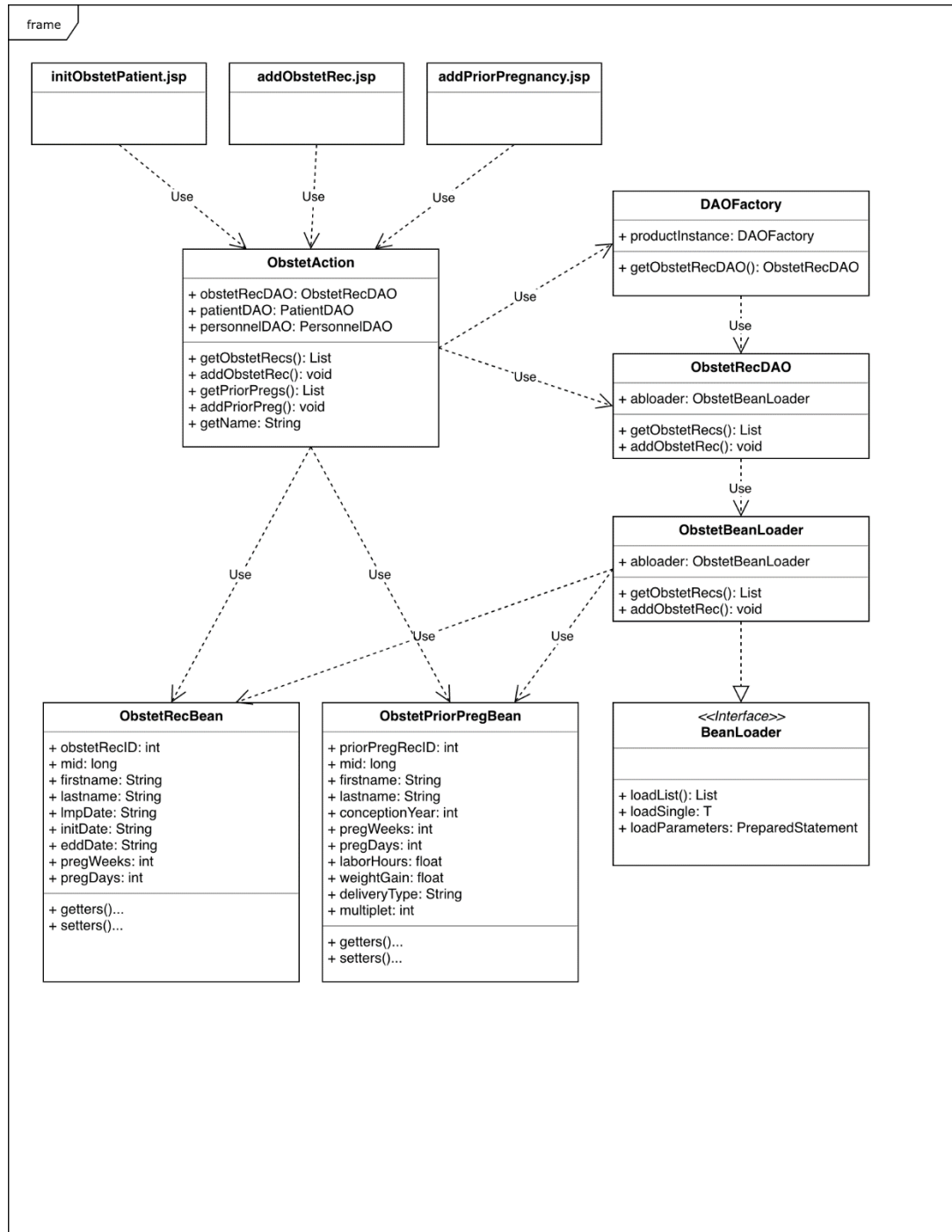
Use case #	UC93-01
Use case name	Search existing obstetrics records
Related requirements	UC93
Goal in Context	HCP searches for the patient's obstetrics records by MID or patient name
Preconditions	HCP is a registered user of the iTrust medical records system HCP has authenticated in iTrust Patient is registered in iTrust
Successful End Conditions	The history of patient's obstetrics care is displayed as a list of patient initialization records in descending order by date.
Failed end Condition	The search returns no patient's obstetrics care records
Primary Actors	HCP (Health Care Personnel)
Main Flow	Steps: 1) The HCP asks the iTrust sytem to perform an obstetrics care search.

	2) The HCP enters the patient's MID or Name. 3) A list of patient initialization records is displayed.
Extensions	Steps: 1) The patient's MID or Name is invalid or cannot be found in iTrust. 2) Search operation is rejected with an error message.
Use case #	UC93-02
Use case name	View an existing obstetrics record
Related requirements	UC93
Goal in Context	HCP opens a patient's obstetrics record in read-only mode
Preconditions	HCP is a registered user of the iTrust medical records system HCP has authenticated in iTrust Patient is registered in iTrust
Successful End Conditions	The information of patient's obstetrics care record is displayed in read-only mode.
Failed end Condition	The view operation is rejected and no information is displayed
Primary Actors	HCP (Health Care Personnel)
Main Flow	Steps: 1) The HCP selects an existing patient initialization record to view. 2) The patient initialization record is displayed in read-only mode, with information of LMP, EDD, The number of weeks pregnant, Prior pregnancy information if applicable.
Extensions	
Use case #	UC93-03
Use case name	Create a new obstetrics record
Related requirements	UC93

Goal in Context	OB/GYN HCP creates a new obstetrics record for an eligible patient
Preconditions	HCP is a registered user of the iTrust medical records system HCP has authenticated in iTrust Patient is registered in iTrust
Successful End Conditions	A new record of patient's obstetrics care is created in iTrust.
Failed end Condition	The creating new record operation failed and no new record is created.
Primary Actors	OB/GYN HCP (Health Care Personnel)
Main Flow	<p>Steps:</p> <ol style="list-style-type: none"> 1) The OB/GYN HCP asks the iTrust system to create a new obstetrics care record. 2) The patient's MID and Name are automatically populated in the form. 3) The HCP enters the patient's LMP and Prior pregnancy if applicable. 4) A new obstetrics care record is created and associated with the patient's initialization record.
Extensions	<p>Extension-1: HCP has no OB/GYN specialization</p> <p>Steps:</p> <ol style="list-style-type: none"> 1) The HCP asks the iTrust system to create a new obstetrics care record. 2) The system rejects request and displays an error message telling the HCP is not qualified to create a new obstetrics record. <p>Extension-2: Patient is not eligible for obstetric care</p> <p>Steps:</p> <ol style="list-style-type: none"> 1) The OB/GYN HCP asks the iTrust system to create a new obstetrics care record. 2) The system rejects request and displays an error message telling the patient is not eligible for obstetric care.

