Tesseract Software Designs

Arch Dental Associates

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COSC 6000 FA2 2016

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# The Problem

## Background Information

Arch Dental Associates (from now on referred to as “Arch”) is a chain of dental practices owned by a small group of partners. They have been in business for the past 25 years and are a recognized and accomplished dental establishment within the communities in which they reside. Although they do have multiple practices, they still consider themselves to be a small operation and try to take care of their employees just as though they were a family-run business.

## Problem Description

Arch has approached us with a request to help them to modernize their business processes, and to ease and simplify the use of day-to-day operations. They are looking to replace an age-old paper system of operating the business. Since they have multiple locations and multiple possible administrators, we have concluded that the best design for them would be a web-based application. This will help them to coordinate their Dental Practice and make their business more efficient from any location. It will be of upmost importance that the user interface for this application be highly user friendly and intuitive to use given that many of the users will have limited computer experience.

## Users / Roles

* User
  + These are the patients who receive services
  + Could be a primary account holder
  + Could be the primary account holder’s dependents
* Office Staff
  + An office worker or provider/dentist/hygienist
* Administrator
  + Main owner(s) of practice
  + Would typically be the owner of the practice but could also be a trusted user within the company

# Requirements

## Functional

* User (Patients)
  + Primary account holder
  + View/edit household account info
  + View/cancel appointments
  + Payments
  + Services
  + Designate primary insurance holder
  + Add/edit dependents
* Office Staff
  + An office worker or provider/dentist/hygienist
  + Create/view/update individual client account info
  + Create/view/update appointments
  + Process payments
* Administrator
  + Main owner(s) of practice
  + Would typically be the owner of the practice but could also be a trusted user within the company
  + Create/view/update any screen
  + Create/view/update office staff and providers
  + Create/view/update clinics
  + Create/view/update rooms
  + Create/view/update services
  + Create/view/update qualifications
  + Create/view/update accepted insurance

Arch would like to move to a modern/computerized system to allow their patients access to some portion of their account from home, to ensure rooms in each clinic are adequately utilized, and not double-booked, to ensure the time of each provider is adequately utilized, and not double-booked, and lastly, to provide a paperless (or at least significantly less paper) method for day-to-day business and accounting.

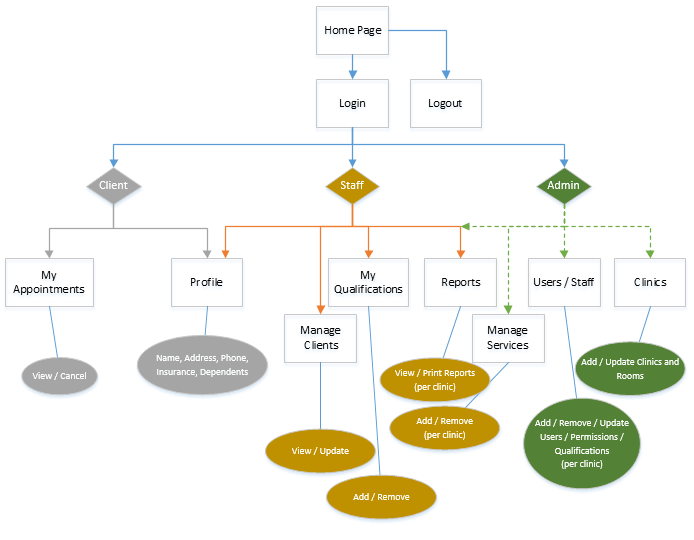
* The system shall support the following users: Client, Office, Admin
  + Client
    - The system shall designate a Primary account holder (a head of household)
    - The system shall allow the Client to view/edit household info such as:
      * Designate the household insurance company
      * Dependent information and relationship to primary
      * Birthdate of each person in household
      * Appointments coming / past and details including
        + Services rendered
        + Price
        + Provider Name
    - The system shall provide a user with a unique account number
  + Office
    - Office Staff, Doctors, Hygienists
    - The system shall allow all staff to create / update any Client account info
    - The system shall allow all staff to create / update appointments
    - The system
  + Admin
    - Main owners/partners of practice (could also be Doctors)
    - The system shall allow Admin to create/view/update any screen
    - The system shall allow Admin to create/view/update office staff and clients
    - The system shall allow Admin to create/view/update clinics
    - The system shall allow Admin to create/view/update rooms in a clinic
    - The system shall allow Admin to create/view/update services offered by a clinic
    - The system shall allow Admin to create/view/update designate which office users are providers
* The system shall provide a username / password to every user and allow user the ability to change them
* The system shall provide a unique numeric ID to each user
* The system shall obfuscate all user passwords
* The system shall track contact information for all users (name, address, phone)
* The system shall allow all staff to make appointments.
* The system shall keep track of all services (and costs for each service) a clinic provides.
  + A provider does not need to be qualified in order to perform a service the clinic offers
  + Designate a standard rate for each service
  + Designate a standard length of time to complete each service
* The system shall allow for more than one dentist and/or hygienist to provide services
* The system shall record services each provider is certified for
* The system shall allow office users and administrators to make appointments for services on a specific time/date
* The system shall allow clients to view/update their profile, and view/cancel appointments
* The system shall allow a patient to receive services from multiple providers during a visit
* The system shall track if an appointment is kept/missed/canceled
* The system shall, for each appointment, reserve a room for each service provided, note individual service lengths
* The system shall generate a single bill for an entire household
* The system shall allow Office user creating an appointment to alter standard pricing with billing reflecting both the standard and actual rates
  + The actual rate should never be higher than the standard rate
* The system shall provide the ability to generate an overall bill for all services outstanding, or provide an itemized bill for an individual appointment
  + Should contain the date of service, list of services, name of provider, and costs
* The system shall generate a bill on a monthly basis for each household
* The system shall generate a report containing all households, names, addresses, phones, person ID, dependents and relationships
* The system shall generate a report showing insurance coverage for all households including household ID, household primary account holder name, insurance company ID and name.
* The system shall generate a report containing all patients in order by person ID, name, birthdate, and also contain their insurance company and policy number
* The system shall generate a report show itemized billings for all households with household ID, primary account holder name, person ID, patient name, service, and cost ordered by primary account holder name, patient name, and billing date
* The system shall generate a report showing the total cost of all services received for each household
* The system shall generate a report showing each provider and services qualified to render
* The system shall generate a report all future appointments sorted by patient name, appointment date/time, length of service, phone – grouped by each patient
* The system shall generate a report list all services performed by each provider in order by provider name and include the service ID, service description, and cost
* The system shall generate a report, that for a given date, lists the total amount of services each provider rendered – ordered by provider name

## Non-Functional

* The system shall work only via web browser
* The system shall be optimized for the Google Chrome web browser
* The system shall have a Web API back end written in C# to support .NET 4.0
* The system shall have an HTML5 front end written in Angular JS
* The system shall have a modern/organized/consistent usability
* The system shall take into account multiple users working at the same time in order to best optimize for performance
* The system shall leverage an Oracle database for data storage
* The system shall support Microsoft IIS

# Site Information

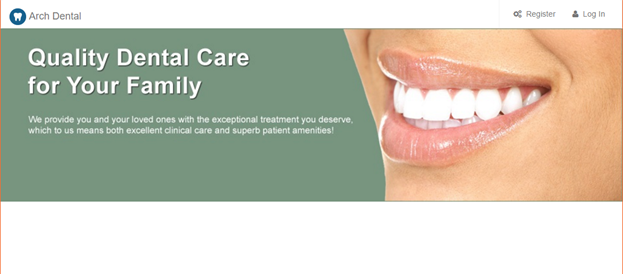
## Site Diagram

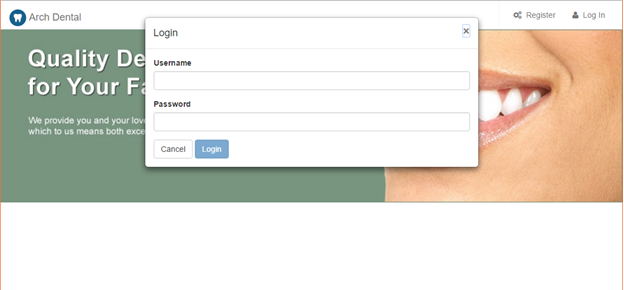


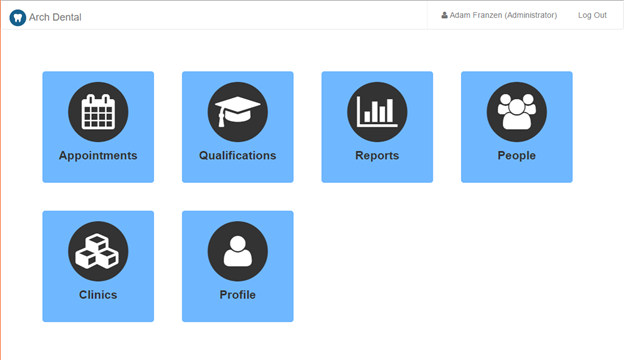
## Features and Benefits

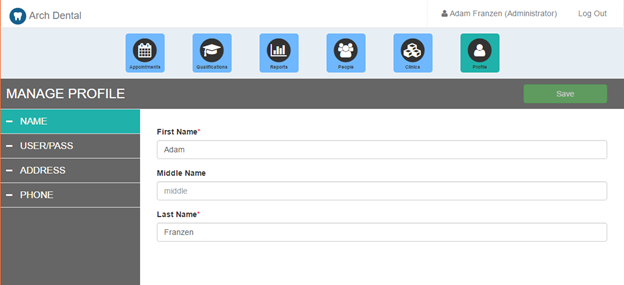
|  |  |
| --- | --- |
| ***Feature*** | ***Benefit*** |
| Appointments accessible from any computer | * Makes doing business easier and more intuitive, more organized, constantly up-to-date, and free of paper * Clients can view/cancel appointments online |
| Payments tracked by computer | * Time better optimized. Location of records and balancing books happens in a flash |
| Real-world, up-to-date data | * Room bookings always accurate * Provider bookings always accurate and fully optimized |
| Clients can manage their data online | * Lighter workload on employees when clients use online services   + Lower call instances for payments and billing questions   + Lower call instances for appointment time/date/service/cancellation questions |

