# SALUTE
# WEB-BASED MEDICAL MANAGEMENT
# MILESTONE 0

Matteo
Musa
Nada
Aswhwin

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# Chapter 1

# Introduction

Bla bla bla...

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# Chapter 3

# Design

## 3.1 High Level View

### 3.1.1 Database Design

**PostgreSQL** Salute uses PostgreSQL 8.4 as its database management software.

**Entity Relationship Diagram (ERD)** try to place the ER here

**Entities Attributes** Entities are represented in the ER diagram as rectangles. Each entity represents a table in the database that holds all of the information or attributes that represents that entity. In the ER diagram, each attribute is represented with a oval.

**Messages** Holds all of the information regarding messages sent from patient to hcp or vice versa. It has two total 1:N relationships with the Accounts entity.

Attribrutes: SERIAL message$_id-IDtouniquelyidentifythemessagefromothermessages.SI$

TEXT subject- Subject of the message being sent. TEXT datatype allows unlimited number of characters. Cannot be NULL.

TEXT content- Where the sender can writte what they would like to send to the receiver. TEXT datatype allows unlimited number of characters. Cannot be NULL.

TIMESTAMP date$_{t}ime-Dateandtimeofwhenthemessageissent.TIMESTAMPdatatypef$
$MM:DDHH:MM:SS.CannotbeNULL.$

BOOLEAN sender$_{k}ept-Todetermineifthesenderwouldliketodeletethemessagefromtheiro$

BOOLEAN receiver$_{k}ept-Todetermineifthereceiverwouldliketodeletethemessagefromthei$

**Accounts** Holds all of the primary information every patient and hcp account needs to log into Salute. The entities Patient$_{A}ccountandHCP_{A}ccountbothinheritfromA$
$1relationshipwiththePermissionandMedical_{R}ecordsentities.$

Attributes:
SERIAL account$_{i}d-IDtouniquelyidentifytheaccountfromotheraccounts.SERIALdatatypeau$

VARCHAR(40) email- Email of the account holder. It is used to log into Salute along with the user password. VARCHAR(40) datatype allows for a maximum of 40 characters. Cannot be NULL.

VARCHAR(15) password- Password of the account holder. It is used to log into Salute along with the user email address. VARCHAR(15) datatype allows for a maximum of 15 characters. Cannot be NULL.

BOOLEAN active- To determine wheather the account is active or not. BOOLEAN datatype value is either TRUE or FALSE. By default it is TRUE. Changing the stauts to FALSE means the account gets deactivated.

**Patient**$_{A}ccount$ Holds all of the personal information for every patient. It inherits from the Accounts entity with an IS A relationship. It has a partial N:1 relationship with the Medical$_{R}ecordsentityandthep_{dc}onnectionrelationship.$

Attributes:
SERIAL account$_{i}d-IDtouniquelyidentifytheaccountfromotheraccounts.SERIALdatatypeau$

VARCHAR(30) first$_{n}ame-Firstnameofthepatient.VARCHAR(30)datatypeallowsforamo$

VARCHAR(30) last$_{n}ame-Lastnameofthepatient.VARCHAR(30)datatypeallowsforamax$

VARCHAR(30) middle$_{n}ame-Middlenameofthepatient.VARCHAR(30)datatypeallowsfo$

NUMERIC(9,0) ssn- Social Security Number of the patient. NUMERIC(9,0) datatype allows exactly 9 numeric characters. Cannot be NULL.

DATE dob- Date of Birth of the patient. DATE datatype is of the format YY:MM:DD. Cannot be NULL.

CHAR(6) sex- Sex of the patient. CHAR(6) datatyep allows for a maximum of 6 characters. It has to be either ”male” or ”female”. Cannot be NULL.

VARCHAR(11) tel$_{n}umber-Primarytelephonenumberofthepatient.VARCHAR(11)dataty$

VARCHAR(11) fax$_{n}umber-Faxnumberofthepatient.VARCHAR(11)datatypeallowsamax$

TEXT address- Primary address of the patient. TEXT datatype allows unlimited number of characters.