UC-93 Software Design

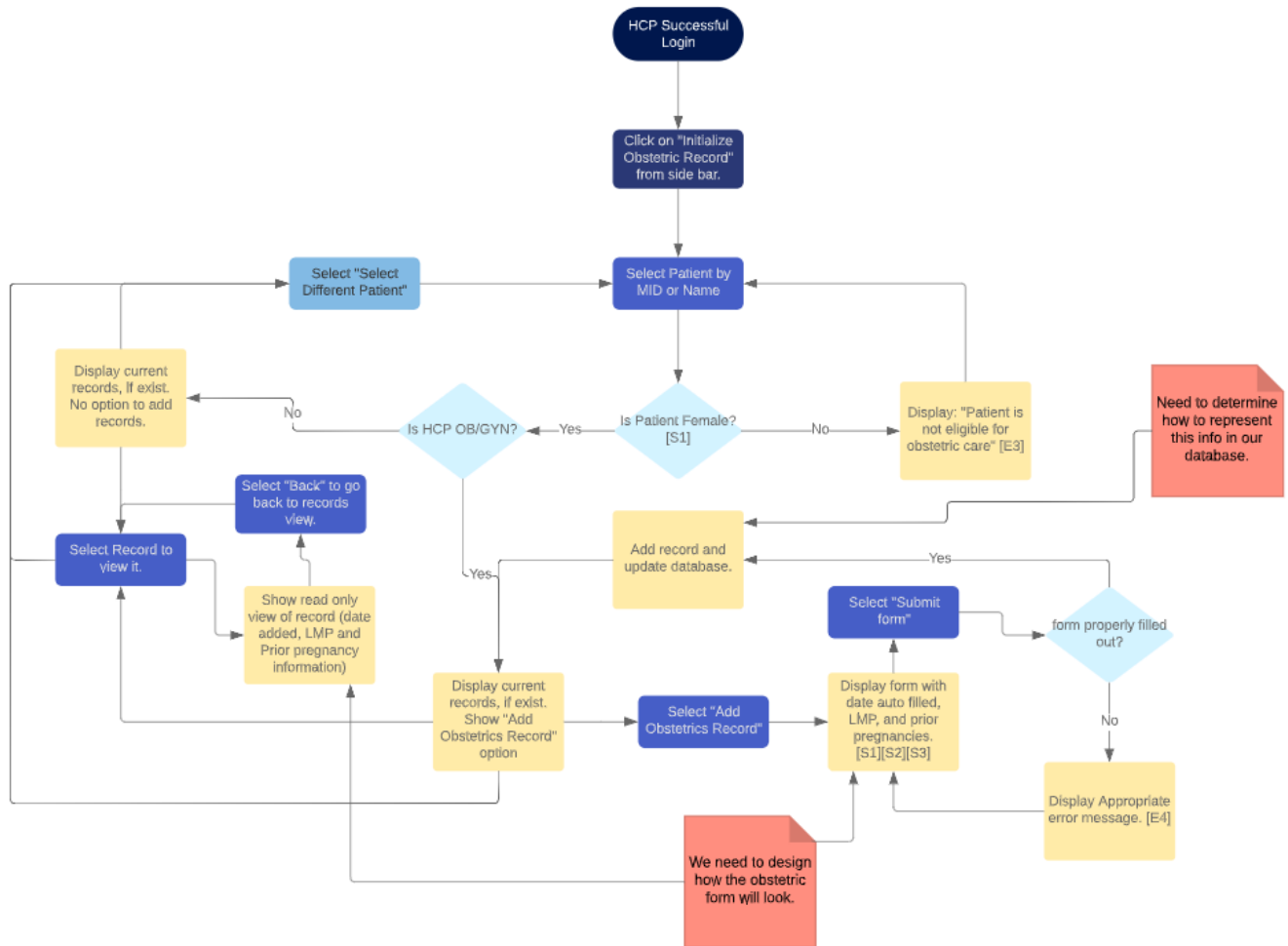
Class Diagram



Flow Chart

Uc 93 Obstetrics Patient Initialization

Nathan Nard | October 24, 2018



Screenshots

Screenshot 1 - Select a patient (to add new obstetrics record)

Select a Patient

Search by name or MID:

Found 1 Records

MID	First Name	Last Name
102	Caldwell	Hudson

Screenshot 2 - Patient's obstetrics records list

Obstetric Record

Patient's MID: 102

Patient's Name: Caldwell Hudson

Record #	LMP	EDD	Pregnant Weeks	Initialization Date
2	2018-08-19	2019-05-26	10 Weeks, 4 Days	2018-11-01

Add Obstetric Record

Prior Pregnancy

The patient has no prior pregnancy record.

Add Prior Pregnancy

Screenshot 3 - Add a new obstetrics record

Please enter the patient's last menstrual period (LMP).

Obstetric Record	
Patient MID:	102
Patient Name:	Caldwell Hudson
Initialization Date:	2018-11-01
LMP:	<input type="text"/>

Add**Cancel**

Screenshot 4 - Add a prior pregnancy record

Please enter the patient's prior pregnancy information.

Prior Pregnancy	
Patient MID:	102
Patient Name:	Caldwell Hudson
Year of Conception:	<input type="text"/>
Pregnant Weeks:	<input type="text"/> weeks, <input type="text"/> days
Hours in Labor:	<input type="text"/>
Weight Gained:	<input type="text"/>
Delivery Type:	<input type="text" value="Vaginal Delivery"/>
Multiplet:	<input type="text"/>