## UI Screen Prints



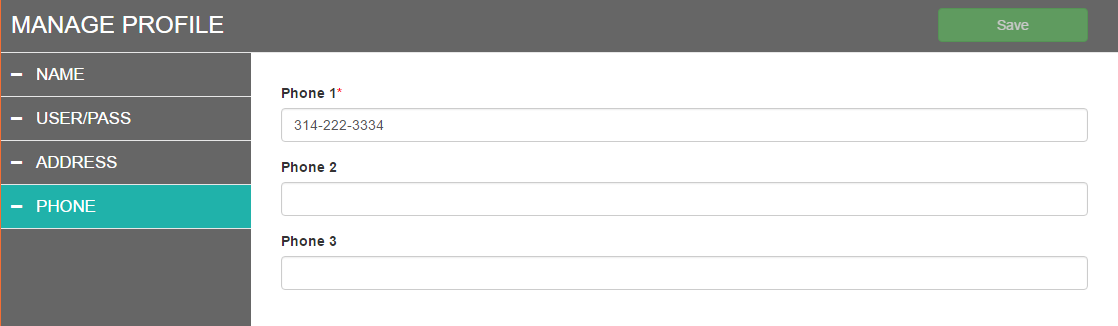


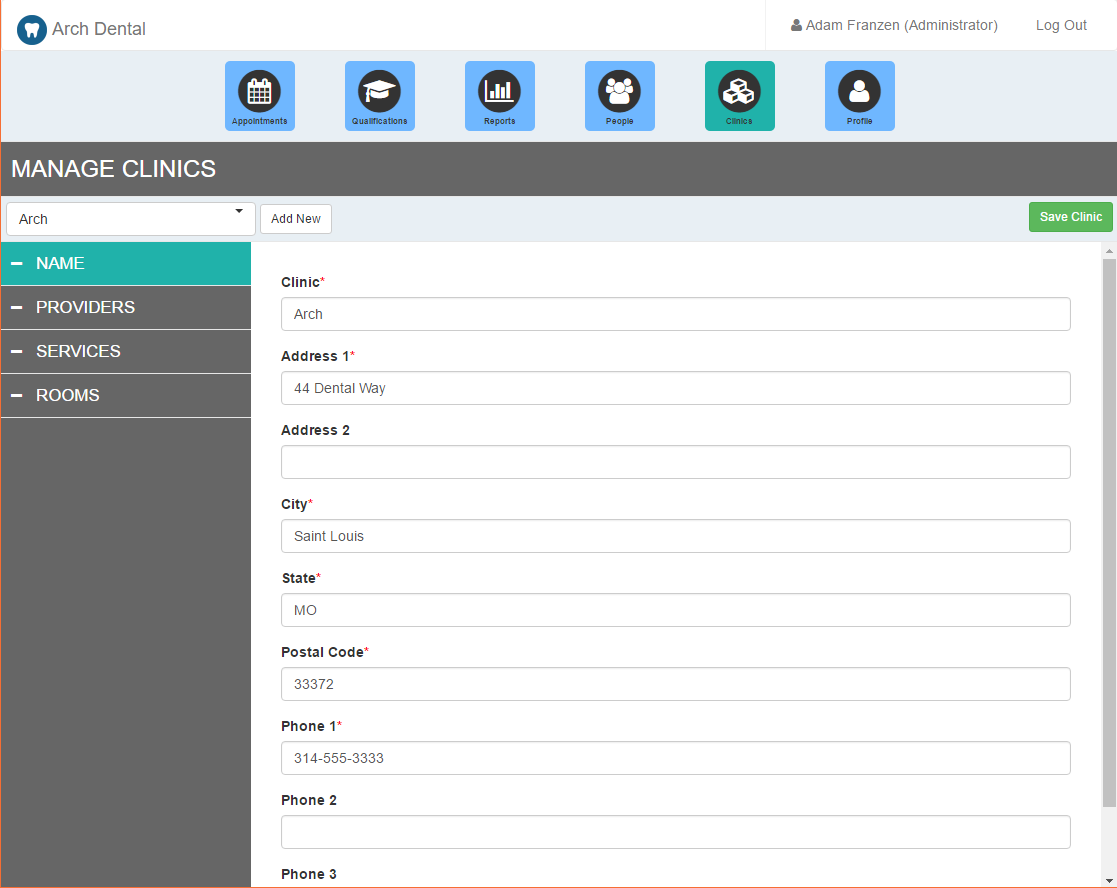


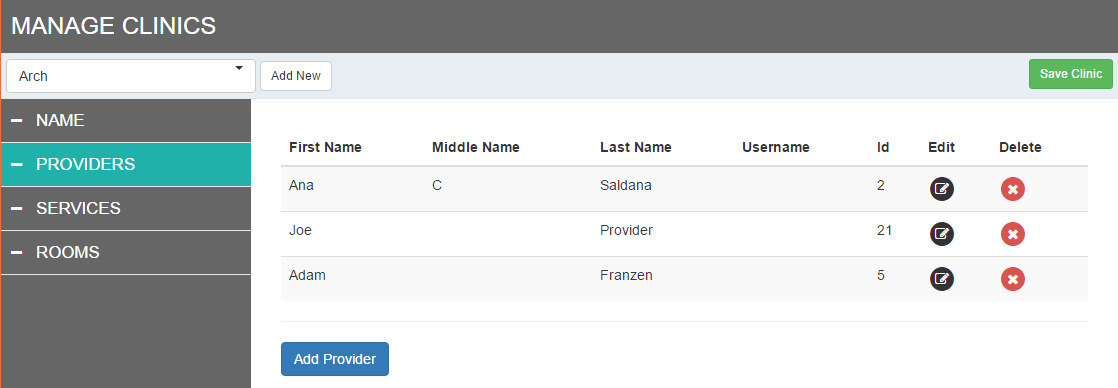


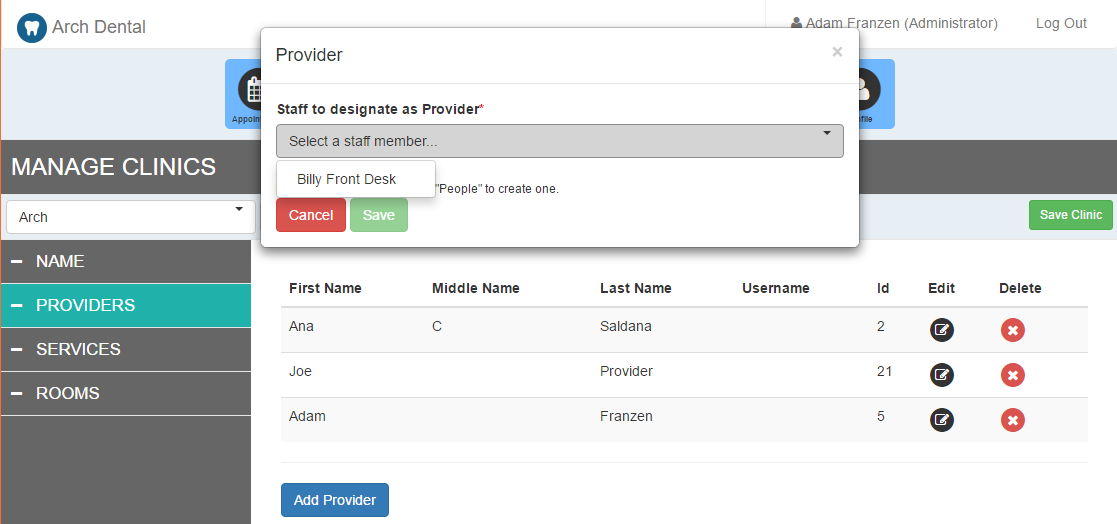


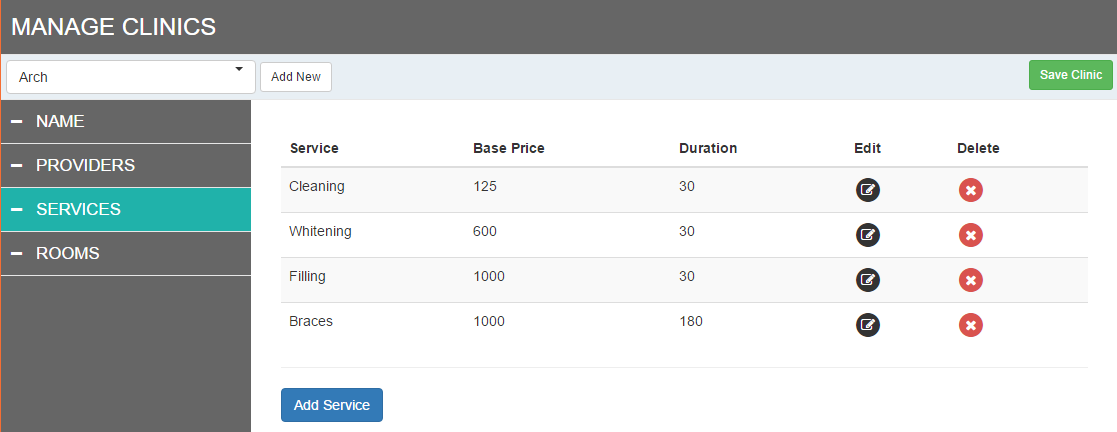


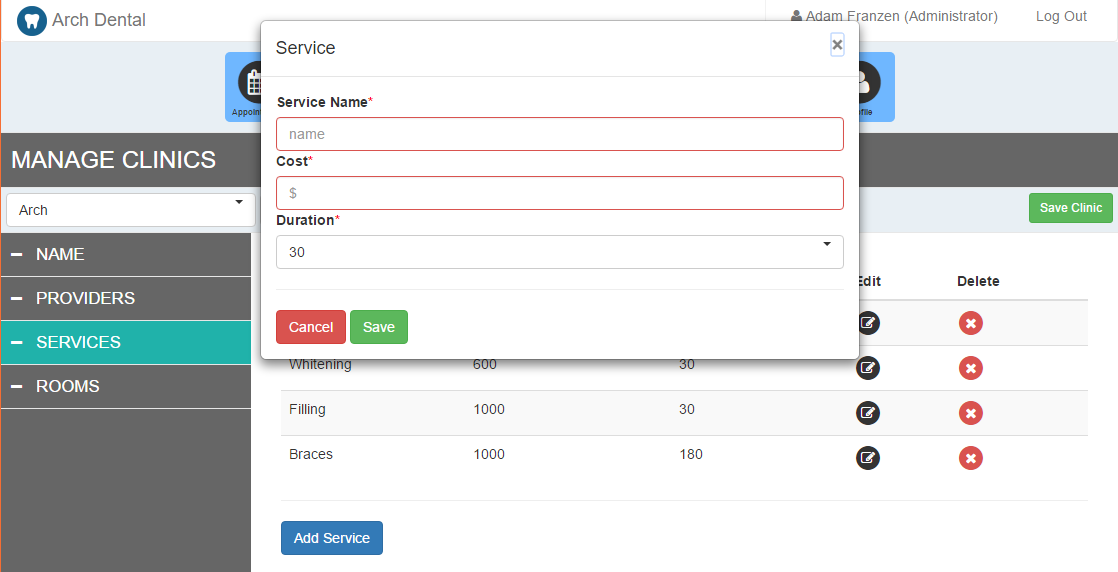


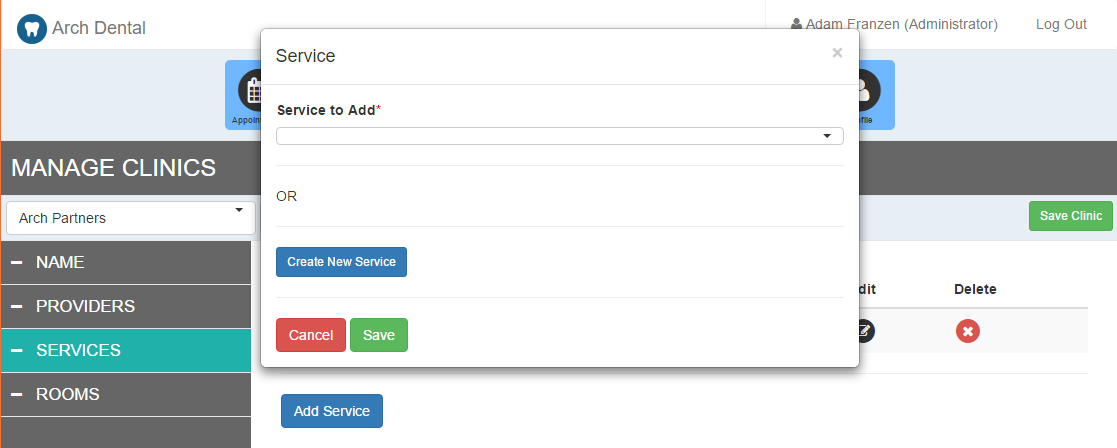


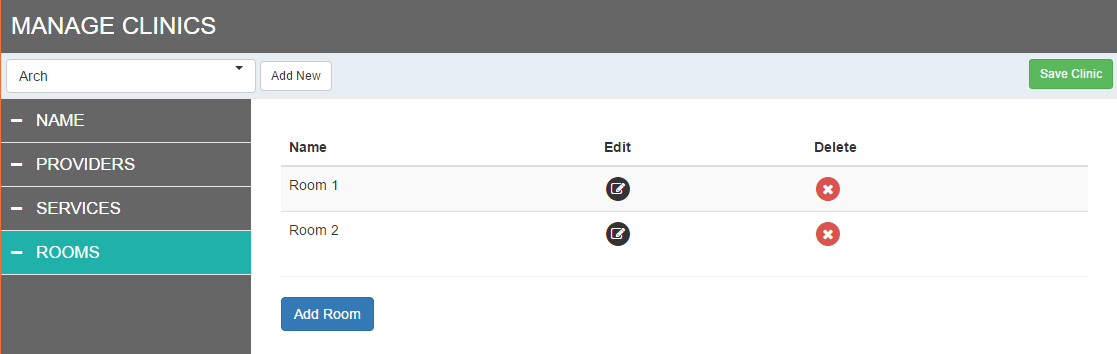


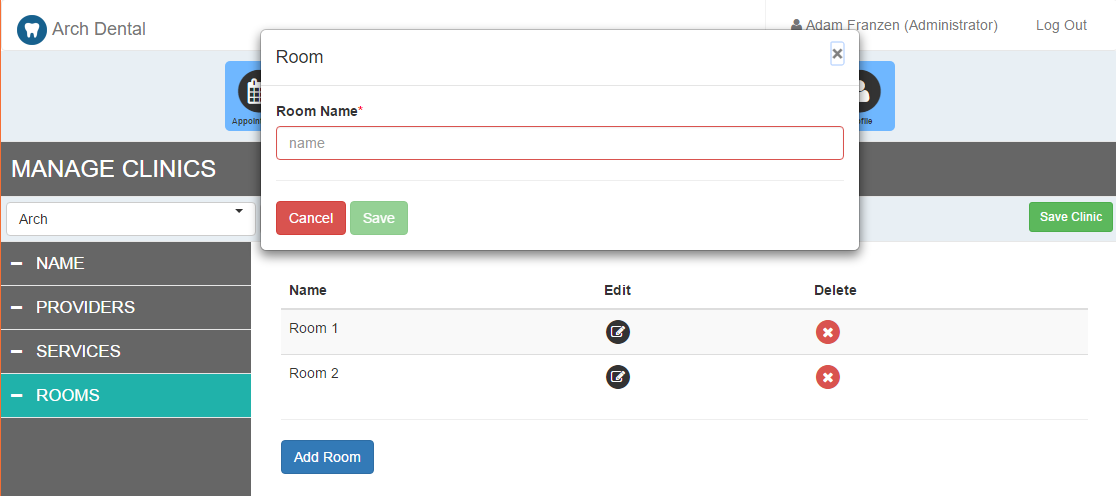


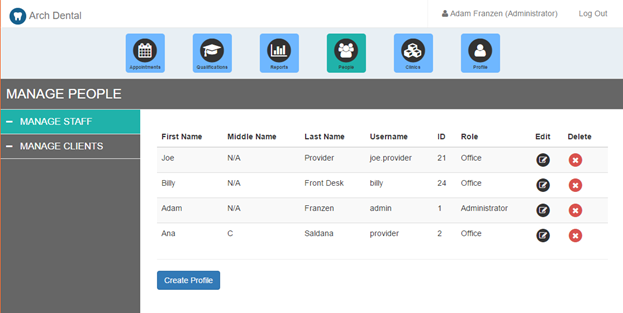


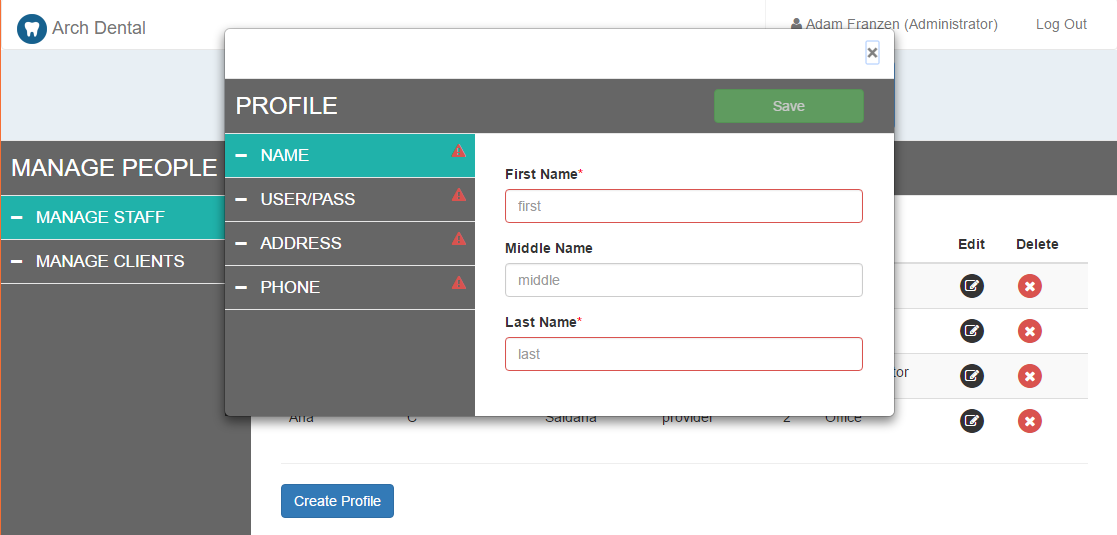


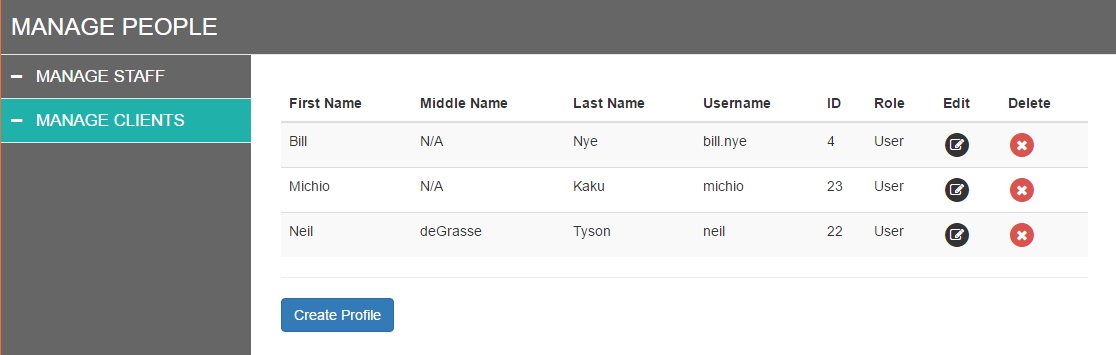


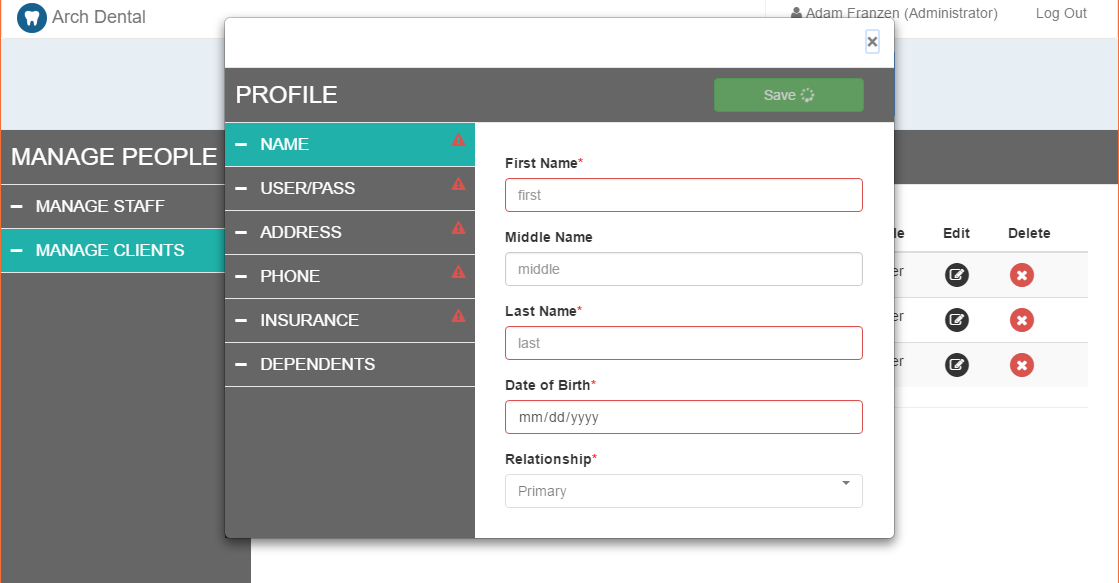


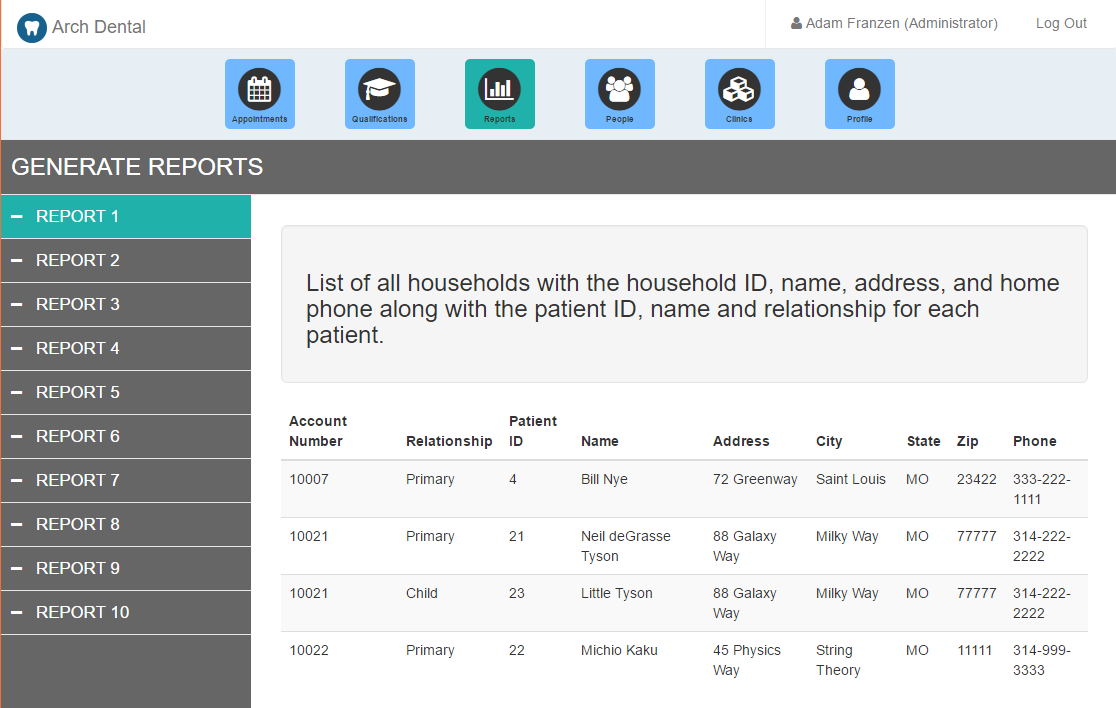


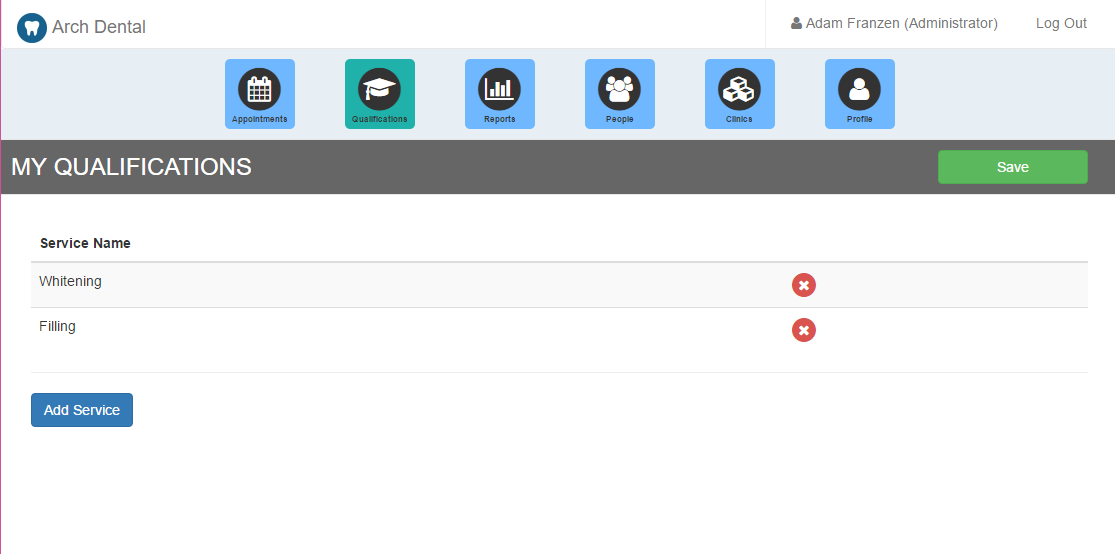


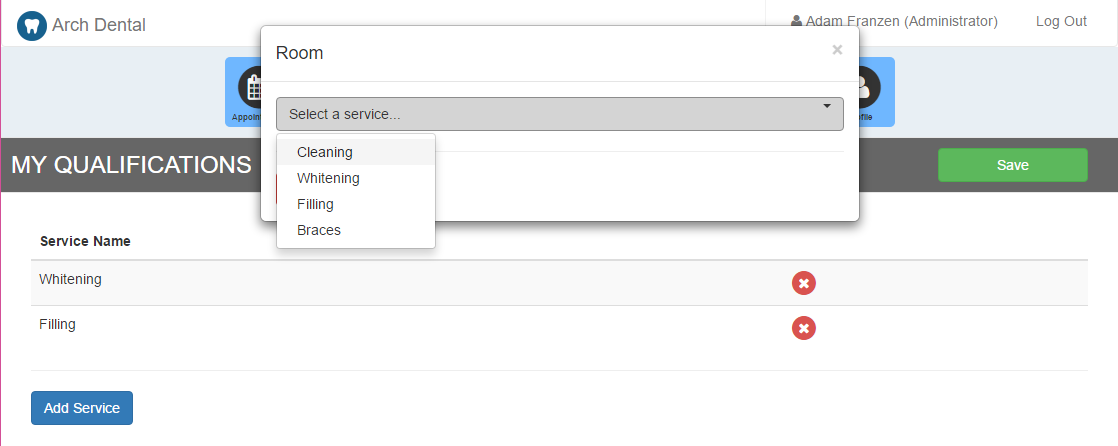


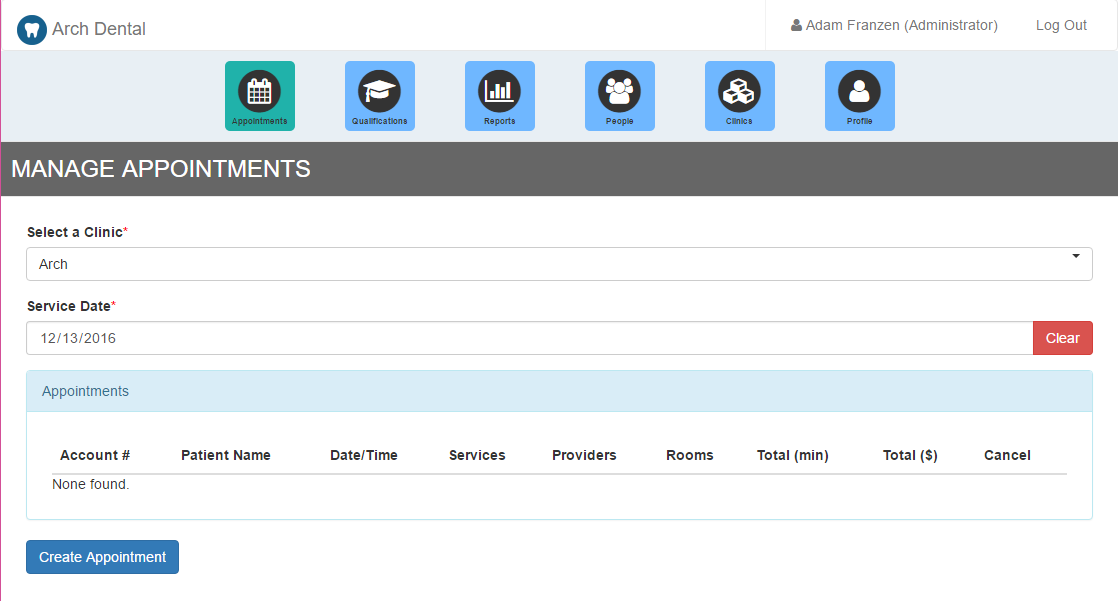


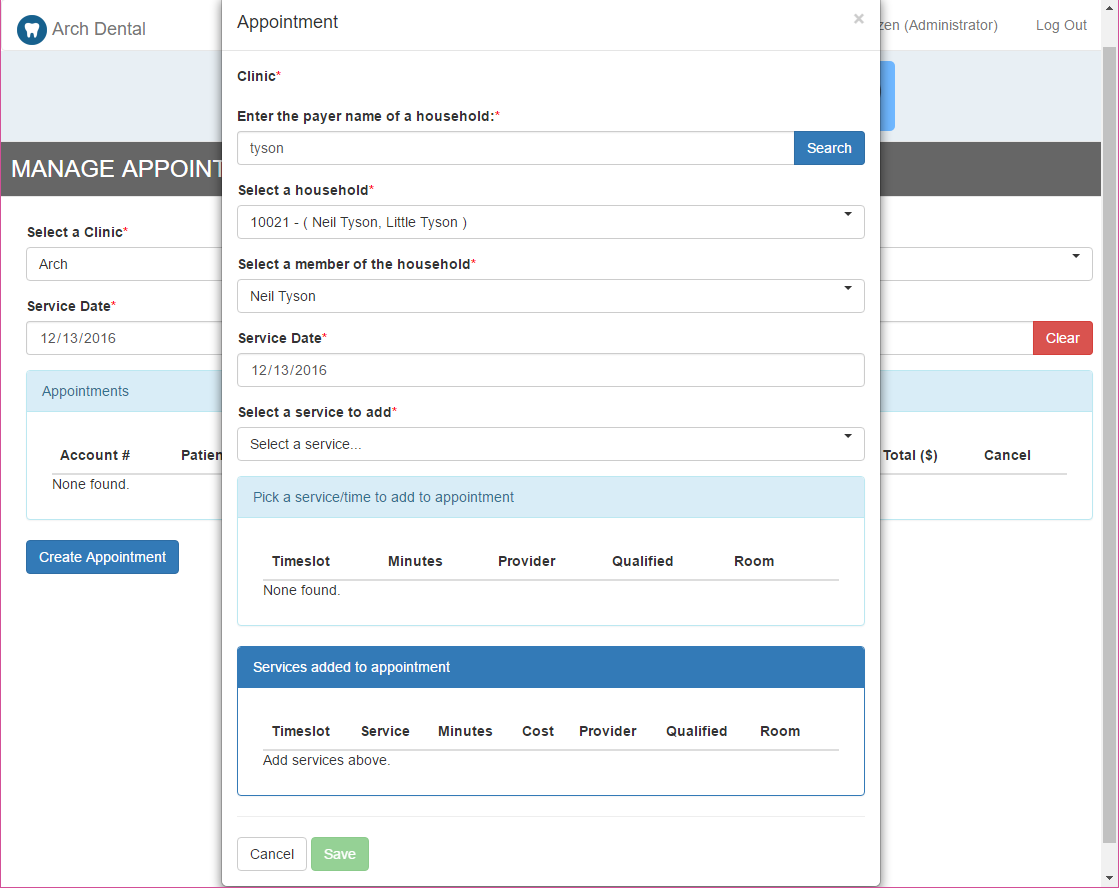