**HCP**$_{A}ccount$ Holds all of the personal information for every hcp. It inherits from the Accounts entity with an IS A relationship. It has a partial N:1 relationship with the Appointments entity and the d$_{dc}onnectionrelationship$.

Attributes:
SERIAL account$_{i}d-IDtouniquelyidentifytheaccountfromotheraccounts.SERIALdatatypeau$

VARCHAR(30) first$_{n}ame-Firstnameofthehcp.VARCHAR(30)datatypeallowsforamaxin$

VARCHAR(30) last$_{n}ame-Lastnameofthehcp.VARCHAR(30)datatypeallowsforamaxim$

VARCHAR(30) middle$_{n}ame-Middlenameofthehcp.VARCHAR(30)datatypeallowsforam$

NUMERIC(9,0) ssn- Social Security Number of the hcp. NUMERIC(9,0) datatype allows exactly 9 numeric characters. Cannot be NULL.

DATE dob- Date of Birth of the hcp. DATE datatype is of the format YY:MM:DD. Cannot be NULL.

CHAR(6) sex- Sex of the hcp. CHAR(6) datatyep allows for a maximum of 6 characters. It has to be either "male" or "female". Cannot be NULL.

VARCHAR(11) tel$_number-Primaryofficetelephonenumberofthehcp.VARCHAR(11)dat$

VARCHAR(11) fax$_number-Primaryfaxnumberofthehcp.VARCHAR(11)datatypeallows$

TEXT specialization- What the hcp specializes in. TEXT datatype allows unlimited number of characters.

VARCHAR(30) org$_name-Nameoftheorganizationforwhichthehcpworksfor.VARCHAR$

TEXT address- Primary address of the hcp place of business. TEXT datatype allows unlimited number of characters.

**Appointments** Holds all of the information for every appointment a patient makes with a hcp. It has a total 1:N relationship with the HCP$_AccountandPatient_Accoun$

Attributes:
SERIAL appointment$_id-IDtouniquelyidentifytheappointmentfromotherappointments.SER$

SERIAL patient$_id-UniqueaccountIDofthepatientthatrequeststheappointment.Thisisthef$

SERIAL hcp$_id-UniqueaccountIDofthehcpthatreceivestheappointmentrequest.Thisisthef$

TEXT descryption- Description of the appointment that the patient requests to the hcp. TEXT datatype allows unlimited number of characters. Cannot be NULL.

TIMESTAMP date$_{t}ime-Timeanddayoftheappointmentthepatientrequestestothehcp.TIM$
$MM : DDHH : MM : SS.CannotbeNULL.$

BOOLEAN approved- Status of the appointment that the patient requests to the hcp. BOOLEAN datatype value is either TRUE or FALSE. By default it is FALSE. HCP can accept the appointment and change the status to TRUE.

**Medical**$_{R}ecord$ Holds all of the information for every medical record a patient has on Salute. ???

SERIAL medical$_{r}ec_{i}d-IDtouniquelyidentifythemedicalrecordfromothermedicalrecords.S$

SERIAL patient$_{i}d-UniqueaccountIDofthepatientthatownsthemedicalrecord.Thisisthefo$

SERIAL account$_{i}d-UniqueaccountIDoftheuser(patient/hcp)thatuploadsthemedicalrecor$

TEXT issue- What the medical record deals with. TEXT datatype allows unlimited number of characters. Cannot be NULL.

TEXT suplementary$_{i}nfo-Anysuplementaryinfomationthatanybody(patient/hcp)wouldwa$

TEXT file$_{p}ath-Pathwherethefilecanbefoundanddownloadedfromtheserver.TEXTdataty$

**Payment** Holds all of the information for every bill that a patient receives and a hcp issues. ???

SERIAL bill$_{i}dSERIAL-IDtouniquelyidentifythebillfromotherbills.SERIALdatatypeau$

SERIAL patient$_{i}d-UniqueaccountIDofthepatientthatreceivedthebill.Thisistheforeignke$

SERIAL hcp$_{i}d-UniqueaccountIDofthehcpthatissuedthebill.ThisistheforeignkeytotheHC$

DECIMAL(9,2) amount- The amount due to the hcp. DECIMAL datatype allows charge to be up to 9 digits long, with 2 digits of percision. Cannot be NULL.