Add**Cancel**

UC 94: Obstetrics Office Visit

UC-94 User Stories

actual	estimated	story (Team_Story_Task)	description	Status
X	0.5	UC-94 User Story-1	As a HCP with OB/GYN certification, I can view previous Obstetrics office visits to see what was documented at those visits.	Development Completed. Pending Unit & Selenium Test Cases
X	0.5	UC-94 User Story-2	As a HCP with OB/GYN certification, I can edit previous Obstetrics office visits so I can update or correct collected information at previous visits.	Development Completed. Pending Unit & Selenium Test Cases
X	0.5	UC-94 User Story-3	As a HCP with OB/GYN certification, I can document new Obstetric Office visits including various information about obstetric patient.	Development Completed. Pending Unit & Selenium Test Cases
X	3	UC-94 User Story-4	As a HCP with OB/GYN certification, when I finish documenting a new Obstetric Office visit, I can order and document an ultrasound.	Development Completed. Pending Unit & Selenium Test Cases
X	5	UC-94 User Story-5	As a HCP with OB/GYN certification, when I finish documenting a new Obstetric Office visit (and ultrasound if requested), I can view when is the next Obstetric office visit (or Childbirth Office Visit) appointment.	Development Completed. Pending Unit & Selenium Test Cases
X	<0.5	UC-94 User Story-6	As a HCP without OB/GYN certification, when I select to add new obstetric office visit documentation, I am forwarded to a regular office visit documentation.	Development Completed. Pending Unit & Selenium Test Cases

Files Created

Back End:

- iTrust/src/main/edu/ncsu/csc/itrust/action/AddObstetOVAction.java
- iTrust/src/main/edu/ncsu/csc/itrust/action/AddUltraSoundDetails.java
- iTrust/src/main/edu/ncsu/csc/itrust/action/ViewObstetricOfficeVisitsAction.java
- iTrust/src/main/edu/ncsu/csc/itrust/model/old/beans/ObstetricOVBean.java
- iTrust/src/main/edu/ncsu/csc/itrust/model/old/beans/UltraSoundBean.java
- iTrust/src/main/edu/ncsu/csc/itrust/model/old/beans/loaders/ObstetricOVBeanLoader.java
- iTrust/src/main/edu/ncsu/csc/itrust/model/old/beans/loaders/UltraSoundBeanLoader.java
- iTrust/src/main/edu/ncsu/csc/itrust/model/old/dao/mysql/ObstetricOfficeVisitDAO.java
- iTrust/src/main/edu/ncsu/csc/itrust/model/old/validate/AddObstetricOfficeVisitValidator.java
- iTrust/src/main/edu/ncsu/csc/itrust/model/old/validate/AddUltraSoundValidator.java
- iTrust/src/main/edu/ncsu/csc/itrust/util/GoogleCalendarUtil.java

Front End:

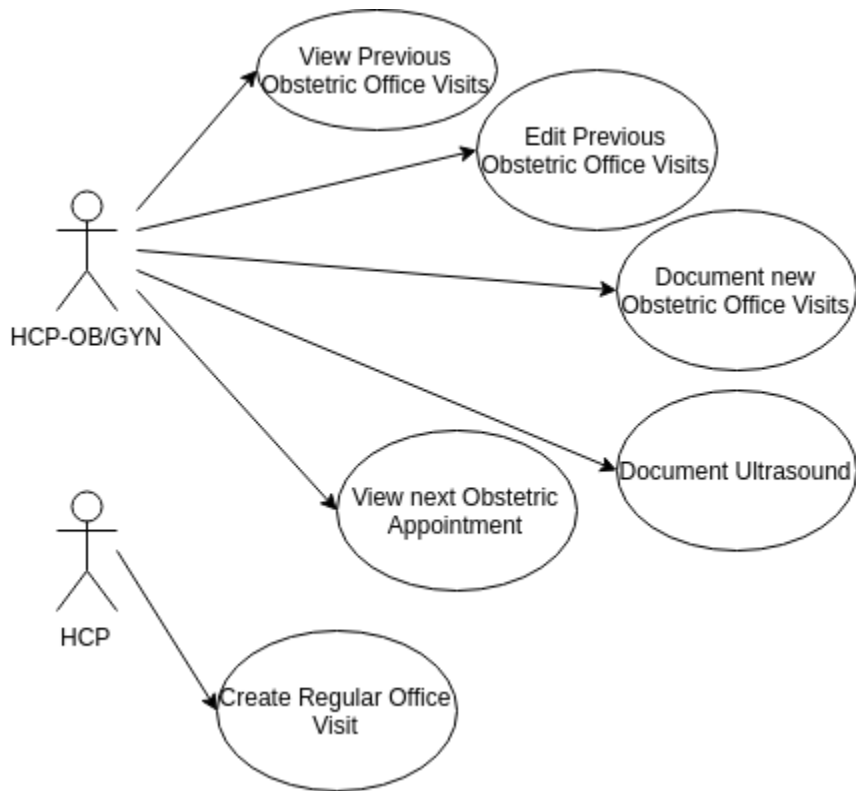
- iTrust/WebRoot/auth/hcp-obstet/addOVRecords.jsp
- iTrust/WebRoot/auth/hcp-obstet/addObstetRec.jsp
- iTrust/WebRoot/auth/hcp-obstet/addPriorPreg.jsp
- iTrust/WebRoot/auth/hcp-obstet/addUltraSoundDetails.jsp
- iTrust/WebRoot/auth/hcp-obstet/editObstetRec.jsp
- iTrust/WebRoot/auth/hcp-obstet/editObstetricOVRecord.jsp
- iTrust/WebRoot/auth/hcp-obstet/editPriorPreg.jsp
- iTrust/WebRoot/auth/hcp-obstet/initObstetPatient.jsp
- iTrust/WebRoot/auth/hcp-obstet/obstetricOVRecords.jsp
- iTrust/WebRoot/auth/hcp-obstet/viewLaborDeliveryReport.jsp
- iTrust/WebRoot/auth/hcp/addObstetOV.jsp

Tests:

- iTrust/src/test/java/edu/ncsu/csc/itrust/unit/T822/UC94/selenium/uc94BlackBoxTests.java
- iTrust/src/test/java/edu/ncsu/csc/itrust/unit/T822/UC94/unit/AddUltraSoundDetailsTest.java
- iTrust/src/test/java/edu/ncsu/csc/itrust/unit/T822/UC94/unit/GoogleCalendarUtilTest.java
- iTrust/src/test/java/edu/ncsu/csc/itrust/unit/T822/UC94/unit/ObstetricOfficeVisitTest.java
- iTrust/src/test/java/edu/ncsu/csc/itrust/unit/T822/UC94/unit/ObstetricsOfficeVisitDAOTest.java
- iTrust/src/test/java/edu/ncsu/csc/itrust/unit/T822/UC94/unit/ViewObstetricOfficeVisitsActionTest.java