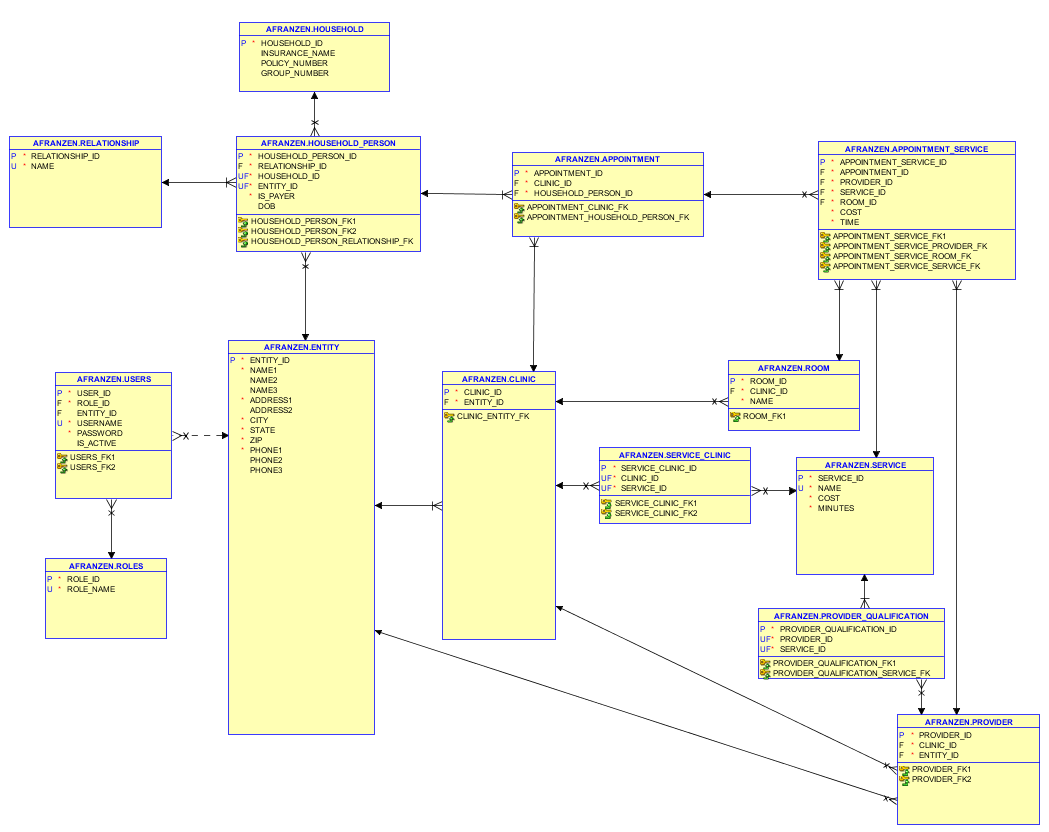


## Screen Prints / Reports

TODO

# Project Design

## ER Diagram



## Database Schema



## Data Dictionary

### Appointment Table

Table Description

This table contains data about the appointments at a Clinic.

Other Tables Referenced

Clinic, Household Person

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ATTRIBUTE NAME | CONTENTS | TYPE | LENGTH | FORMAT | RANGE | REQ’D | KEY | REFERENCED TABLE |
| APPOINTMENT\_ID | Appointment  Number | NUMBER | 35 | 9999 | 1-9999 | YES | PK |  |
| CLINIC\_ID | Clinic Number | NUMBER | 35 | 9999 | 1-9999 | YES | FK | Clinic  Delete – Cascades |
| HOUSEHOLD\_PERSON\_ID | Person being served Number | NUMBER | 35 | 9999 | 1-9999 | YES | FK | Household Person  Delete – Cascades |

### Appointment Service Table

Table Description