TEXT descryption- Descryption of what the bill is being issued for. TEXT datatype allows unlimited number of characters. Cannot be NULL.

DATE due$_{d}ate-Datebywhichthebillmustbepaidby.DATEdatetypeoftheformYY : MM : DD.CannotbeNULL.$

BOOLEAN cleared- States wheather the bill was paid or not. BOOLEAN datatype value is either TRUE or FALSE. By default it is FALSE. If patient pays the bill, its status is changed to TRUE.

**Permission** Holds information regarding which medical records a hcp that is connected with a patient can view. ???

SERIAL permission$_{i}d-IDtouniquelyidentifythepermissionfromotherpermissions.SERI$

medical$_{r}ec_{i}d-UniqueIDofthemedicalrecordthatahcpcanview.ThisistheforeignkeytotheM$

SERIAL account$_{i}d-UniqueIDofthehcpthatcanviewthemedicalrecord.Thisisaforeignkeyt$

DATE date$_{c}reated-Dateinwhichthepatientallowedthehcptoviewthemedicalrecord.DATEd$ $MM : DD.CannotbeNULL.$

### 3.1.2 MVC Design

MVC stands for Model View Controller, and is a software architecture and an architectural pattern in software engineering. The purpose is to separate a system into parts,assigns responsibilities to each, and ensures that they can work together. This design method strives to anticipate for future changes. [Insert Diagram here]

**Models** The model [explain what it does]

**Controllers** The controller [explain what it does]

**Views** The view [explain what it does]

### 3.1.3 Interface Design

### 3.1.4 Server Design

## 3.2 Implementation View

## 3.3 Tests

### 3.3.1 Controller Tests

There are three types of users: non-members, patients, and health care providers. Each type have been tested individually.

A non-member should only be able to view the default home page, or register. All other functions were tested to assure that a non-member could not access any other functionalities.

A patient is able to do the following:

- Login, Logout
- Requesting a connection with a healthcare provider
- Delete a connection with their healthcare provider
- Viewing all, pending, or connected healthcare providers
- Viewing their medical records
- Make an appointment with a connected doctor

- Cancel an appointment
- View all,upcoming, or past appointments
- Change their email, or password
- Retrieve their password if forgotten via email
- Edit their information
- Deactivate, reactivate their account
- View all, current, or past bills.
- Pay their bills (Note: This is not linked to any credit card/bank system )
- Add or delete a medical record
- View all their medical records
- Set each medical record to hidden or public to specific healthcare providers

A health care provider is able to do the following:

- Login, Logout
- Requesting a connection with a healthcare provider
- Accept a connection request from another health care provider or patient
- Reject a connection request from another health care provider or patient
- Delete a connection with their patient or collegue
- Viewing all healthcare providers
- Viewing pending incoming requests with other healthcare providers
- Viewing pending outgoing requests with other healthcare providers

- Viewing connected collegues, and patients
- Accept a requested appointment from their patients
- Cancel an existing appointment
- View all,upcoming, and past appointments
- Change their email or password
- Retrieve their password if forgotten via email
- Edit their information
- Deactivate, and reactivate their account
- View all, current, or past bills.
- Issue bills to connected patients
- Add a medical record to a specific patient
- Viewing their patient's medical records (the ones they are authorized to see)
- Set each medical record to hidden or public to specific healthcare providers

### 3.3.2 Database Tests

# Chapter 4

# Operating Manual

### 4.0.3 How-to's

#### Registration and login

#### Viewing a user profile

#### Connection management

### 4.0.4 Screen-shots

# Chapter 5

# Credits