UC-94 Use Cases

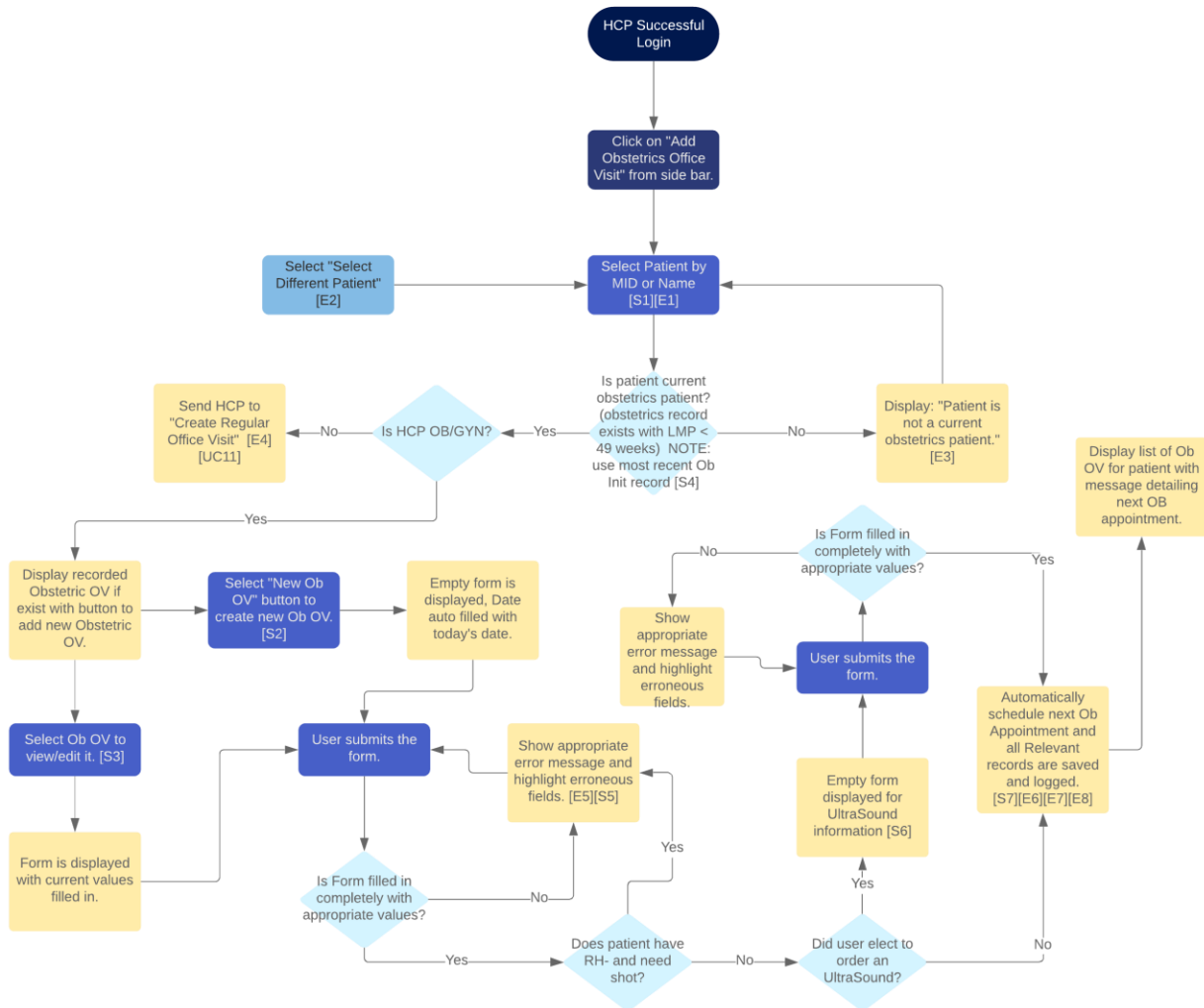
Use Case Diagram



Flow Charts

UC 94 Obstetrics Office Visit

Nathan Nard | October 25, 2018



Data tables:

Obstetrics Office Visit

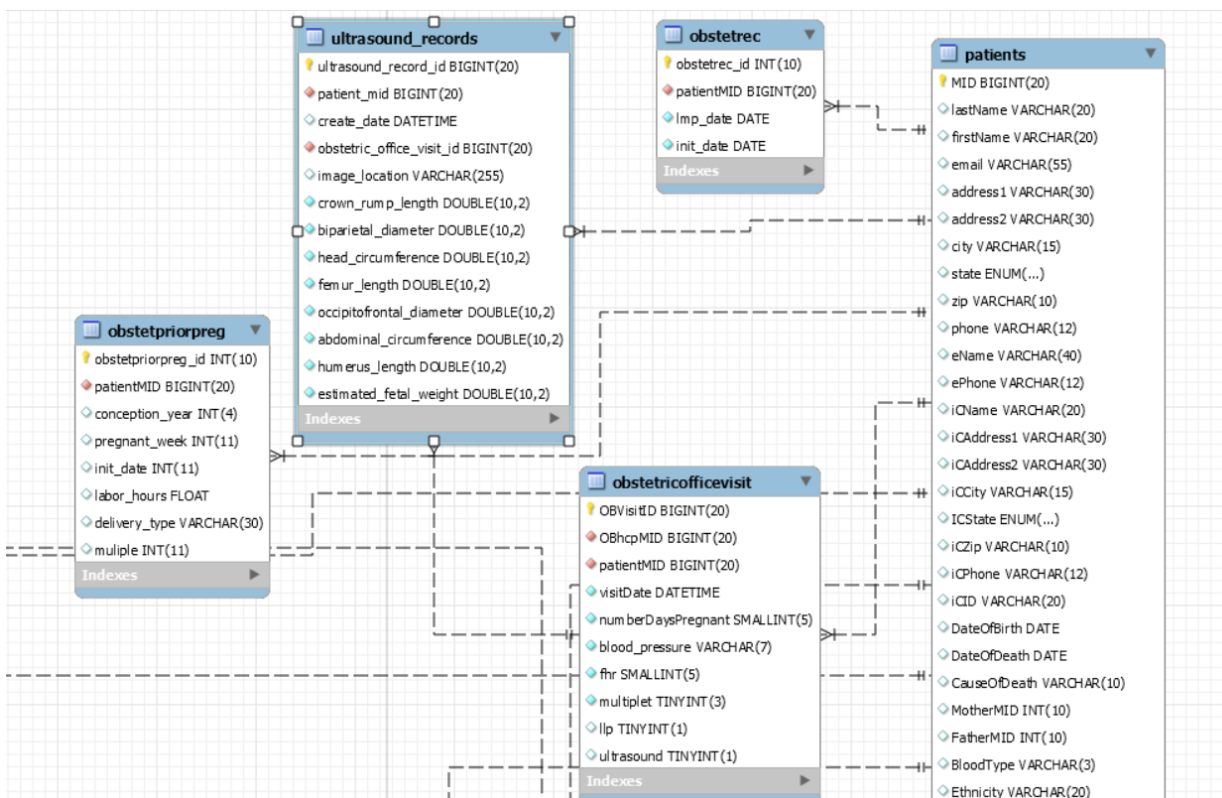
Field	Format	Type
Office Visit ID	Identification number for office visit. Required	BIGINT(20) UNSIGNED NOT NULL AUTO_INCREMENT
HCP MID	Positive integer value that identifies the HCP. Required.	BIGINT(20) UNSIGNED NOT NULL
Patient MID	Positive integer value that identifies the patient. Required.	BIGINT(20) UNSIGNED NOT NULL
Date	mm/dd/yyyy. Required	DATETIME NOT NULL
Number of Weeks Pregnant	2 digits - 1 digit, where the first is number of weeks between [0,42] and the second is the number of days between [0,6]. Required.	UNSIGNED INT (total days)
Blood pressure	"Systolic/Diastolic" where systolic and diastolic are positive integers and the units are millimeters of mercury (mm Hg). Required	VARCHAR(7)
Fetal heart rate (FHR)	Zero or positive integer with the units of beats per minute. Required.	UNSIGNED INT
Multiplet:	Nonzero value between [1,20] that specifies how many fetuses are present. Required	UNSIGNED INT
Low lying placenta	True if present, False if not present. Required.	BOOLEAN
Ultrasound	True if requested, False if not requested. Required.	BOOLEAN (maybe create ultrasound ID number for easy access?)