This table contains data about the services of an appointment. When they start, how long they will take, who they are performed by, how much they cost.

Other Tables Referenced

Appointment, Room, Service, Provider

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ATTRIBUTE NAME | CONTENTS | TYPE | LENGTH | FORMAT | RANGE | REQ’D | KEY | REFERENCED TABLE |
| APPOINTMENT\_SERVICE\_ID | Appointment  Service Number | NUMBER | 35 | 9999 | 1-9999 | YES | PK |  |
| APPOINTMENT\_ID | Appointment  Number | NUMBER | 35 | 9999 | 1-9999 | YES | PK |  |
| PROVIDER\_ID | Provider Number | NUMBER | 35 | 9999 | 1-9999 | YES | FK | Clinic  Delete – Cascades |
| SERVICE\_ID | Service Number | NUMBER | 35 | 9999 | 1-9999 | YES | FK | Household Person  Delete – Cascades |
| ROOM\_ID | Room Number | NUMBER | 35 | 9999 | 1-9999 | YES | FK | Room  Delete – Cascades |
| COST | Price of Service | NUMBER | 6, 2 | 9(6,2) | 0.00 – 9999.00 | YES |  |  |
| TIME | Start Time | DATE |  | >= 08:00  <= 06:00 | 1-9999 | YES |  |  |

### Clinic Table

Table Description

This table contains data to identify a unique Clinic.

Other Tables Referenced

Entity

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ATTRIBUTE NAME | CONTENTS | TYPE | LENGTH | FORMAT | RANGE | REQ’D | KEY | REFERENCED TABLE |
| CLINIC\_ID | Clinic Number | NUMBER | 35 | 9999 | 1-9999 | YES | PK |  |
| ENTITY\_ID | Entity Number | NUMBER | 35 | 9999 | 1-9999 | YES | FK | Entity  Delete – Cascades |

### Entity Table

Table Description

This table contains name and contact information about a person in a household, a user in the system, an employee/provider of a clinic, or a clinic.

Other Tables Referenced

None

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ATTRIBUTE NAME | CONTENTS | TYPE | LENGTH | FORMAT | RANGE | REQ’D | KEY | REFERENCED TABLE |
| ENTITY\_ID | Entity  Number | NUMBER | 35 | 9999 | 1-9999 | YES | PK |  |
| NAME1 | Name | NUMBER | 50 | X(50) |  | YES |  |  |
| NAME2 | Name | VARCHAR2 | 50 | X(50) |  |  |  |  |
| NAME3 | Name | VARCHAR2 | 50 | X(50) |  |  |  |  |
| ADDRESS1 | Address | VARCHAR2 | 50 | X(50) |  | YES |  |  |
| ADDRESS2 | Address | VARCHAR2 | 50 | X(50) |  |  |  |  |
| CITY | City | VARCHAR2 | 50 | X(50) |  | YES |  |  |
| STATE | State | VARCHAR2 | 2 | X(2) |  | YES |  |  |
| ZIP | Zip | VARCHAR2 | 10 | X(10) |  | YES |  |  |
| PHONE1 | Phone | VARCHAR2 | 15 | X(15) |  | YES |  |  |
| PHONE2 | Phone | VARCHAR2 | 15 | X(15) |  |  |  |  |
| PHONE3 | Phone | VARCHAR2 | 15 | X(15) |  |  |  |  |

Other Notes

Zip and Phone are intentionally any type of character to allow for hyphens, extensions, or other possible needed special characters.

### Household Table

Table Description

This table contains a unique key for each household the system and information about that home’s Insurance.

Other Tables Referenced

Insurance

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ATTRIBUTE NAME | CONTENTS | TYPE | LENGTH | FORMAT | RANGE | REQ’D | KEY | REFERENCED TABLE |
| HOUSEHOLD\_ID | Household Number | NUMBER | 35 | 9999 | 1-9999 | YES | PK |  |
| INSURANCE\_NAME | Insurance Company Name | VARCHAR2 | 50 | X(50) |  | YES |  |  |
| POLICY\_NUMBER | Insurance Policy Number | VARCHAR2 | 50 | X(50) |  | YES |  |  |
| GROUP\_NUMBER | Insurance Group Number | VARCHAR2 | 50 | X(50) |  | YES |  |  |

### Household Person Table

Table Description

This table contains data that describes a person who resides in (or is associated with) a household.

Other Tables Referenced

Relationship, Insurance, Entity

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ATTRIBUTE NAME | CONTENTS | TYPE | LENGTH | FORMAT | RANGE | REQ’D | KEY | REFERENCED TABLE |
| HOUSEHOLD\_PERSON\_ID | Household Person  Number | NUMBER | 35 | 9999 | 1-9999 | YES | PK |  |
| RELATIONSHIP\_ID | Relationship Name | NUMBER | 35 | 9999 | 1-9999 | YES | FK | Relationship  Delete – Cascades |
| HOUSEHOLD\_ID | Household Number | NUMBER | 35 | 9999 | 1-9999 | YES | FK | Household  Delete – Cascades |
| ENTITY\_ID | Entity Number | NUMBER | 35 | 9999 | 1-9999 | YES | FK | Entity  Delete – Cascades |
| IS\_PAYER | Flag for whether primary account holder | CHAR | 1 | A(1) | ‘Y’ or ‘N’ | YES |  |  |
| DOB | Date of Birth | DATE |  | >= 00:01  <= 23:59 | 1-9999 | YES |  |  |

### Provider Table

Table Description

This table contains data about employees of a who are also providers.

Other Tables Referenced

Clinic, Entity

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ATTRIBUTE NAME | CONTENTS | TYPE | LENGTH | FORMAT | RANGE | REQ’D | KEY | REFERENCED TABLE |
| PROVIDER\_ID | Provider  Number | NUMBER | 35 | 9999 | 1-9999 | YES | PK |  |
| CLINIC\_ID | Clinic Number | NUMBER | 35 | 9999 | 1-9999 | YES | FK | Clinic  Delete – Cascades |
| ENTITY\_ID | Entity Number | NUMBER | 35 | 9999 | 1-9999 | YES | FK | Entity  Delete – Cascades |

### Provider Qualification Table

Table Description

This table contains data about the services each provider is qualified to perform.

Other Tables Referenced

Provider, Service

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ATTRIBUTE NAME | CONTENTS | TYPE | LENGTH | FORMAT | RANGE | REQ’D | KEY | REFERENCED TABLE |
| PROVIDER\_QUALIFICATION\_ID | Provider Qualification  Number | NUMBER | 35 | 9999 | 1-9999 | YES | PK |  |
| PROVIDER\_ID | Provider Number | NUMBER | 35 | 9999 | 1-9999 | YES | FK | Provider  Delete – Cascades |
| SERVICE\_ID | Service Number | NUMBER | 35 | 9999 | 1-9999 | YES | FK | Service  Delete – Cascades |

### Relationship Table

Table Description

This table contains a list of possible relationships a person can have to the primary (payer) account holder.

Other Tables Referenced

None

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ATTRIBUTE NAME | CONTENTS | TYPE | LENGTH | FORMAT | RANGE | REQ’D | KEY | REFERENCED TABLE |
| RELATIONSHIP\_ID | Relationship Number | NUMBER | 35 | 9999 | 1-9999 | YES | PK |  |
| NAME | Relationship Title | VARCHAR2 | 50 | X(50) |  | YES |  |  |

### Roles Table

Table Description

Contains system roles a user could have

Other Tables Referenced

None

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ATTRIBUTE NAME | CONTENTS | TYPE | LENGTH | FORMAT | RANGE | REQ’D | KEY | REFERENCED TABLE |
| ROLE\_ID | Role Number | NUMBER | 35 | 9999 | 1-9999 | YES | PK |  |
| ROLE\_NAME | Name of Role | VARCHAR2 | 50 | X(50) |  | YES |  |  |

### Room Table

Table Description

This table contains data about rooms in a Clinic.

Other Tables Referenced

Clinic

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ATTRIBUTE NAME | CONTENTS | TYPE | LENGTH | FORMAT | RANGE | REQ’D | KEY | REFERENCED TABLE |
| ROOM\_ID | Room  Number | NUMBER | 35 | 9999 | 1-9999 | YES | PK |  |
| CLINIC\_ID | Clinic  Number | NUMBER | 35 | 9999 | 1-9999 | YES | FK | Clinic  Delete – Cascades |
| NAME | Clinic Name | VARCHAR2 | 50 | X(50) |  | YES |  |  |

### Service Table

Table Description

This table contains data services available in a Clinic.

Other Tables Referenced

Clinic

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ATTRIBUTE NAME | CONTENTS | TYPE | LENGTH | FORMAT | RANGE | REQ’D | KEY | REFERENCED TABLE |
| SERVICE\_ID | Service  Number | NUMBER | 35 | 9999 | 1-9999 | YES | PK |  |
| NAME | Service Name | VARCHAR2 | 50 | X(50) |  | YES |  |  |
| COST | Service Cost | NUMBER | 6, 2 | 9(6,2) | 0.00 – 9999.00 | YES |  |  |
| MINUTES | Time to Complete | NUMBER | 35 | 9999 | 1-9999 | YES |  |  |

### 

### Service Clinic Table

Table Description

This table contains data services available in a Clinic.

Other Tables Referenced

Clinic, Service

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ATTRIBUTE NAME | CONTENTS | TYPE | LENGTH | FORMAT | RANGE | REQ’D | KEY | REFERENCED TABLE |
| SERVICE\_CLINIC\_ID | Primary Key | NUMBER | 35 | 9999 | 1-9999 | YES | PK |  |
| SERVICE\_ID | Service  Number | NUMBER | 35 | 9999 | 1-9999 | YES | FK | Service  Delete – Cascades |
| CLINIC\_ID | Clinic Number | NUMBER | 35 | 9999 | 1-9999 | YES | FK | Clinic  Delete – Cascades |

### Users Table

Table Description

Contains user information, the role they possess, a link to their identifying/contact info, username, and password.

Other Tables Referenced

Role, Entity

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ATTRIBUTE NAME | CONTENTS | TYPE | LENGTH | FORMAT | RANGE | REQ’D | KEY | REFERENCED TABLE |
| USER\_ID | User Number | NUMBER | 35 | 9999 | 1-9999 | YES | PK |  |
| ROLE\_ID | Role Number | NUMBER | 35 | 9999 | 1-9999 | YES | FK | Role  Delete – Cascades |
| ENTITY\_ID | Entity Number | NUMBER | 35 | 9999 | 1-9999 | YES | FK | Entity  Delete – Cascades |
| USERNAME | Username | VARCHAR2 | 50 | X(50) |  | YES |  |  |
| PASSWORD | Password | VARCHAR2 | 500 | X(500) |  | YES |  |  |

Use Cases (Essential Form)



## Use Cases (Essential Form)

|  |  |
| --- | --- |
| **Use Case Name:** | Start IIS and load app for first time – no users present yet |
| **Actors:** | Company Owner |
| **Scenario:** | Company just turned software on for the first time. How do they login if there is no admin to assign elevated roles etc? System checks to see if any users exist. If not, we assume the first user to login is the owner. Login button hidden and Register button shown. Whatever login is created is made an Admin by default. |

|  |  |
| --- | --- |
| **Use Case Name:** | Login |
| **Actors:** | Anyone |
| **Scenario:** | Someone comes to the home page and they are met with info about the company, and options to login or register. User clicks Login and is taken to Landing Page and is given tiles/links to where they can go in the system based upon their Role. |

|  |  |
| --- | --- |
| **Use Case Name:** | Logged In. At Landing Page |
| **Actors:** | User |
| **Scenario:** | The following Tiles/Links are displayed: Appointments, Billing, and Profile. User redirected to Landing Page if tries to go to a URL that is not permitted to based upon Role. |
| **Notes:** | Billing has been removed due to time constraints |

|  |  |
| --- | --- |
| **Use Case Name:** | Logged In. At Landing Page |
| **Actors:** | Office |
| **Scenario:** | The following Tiles/Links are displayed: Appointments, Billing, Qualifications, Reports, People, and Profile. User redirected to Landing Page if tries to go to a URL that is not permitted to based upon Role. |
| **Notes:** | Billing has been removed due to time constraints |

|  |  |
| --- | --- |
| **Use Case Name:** | Logged In. At Landing Page |
| **Actors:** | Admin |
| **Scenario:** | All available Tiles/Links are displayed. |

|  |  |
| --- | --- |
| **Use Case Name:** | At Profile Page |
| **Actors:** | User |
| **Scenario:** | All tabs are shown (Name, User/Pass, Address, Phone) to edit profile – with the addition of the Dependents and Insurance tabs and ability to collect Date of Birth. Only when editing a User profile should we see these two additional tabs. Can modify any field except for Role (User) and Relationship (Primary). Save button disabled if form not valid or if no changes have been made. |

|  |  |
| --- | --- |
| **Use Case Name:** | At Profile Page |
| **Actors:** | User, Admin |
| **Scenario:** | Name, User/Pass, Address, Phone tabs are shown. Save button disabled if form not valid or if no changes have been made. |

|  |  |
| --- | --- |
| **Use Case Name:** | At Appointments Page |
| **Actors:** | User |
| **Scenario:** | Can see all own appointments by date. Can cancel individual appointments for themselves or any dependent in their household. Create appointment functionality disabled (simply hide button) since only Company personnel should be creating appointments. |

|  |  |
| --- | --- |
| **Use Case Name:** | At Appointments Page |
| **Actors:** | Office, Admin |
| **Scenario:** | Can see all company appointments by date (past/future/present/none) and selected clinic. Ability to cancel anyone’s appointment. |

|  |  |
| --- | --- |
| **Use Case Name:** | At Appointments Page – Create |
| **Actors:** | Office, Admin |
| **Scenario:** | Step-by-step process.  1. Search for a household by payer (primary) name. This search is a wildcard search. If entering one word, assumes last name search. If two words entered, first name / last name. If three words, first / middle / last. Not case sensitive.  2. Select a household based on search result (results should show account #, and name of everyone in house).  3. Select a member of the house the appointment is for.  4. Select a date for service.  5. Select the desired service.  6. A long list is presented of all available times for the day by provider, room, length of time, and whether provider is qualified for service. Add one or more.  7. Added services/times are pushed into a new list showing what they are. These may be removed individually.  8. Added services/times show the standard cost – which is modifiable.  9. Save/Create should only be visible if form is valid and service(s)/time(s) have been selected.  10. Save will push new appointment into Appointments Page list. |

|  |  |
| --- | --- |
| **Use Case Name:** | At Qualifications Page |
| **Actors:** | Office, Admin |
| **Scenario:** | User presented with a list of services they deem themselves qualified for. Can remove them individually or add new ones. Can only add services they don’t already have, and services that have been assigned to a Clinic previously. |

|  |  |
| --- | --- |
| **Use Case Name:** | At Reports Page |
| **Actors:** | Office, Admin |
| **Scenario:** | 10 reports should be made available to execute based upon requirements |

|  |  |
| --- | --- |
| **Use Case Name:** | At Reports Page |
| **Actors:** | Office, Admin |
| **Scenario:** | Report 1  List of all households with the household ID, name, address, and home phone along with the patient ID, name and relationship for each patient. |

|  |  |
| --- | --- |
| **Use Case Name:** | At Reports Page |
| **Actors:** | Office, Admin |
| **Scenario:** | Report 2  List of the insurance coverage for all households by household ID, household name, insurance company ID and company name. |

|  |  |
| --- | --- |
| **Use Case Name:** | At Reports Page |
| **Actors:** | Office, Admin |
| **Scenario:** | Report 3  List all patients in alphabetical order by patient ID, name, and date of birth along with the name of the insurance company and policy number. |

|  |  |
| --- | --- |
| **Use Case Name:** | At Reports Page |
| **Actors:** | Office, Admin |
| **Scenario:** | Report 4  Itemized billings for all households with the household ID, household name, patient ID, patient name, service received, and the cost of the service. Show the output in alphabetical order by household name, patient name and billing date. |

|  |  |
| --- | --- |
| **Use Case Name:** | At Reports Page |
| **Actors:** | Office, Admin |
| **Scenario:** | Report 5  Itemized billings for all households with the household ID, household name, patient ID, patient name, service received, and the cost of the service. Show the output in alphabetical order by household name, patient name and billing date. |

|  |  |
| --- | --- |
| **Use Case Name:** | At Reports Page |
| **Actors:** | Office, Admin |
| **Scenario:** | Report 6  List each provider with all services he or she is qualified to render. |

|  |  |
| --- | --- |
| **Use Case Name:** | At Reports Page |
| **Actors:** | Office, Admin |
| **Scenario:** | Report 7  List each service available with all providers who are qualified to offer this service. |

|  |  |
| --- | --- |
| **Use Case Name:** | At Reports Page |
| **Actors:** | Office, Admin |
| **Scenario:** | Report 8  List all future appointments by name of patient, appointment date and time, estimated length of service, and contact home phone number. Dates and times should be in calendar order |

|  |  |
| --- | --- |
| **Use Case Name:** | At Reports Page |
| **Actors:** | Office, Admin |
| **Scenario:** | Report 9  For a given date, list all services provided by each provider in alphabetical order by name of the provider. Show the service ID, service description and cost of service. |

|  |  |
| --- | --- |
| **Use Case Name:** | At Reports Page |
| **Actors:** | Office, Admin |
| **Scenario:** | Report 10  For a given date, list the total amount of services each provider rendered. Show in alphabetical order by the provider’s name. |

|  |  |
| --- | --- |
| **Use Case Name:** | At People Page |
| **Actors:** | Office |
| **Scenario:** | Only Manage Client profiles available |

|  |  |
| --- | --- |
| **Use Case Name:** | At People Page |
| **Actors:** | Admin |
| **Scenario:** | Can manage staff or clients |

|  |  |
| --- | --- |
| **Use Case Name:** | At People Page |
| **Actors:** | Office, Admin |
| **Scenario:** | Shown a list of profiles in the system regardless of Clinic. Can Edit or Delete profiles individually. |

|  |  |
| --- | --- |
| **Use Case Name:** | At People Page – Create/Edit |
| **Actors:** | Office, Admin |
| **Scenario:** | Same rules apply as the Profile Page (see profile page use cases) when managing a profile (managing a client/household gets extra fields). |

|  |  |
| --- | --- |
| **Use Case Name:** | At Clinics Page |
| **Actors:** | Admin |
| **Scenario:** | First need to select a Clinic to edit.  Can create/edit/delete Clinics that are in the system.  Tabs give ability to designate Clinic name, address, phone, providers, services, and rooms. Can edit/delete providers, services, and rooms individually. Can create/add new providers, services, and rooms. |

|  |  |
| --- | --- |
| **Use Case Name:** | At Clinics Page – Add Provider |
| **Actors:** | Admin |
| **Scenario:** | A pick list is shown only for people with the Office Role that have not been designated as a Provider yet. Adding a new Provider that is not in the list requires visiting the People Page to add them. |

|  |  |
| --- | --- |
| **Use Case Name:** | At Clinics Page – Add Service |
| **Actors:** | Admin |
| **Scenario:** | If there are services provided by another clinic that are not in the selected one, a dropdown list is provided to pick from. Can also opt to create a completely new service. |

|  |  |
| --- | --- |
| **Use Case Name:** | At Clinics Page – Add Room |
| **Actors:** | Admin |
| **Scenario:** | Can enter the name for a new room. |

|  |  |
| --- | --- |
| **Use Case Name:** | Any error occurs on the back end |
| **Actors:** | User, Office, Admin |
| **Scenario:** | All exceptions or validation errors on the back end should be caught, handled, and bubbled up and displayed gracefully to the user. |

|  |  |
| --- | --- |
| **Use Case Name:** | Modals |
| **Actors:** | User, Office, Admin |
| **Scenario:** | All modals should have a similar look and feel. Cancel and Save buttons should always be at the bottom in the same order. Unless the modal has left-nav tabs – then the save button should be at the top-right. Every modal popup should have a close “X” button available and should disappear if clicking away from it. If a modal gets too big for the screen, a scroll should be present to allow it to be brought into view by the user. |

|  |  |
| --- | --- |
| **Use Case Name:** | Front-End Validation |
| **Actors:** | User, Office, Admin |
| **Scenario:** | All fields that are required, have a max length, or “selected” requirement should highlight themselves with a Red border when not valid. All pages with a left-nav should show a Warning Icon if any content within its tab is invalid. Save buttons should always be disabled if a body of work is invalid. |

## Use Cases (Expanded Form)

|  |  |  |
| --- | --- | --- |
| **USE CASE #** | 1 | |
| **Goal in Context** | User wants to create an appointment | |
| **Scope & Level** | Primary Task | |
| **Preconditions** | User is already registered and logged in | |
| **Success End Condition** | Appointment is created | |
| **Failed End Condition** | Appointment is not created | |
| **Primary/Secondary Actors** | Office, Admin | |
| **Trigger** |  | |
| **DESCRIPTION** | **Step** | **Action** |
|  | 1 | At Landing Page |
|  | 2 | Click Appointments Tile |
|  | 3 | Select “Create Appointment” |
|  | 4 | Search for a household by payer (primary) name. This search is a wildcard search. If entering one word, assumes last name search. If two words entered, first name / last name. If three words, first / middle / last. Not case sensitive. |
|  | 5 | Select a household based on search result (results should show account #, and name of everyone in house). |
|  | 6 | Select a member of the house the appointment is for. |
|  | 7 | Select a date for service. |
|  | 8 | Select the desired service. |
|  | 9 | A long list is presented of all available times for the day by provider, room, length of time, and whether provider is qualified for service. Add one or more. |
|  | 10 | Added services/times are pushed into a new list showing what they are. These may be removed individually. |
|  | 11 | Added services/times show the standard cost – which is modifiable. |
|  | 12 | Save/Create should only be visible if form is valid and service(s)/time(s) have been selected. No steps above can be skipped. |
|  | 13 | Save will push new appointment into Appointments Page list. |
| **EXTENSIONS** | **Step** | **Branching Action** |
|  | 1 | None |
| **SUB-VARIATIONS** | **Step** | **Branching Action** |
|  | 1 | None |

|  |  |  |
| --- | --- | --- |
| **USE CASE #** | 2 | |
| **Goal in Context** | User wants to add a Client to the system | |
| **Scope & Level** | Primary Task | |
| **Preconditions** | User is already registered and logged in | |
| **Success End Condition** | Client is added and can log into profile | |
| **Failed End Condition** | Client is not added | |
| **Primary/Secondary Actors** | Office, Admin | |
| **Trigger** |  | |
| **DESCRIPTION** | **Step** | **Action** |
|  | 1 | At Landing Page |
|  | 2 | Click People Tile |
|  | 3 | Select “Create Appointment” |
|  | 4 | Ensure “Manage Clients” is selected on the left |
|  | 5 | Click Create Profile |
|  | 6 | Enter information in Name tab |
|  | 7 | Enter information in the User/Pass tab |
|  | 8 | Enter information in the Address tab |
|  | 9 | Enter information in the Phone tab |
|  | 10 | Enter information in the Insurance tab |
|  | 11 | Enter information in the Dependents tab (optional) |
|  | 12 | Click Save |
|  | 13 | Save will push new Client into list |
| **EXTENSIONS** | **Step** | **Branching Action** |
|  | 1 | None |
| **SUB-VARIATIONS** | **Step** | **Branching Action** |
|  | 1 | None |

|  |  |  |
| --- | --- | --- |
| **USE CASE #** | 3 | |
| **Goal in Context** | User wants to add new Staff to the system | |
| **Scope & Level** | Primary Task | |
| **Preconditions** | User is already registered and logged in | |
| **Success End Condition** | Staff is added and can log into profile | |
| **Failed End Condition** | Staff is not added | |
| **Primary/Secondary Actors** | Admin | |
| **Trigger** |  | |
| **DESCRIPTION** | **Step** | **Action** |
|  | 1 | At Landing Page |
|  | 2 | Click People Tile |
|  | 3 | Select “Create Appointment” |
|  | 4 | Ensure “Manage Clients” is selected on the left |
|  | 5 | Click Create Profile |
|  | 6 | Enter information in Name tab |
|  | 7 | Enter information in the User/Pass tab |
|  | 8 | Enter information in the Address tab |
|  | 9 | Enter information in the Phone tab |
|  | 12 | Click Save |
|  | 13 | Save will push new Staff into list |
| **EXTENSIONS** | **Step** | **Branching Action** |
|  | 1 | None |
| **SUB-VARIATIONS** | **Step** | **Branching Action** |
|  | 1 | None |

|  |  |  |
| --- | --- | --- |
| **USE CASE #** | 4 | |
| **Goal in Context** | User wants to create a Clinic | |
| **Scope & Level** | Primary Task | |
| **Preconditions** | User is already registered and logged in | |
| **Success End Condition** | Clinic is created and has Providers, Services, and Rooms | |
| **Failed End Condition** | Staff is not added | |
| **Primary/Secondary Actors** | Admin | |
| **Trigger** |  | |
| **DESCRIPTION** | **Step** | **Action** |
|  | 1 | At Landing Page |
|  | 2 | Click Clinics Tile |
|  | 3 | Select a Clinic from the dropdown (if one exists). If not, click “Add New” |
|  | 4 | Ensure “Manage Clients” is selected on the left |
|  | 5 | Click Create Profile |
|  | 6 | Enter information in Name tab |
|  | 7 | Add at least one Provider in the Providers tab |
|  | 8 | Add at least one Service in the Services tab |
|  | 9 | Add at least one Room in the Rooms tab |
|  | 10 | Click Save (upper right since this is a side-nav scenario) |
|  | 11 | Save will push new Clinic into dropdown |
| **EXTENSIONS** | **Step** | **Branching Action** |
|  | 1 | None |
| **SUB-VARIATIONS** | **Step** | **Branching Action** |
|  | 1 | None |

|  |  |  |
| --- | --- | --- |
| **USE CASE #** | 5 | |
| **Goal in Context** | User wants to manage profile | |
| **Scope & Level** | Primary Task | |
| **Preconditions** | User is already registered and logged in | |
| **Success End Condition** | Profile is updated | |
| **Failed End Condition** | Profile is not modified | |
| **Primary/Secondary Actors** | User, Office, Admin | |
| **Trigger** |  | |
| **DESCRIPTION** | **Step** | **Action** |
|  | 1 | At Landing Page |
|  | 2 | Click Profile Tile |
|  | 3 | Select a Clinic from the dropdown (if one exists). If not, click “Add New” |
|  | 4 | Enter desired information into Name tab |
|  | 5 | Enter desired information into User/Pass tab |
|  | 6 | Enter desired information into Address tab |
|  | 7 | Enter desired information into Phone tab |
|  | 8 | <Branching Action 1> |
|  | 9 | Click Save (upper right since this is a side-nav scenario) |
| **EXTENSIONS** | **Step** | **Branching Action 1** |
|  | 1 | If logged in as a Client Role, more tabs are available |
|  | 2 | Enter information into Insurance tab |
|  | 3 | Enter information into dependents tab (optional) |
| **SUB-VARIATIONS** | **Step** | **Branching Action** |
|  | 1 | None |

## Domain / Concept Model (UML)



## System Sequence Diagrams (UML)

Create Appointment

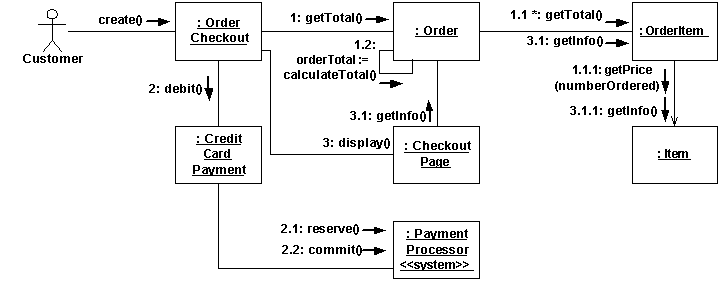


Create Household



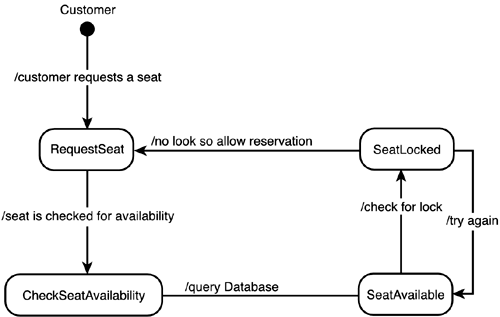
## Collaboration Diagrams (UML)

TODO (example)



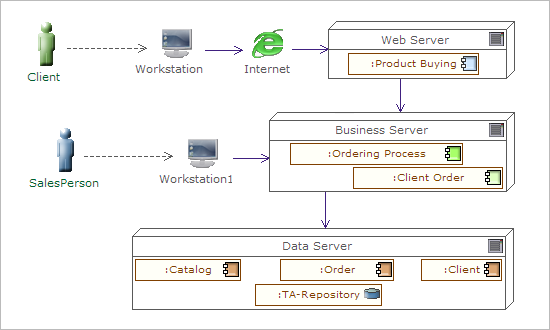
## State Chart Diagrams (UML)

TODO (example)



## Deployment Diagram (UML)

TODO (example)



## Glossary

TODO

# Program Implementation

## Program Structure

TODO

## Program Code / Comments

TODO

# Project Management Section

## Weekly Status Reports

### End of Week 1

* Last Week
  + Studied requirements (1 hour)
  + ER Diagram 1st Draft (1 hour)
  + Considering possible UI design (2 hours)
  + Considering back end design (0.5 hours)
  + Research Entity Framework (3 hour)
* This Week
  + Finalize database design
  + Finalize front-end and back-end design
  + Research Entity Framework
  + Write requirements
  + Finalize Users/Roles
* Challenges
  + Had some slip-ups when analyzing the requirements

### End of Week 2

* Last Week
  + Finalized database design (3 hours)
  + Research Entity Framework (4 hours)
    - Throwing out Entity Framework – Non-functional for .NET 4.0
  + Wrote requirements based upon initial requirements doc (1.5 hours)
  + Finalized Users/Roles (0.5 hours)
  + Finalized front-end framework (0.5 hours)
    - Single Page Application, Angular JS, Bootstrap-UI, Angular-UI, LESS, AJAX-JSON
  + Finalize back-end framework (0.5 hours)
    - Microsoft Web API
    - Layered approach (Controller / Business Layer / Data Layer)
    - Data Layer will utilize inline SQL
  + Linked app code to Github for source control and project management
* This Week
  + Begin implementing features
    - Establish UI Framework and tooling
    - Establish back end framework layers and achieve Oracle connection
    - Landing Page
    - Logo
    - Login / Security
    - Navigation
    - Encryption / Decryption of passwords and Tax ID (Social Security Number)
* Challenges
  + Entity Framework
    - Struggled a lot trying to get it to work despite many tutorials working successfully
    - Research shows that Oracle and Entity Framework don’t play nicely in .NET 4.0

### End of Week 3

* Last Week
* This Week

## Activities And Time

TODO

## Total Time Spent

TODO

# Project Management

## Difficulties Encountered

TODO

## Technical Reports Used To Solve Difficulties

TODO

## Other Technical Information

TODO

# Electronic Documentation

## Computer Disks And All Materials On CD

TODO

## Project Materials

TODO

## Presentation Materials (Powerpoints, etc)

TODO