Ultrasound:

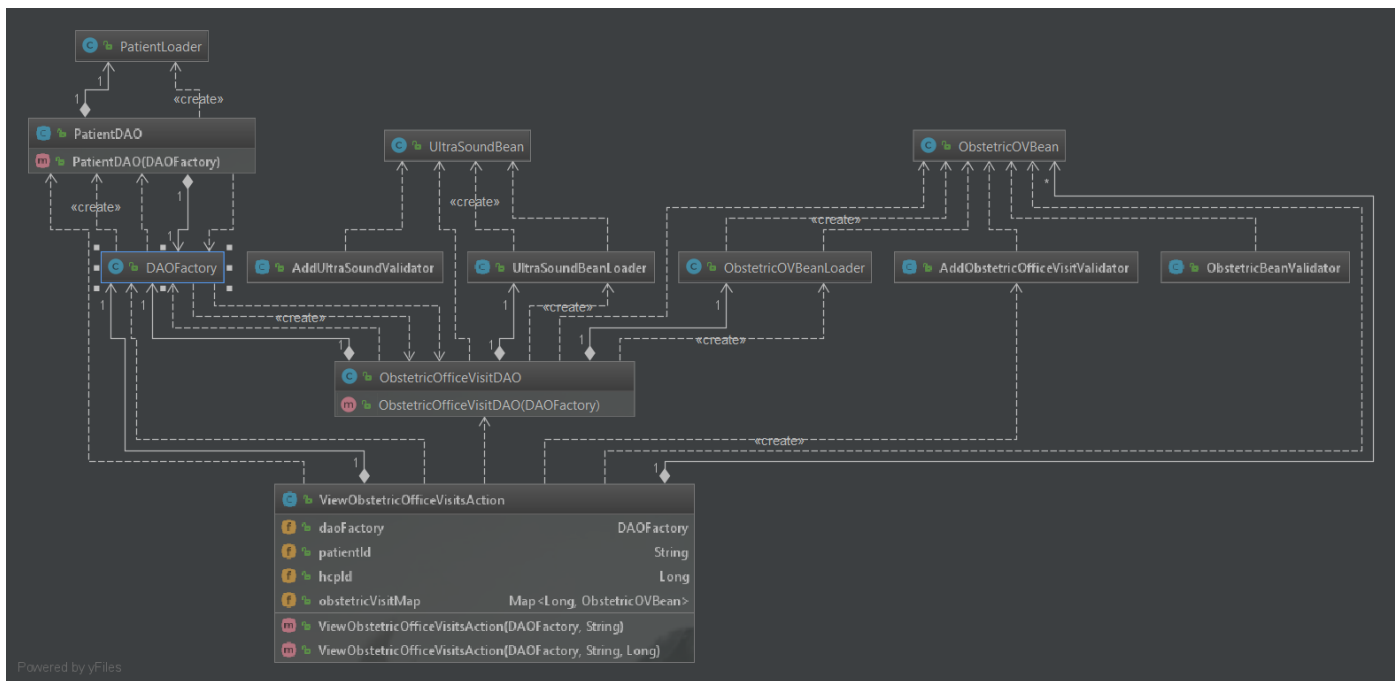
Field	Format	Type
Patient MID	Positive integer value that identifies the patient. Required.	UNSIGNED INT
Date	mm/dd/yyyy. Required	DATE
Office Visit ID		
Image	?	?

Field	Format	Type
Crown Rump Length (CRL)	Positive double with the units of centimeters. Required.	UNSIGNED DOUBLE
Biparietal diameter (BPD)	Positive double with the units of centimeters. Required.	UNSIGNED DOUBLE
Head circumference (HC)	Positive double with the units of centimeters. Required.	UNSIGNED DOUBLE
Femur length (FL)	Positive double with the units of centimeters. Required.	UNSIGNED DOUBLE
Occipitofrontal diameter (OFD)	Positive double with the units of centimeters. Required.	UNSIGNED DOUBLE
Abdominal circumference (AC)	Positive double with the units of centimeters. Required.	UNSIGNED DOUBLE
Humerus length (HL)	Positive double with the units of centimeters. Required.	UNSIGNED DOUBLE
Estimated fetal weight (EFW)	Positive double with the units of pounds. Required.	UNSIGNED DOUBLE

ER Diagram:



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Properties:

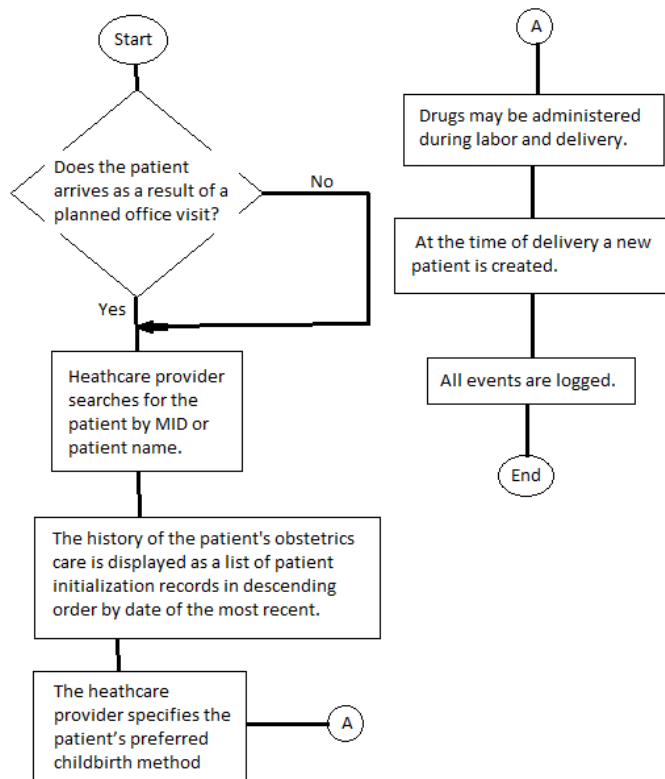
Key	Value
Google Account Details - Can be used for google calendar integration	itrustcommon@gmail.com / itrustcommon@2018
Google Client Secret Files (iTrust\src\resources)	client_secret 35979803002-ctje69bu5ej8dti3muub3duj6t58p3ba.apps.googleusercontent.com client_secret 35979803002-3un6oji7no3gscsjpa76g03qgckrim1d.apps.googleusercontent.com itrust-ee9976321b36
web.xml : Add the context-param changes.	<pre> <context-param> <description>Location to store uploaded file</description> <param-name>file-upload</param-name> <param- value>H:\apps\coursera\llinois\TEAM_GIT_REPO\T822\iTrust\WebRoot\image\ultrasound (<< ADD YOUR PATH HERE)</param-value> </context-param> </pre>
Sample images	\\iTrust\\src\\resources\\images

UC 96: Childbirth Hospital Visit

Requirements:

- An HCP is a registered user of the iTrust Medical Records system (UC2).
- The patient must be a registered patient in the iTrust Medical Records system.
- The iTrust user has authenticated himself or herself in the iTrust Medical Records system.

UC-96 Main Flow



UC-96 User Stories

Actual	Estimated	Story (Team_Story_Task)	Description
X	?	UC-96 User Story-1	<p>A patient enters the hospital from a scheduled office visit.</p> <p>View the patient's record.</p> <p>Record if this is a scheduled or unscheduled visit.</p> <p>Preferred delivery type reviewed and required drugs with dosage.</p> <p>At the time of delivery enter date, time, actual delivery method and gender of each baby that is delivered.</p> <p>Create a new patient file for each baby delivered.</p> <p>The event is recorded to allow the OB/GYN to review later.</p>
X	?	UC-96 User Story-2	<p>A patient enters the hospital from the Emergency Room.</p> <p>View the patient's record.</p> <p>Record if this is a scheduled or unscheduled visit.</p> <p>Preferred delivery type reviewed and required drugs with dosage.</p> <p>At the time of delivery enter date, time, actual delivery method and gender of each baby that is delivered.</p> <p>Create a new patient file for each baby delivered.</p> <p>The event is recorded to allow the OB/GYN to review later.</p>

Files Created

Back End:

- iTrust/src/main/edu/ncsu/csc/itrust/action/CHVApptAction.java
- iTrust/src/main/edu/ncsu/csc/itrust/action/CHVDeliveryAction.java
- iTrust/src/main/edu/ncsu/csc/itrust/model/old/beans/CHVApptBean.java
- iTrust/src/main/edu/ncsu/csc/itrust/model/old/beans/CHVBabyBean.java
- iTrust/src/main/edu/ncsu/csc/itrust/model/old/beans/CHVDeliveryBean.java
- iTrust/src/main/edu/ncsu/csc/itrust/model/old/beans/loaders/CHVApptBeanLoader.java
- iTrust/src/main/edu/ncsu/csc/itrust/model/old/beans/loaders/CHVDeliveryBeanLoader.java
- iTrust/src/main/edu/ncsu/csc/itrust/model/old/dao/mysql/CHVApptDAO.java
- iTrust/src/main/edu/ncsu/csc/itrust/model/old/dao/mysql/CHVDeliveryDAO.java
- iTrust/src/main/edu/ncsu/csc/itrust/model/old/validate/CHVApptBeanValidator.java
- iTrust/src/main/edu/ncsu/csc/itrust/model/old/validate/CHVDeliveryBeanValidator.java

Front End:

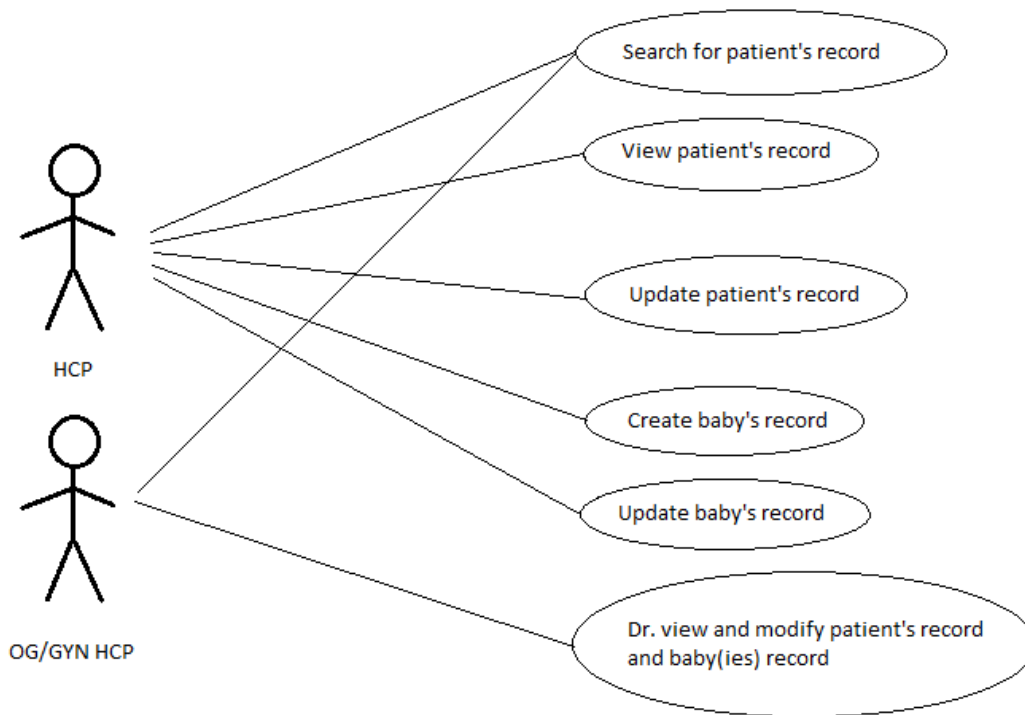
- iTrust/WebRoot/auth/hcp-obstet/addCHVDelivery.jsp
- iTrust/WebRoot/auth/hcp-obstet/addOVRecords.jsp
- iTrust/WebRoot/auth/hcp-obstet/editCHVAppt.jsp
- iTrust/WebRoot/auth/hcp-obstet/editCHVDelivery.jsp
- iTrust/WebRoot/auth/hcp-obstet/obstetricCHV.jsp
- iTrust/WebRoot/auth/hcp-obstet/obstetricCHV_AddDrug.jsp
- iTrust/WebRoot/auth/hcp-obstet/obstetricCHV_Baby.jsp
- iTrust/WebRoot/auth/hcp-obstet/obstetricCHV_OB.jsp
- iTrust/WebRoot/auth/hcp-obstet/scheduleCHVAppt.jsp

Tests:

- iTrust/src/test/java/edu/ncsu/csc/itrust/unit/T822/UC96/selenium/AddChildbirthVisitEmergency.java
- iTrust/src/test/java/edu/ncsu/csc/itrust/unit/T822/UC96/selenium/AddChildbirthVisitOnSchedule.java
- iTrust/src/test/java/edu/ncsu/csc/itrust/unit/T822/UC96/selenium/AddVistiWithInvalidPatientMid.java
- iTrust/src/test/java/edu/ncsu/csc/itrust/unit/T822/UC96/selenium/ChildbirthVisitOnSchedule.java
- iTrust/src/test/java/edu/ncsu/csc/itrust/unit/T822/UC96/unit/CHVApptActionTest.java
- iTrust/src/test/java/edu/ncsu/csc/itrust/unit/T822/UC96/unit/CHVApptBeanValidatorTest.java
- iTrust/src/test/java/edu/ncsu/csc/itrust/unit/T822/UC96/unit/CHVApptDAOTest.java
- iTrust/src/test/java/edu/ncsu/csc/itrust/unit/T822/UC96/unit/CHVDeliveryActionTest.java
- iTrust/src/test/java/edu/ncsu/csc/itrust/unit/T822/UC96/unit/CHVDeliveryDAOTest.java

UC-96 Use Cases

Use Case Diagram



Use Case

Use Case #	UC96-01
Use case name	Admitted via scheduled visit
Related requirements	Requirements for UC-96
Goal in Context	Delivery Baby
Preconditions	Mother entered for scheduled visit
Successful End Conditions	Record: Drug and dosage Delivery type

Use Case #	UC96-01
	<p>Date and time</p> <p>Create a new patient file for each baby</p> <p>Record gender of baby</p> <p>Commit record</p>
Failed End Condition	<p>Fail to write record</p> <p>Fail to capture drug and dosage</p> <p>Fail to write data and time</p> <p>Fail to write gender of baby(ies)</p> <p>Fail to create a new patient file for each baby</p>
Primary Actors	HCP
Main Flow	Yes
Extensions	None
Use Case #	UC96-02
Use case name	Unscheduled emergency room visit
Related requirements	Requirements for UC-96
Goal in Context	Delivery Baby
Preconditions	Mother entered from emergency room
Successful End Conditions	<p>Record:</p> <p>Drug and dosage</p> <p>Delivery type</p> <p>Date and time</p> <p>Create a new patient file for each baby</p> <p>Record gender of baby</p> <p>Commit record</p>

Use Case #	UC96-01
Failed End Condition	Fail to write record Fail to capture drug and dosage Fail to write data and time Fail to write gender of baby(ies) Fail to create a new patient file for each baby
Primary Actors	HCP
Main Flow	Yes
Extensions	None

Use Case #	UC96-03
Use case name	Invalid medical identification number of different patient
Related requirements	Requirements for UC-96
Goal in Context	Prompted to try again
Preconditions	HCP types an invalid medical identification number
Successful End Conditions	Re-enter search parameters
Failed End Condition	Has to start over from the beginning
Primary Actors	HCP
Main Flow	Alternate Flow
Extensions	Try different patient
Use Case #	UC96-04
Use case name	Invalid medical identification name not in system
Related requirements	Requirements for UC-96

Use Case #	UC96-03
Goal in Context	Prompted to try again
Preconditions	HCP types an invalid medical identification name
Successful End Conditions	Re-enter search parameters
Failed End Condition	Has to start over from the beginning
Primary Actors	HCP
Main Flow	Alternate Flow
Extensions	Try different patient
Use Case #	UC96-05
Use case name	Incorrect patient is choosen
Related requirements	Requirements for UC-96
Goal in Context	Change patient without starting over
Preconditions	Wrong patient chosen
Successful End Conditions	Change current patient
Failed End Condition	Start over
Primary Actors	HCP
Main Flow	Alternate Flow
Extensions	Change patient
Use Case #	UC96-06
Use Case #	UC96-06

Use Case #	UC96-05
Use case name	Baby born outside of hospital
Related requirements	Requirements for UC-96
Goal in Context	Set flag for estimated time of delivery
Preconditions	Mother missed the hospital or was in the emergency room
Successful End Conditions	Actual delivery: vaginal delivery (Default) Set flag for estimated time of delivery
Failed End Condition	Start over
Primary Actors	HCP
Main Flow	Alternate Flow
Extensions	Set flag for estimated time

UC 822: Postnatal care

822.1 Preconditions

UC 96 must be fully implemented (including their pre-requisites) before UC 822 can be implemented.

822.2 Main Flow

After a patient's child is born, a HCP may document[S2] or edit[S3] a new postnatal process after childbirth procedure for a current childbirth patient[S1]. A current childbirth patient is a patient who has been initialized as an obstetrics patient (UC93) and has been recorded with a childbirth procedure(UC96). Any other descriptions and comments are documented[S4]. At last, a HCP can modify the release date[S5]. All events are logged[S6].

822.3 Sub-flows

[S1] The HCP enters a MID [E1] or name of a patient and confirms their selection [E2][E3].

[S2] An OB/GYN HCP [E4] documents the following information related to postnatal care and saves the postnatal care record. All events are logged (UC5, S6). All information is as follows while the first three entries are required [E5],

- Record date
- Childbirth date
- Delivery type
- Additional comments
- Release date

[S3] OB/GYN HCPs can return to an postnatal care record and modify the record. The event is logged (UC5, S6)

[S4] OB/GYN HCPs can add descriptions and comments. The event is logged (UC5, S6)

[S5] OB/GYN HCPs can return to an postnatal care record and update release date. The event is logged (UC5, S6)

822.4 Alternative Flows

[E1] The HCP types an invalid patient medical identification number and is prompted to try again.

[E2] The patient chosen is not the desired patient. The HCP does not confirm the selection and is prompted to try again.

[E3] The patient chosen is not a current child birth patient. The HCP is prompted to try again.

[E4] An HCP without the OB/GYN specialization is unable to create or edit an postnatal care record.

[E5] Invalid or missing inputs are flagged and an error message appropriate to the input is printed.

822.5 Logging

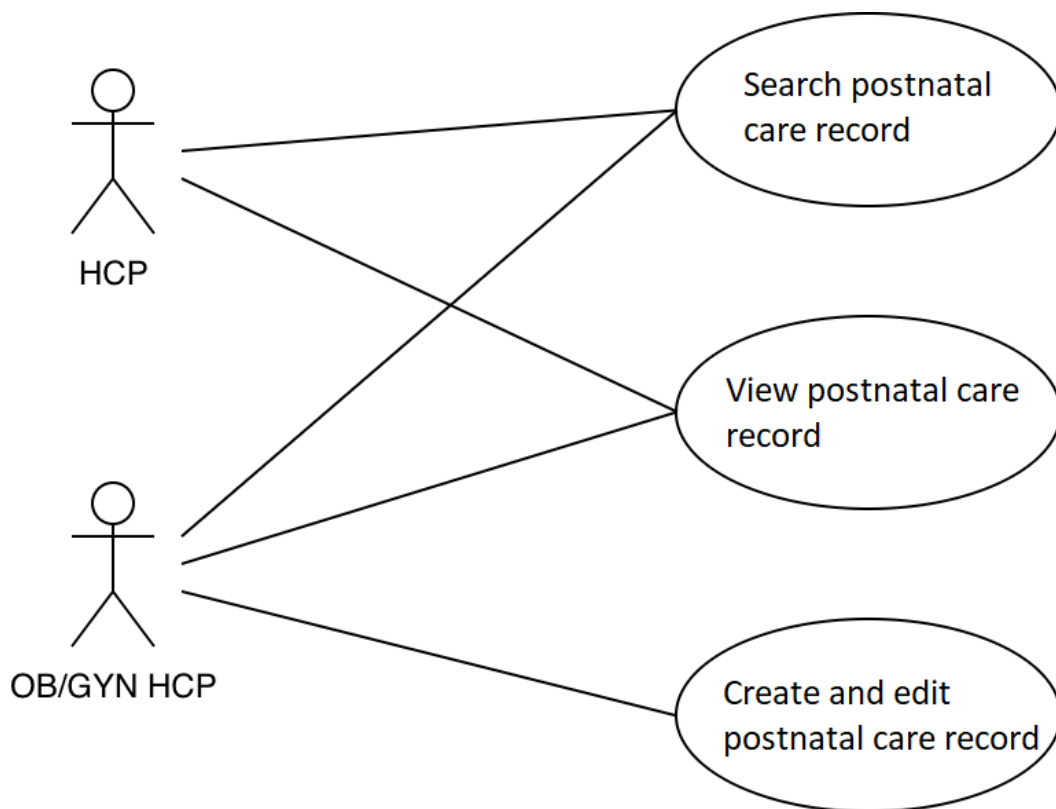
Certain things must be kept in mind as the physician proceeds with the post-natal care. The x in the transaction is dependant on the number of children with a default of 1 and increasing for each child.

Transaction Code	Verbose Description	Logged In MID	Secondary MID	Use Case(s) Involved	Type of Transaction
82200	Create a postnatal care record	HCP	Patient	822	Update
82201	View a postnatal care record	HCP	Patient	822	Update
82202	Edit a postnatal care record	HCP	Patient	822	Update
82203	Updated release date	HCP	Patient	822	Update

822.6 User Stories

Actual	Estimated	Story	Description
X	?	UC-822 User Story 1	A HCP can search and view a postnatal
X	?	UC-822 User Story 2	<p>A HCP with OB/GYN can create, edit, search and view a postnatal care, with the following information, required when creating and modifying:</p> <p>Record date Childbirth date Delivery type</p>
X	?	UC-822 User Story 3	<p>A HCP with OB/GYN can view, add and edit a postnatal care, with the following information:</p> <p>Additional comments Release date</p>

User case diagram



Files Created

Back End:

- iTrust/src/main/edu/ncsu/csc/itrust/action/PostnatalAction.java
- iTrust/src/main/edu/ncsu/csc/itrust/model/old/beans/PostnatalCareRecordBean.java
- iTrust/src/main/edu/ncsu/csc/itrust/model/old/beans/loaders/PostnatalCareBeanLoader.java
- iTrust/src/main/edu/ncsu/csc/itrust/model/old/dao/mysql/PostnatalCareRecordDAO.java

Front End:

- iTrust/WebRoot/auth/hcp-postnatal/addPostnatalCareRecord.jsp
- iTrust/WebRoot/auth/hcp-postnatal/editPostnatalCareRecord.jsp
- iTrust/WebRoot/auth/hcp-postnatal/initPostnatalCare.jsp

Tests:

- iTrust/src/test/java/edu/ncsu/csc/itrust/unit/T822/UC822/selenium/Uc822BlackBoxTest.java
- iTrust/src/test/java/edu/ncsu/csc/itrust/unit/T822/UC822/unit/PostnatalActionTest.java
- iTrust/src/test/java/edu/ncsu/csc/itrust/unit/T822/UC822/unit/PostnatalCareBeanLoaderTest.java
- iTrust/src/test/java/edu/ncsu/csc/itrust/unit/T822/UC822/unit/PostnatalCareRecordDAOTest.java

Appendix

In order to run tests, look for iTrust/src/test/java/edu/ncsu/csc/itrust/unit/T822/ in the project tree and have IntelliJ or other IDE run any tests you want. Right click and run, like below:

