# CRUZ-RABE PHARMACY REQUEST SYSTEM

# Cruz-Rabe Maternity and General Hospital

Developer: Bueno | Rosales MSYADD1 @ Asia Pacific College 2016 – 2017

# **Project Professor:**

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MSYADD1 Class Professor

# **Project Consultant:**

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 Mr. Alfredo Calimbo
 SoCit Professor
 SoCsit Professor

# **Project Adviser:**

➤ Mr. Jayvee Cabardo Director, Education Technology

# **Project Team:**

Carl Dominique Bueno
 Project Manager/Developer
 Glen Roy Rosales
 Project Analyst/Documenter

#### **Client Information:**

Company/Organization Name: Cruz-Rabe Maternity and General Hospital Project Name: Cruz-Rabe Pharmacy Request System

Primary Contact Person: Carmelita Buenaflor Position: Chief Pharmacists

### **Health Facility Detailed Information:**

**ACCREDITATION NO:** H92007290 **PMCC NO:** 313634

**INSTITUTION NAME:** Cruz-Rabe Maternity and General Hospital

**ROAD NAME:** 37 Gen. Luna Street

**BARANGAY:** Tuktukan **MUNICIPALITY:** Taguig City

**PROVINCE:** Metro Manila (SOUTH)

**REGION:** NCR (SOUTH)

CATEGORY: Level 2
CLASSIFICATION: Private

### I. Introduction

### **Project Context**

In order to ensure patient's safety, cost effective processes and well managed admission on managing medical services, preventing clinical errors and use resources efficiently, business process should have a sufficient tool which is automation of "pharmacy request system." Transactions that are processed in different factors including; IN and OUT patient order entry, dispensing orders, pharmacy inventory and purchasing management will stand-alone by providing innovative way of service. Our client Cruz-Rabe Maternity General Hospital combines with the latest technology enabling complete control to develop medical management and to bring satisfaction to their clients in terms of professional service.

#### **Success Factors**

We can assume that the system will be feasible if we meet the following requirements:

- If the system seems to be helpful when hospital transactions (pharmacy requests) are now processed in just a few moments.
- Results produced are accurate and reliable for the patients.
- Pharmacy records can be track down easily from its database.
- Less resources are produced but service will be doubled.

We can assume that the system will be successful for a long term if we meet the following requirements:

- If the system are useful to patients and hospital staffs in exchange to service, performance and satisfaction.
- If it will generate enough revenue to the maintenance of the system.

#### **Business Risk**

- **RI-1:** Might take critics since the pharmacy department will be adapting changes towards its business transactions.
- **RI-2:** It will require equipment and services in order to produce the system. This means, the organization need to invest in this project as there is a possibility to make changes in certain aspects such as its maintenance and security.

# **Purpose and Description**

A pharmacy within a hospital case, wherein there will be only IN and OUT patients for pharmacy request entry.

The system will have the following:

- Order Prescription,
- Patient History Records,
- Stock Inventory for Medicine and Supplies Directory,
- Department Directory,
- Doctor Directory.

#### **Purpose and Success Factors**

- **P1:** Make the processing of prescriptions faster and reliable.
- **P2:** Lessen the loss of data of the existing and upcoming pharmacy records.
- **P3:** Increase efficiency of work in input of information and processing of requests by the pharmacists upon implementation.
- **S1:** The pharmacists are able to maximize productivity with the use of the Pharmacy Request System (PRS).
- **S2:** Receive a positive feedback from the client regarding the increase average amount of work done by the Pharmacy Department.

# **Objectives**

#### **General Objectives**

- Paperless Transactions System (PTS)
- Automation of Pharmacy Request System
- Convenient way of discharging patients.

#### **Specific Objectives**

- Eliminate mistakes caused by manual steps and workarounds
- Pharmacy transactions will be generated electronically for accessibility.
- Pharmacy system will be more reliable and convenient.
- Less tedious on data mining and documentation.
- Save and Track Relevant Information in real time.

#### **Vision Statement**

A Web-based system for processing pharmacy request within a system, dedicated to ease the way of accepting requests by pharmacists to process the automated prescription orders and dispensing of orders in a better way. It will not only verify the information received, but also keep the records in a secured database which can be accessed for future preferences. Unlike the old-way of manual processes, Cruz-Rabe Pharmacy Request System intended to improve the quality of work in the medical field by providing the essential steps of transactions in fast-pace. The vision of this system is determined to meet patients satisfaction in terms of service.

### **Scope and Limitations**

Pharmacy Request System is intended for pharmacists to use in their service that assists patients' drug requests that is prescribed by a doctor. Alternatively, the Pharmacy Requests will be assumed to be automated and data will be on a database for data warehouse. This scheme will ease the work of the auditing staff and the discharging process of patients.

#### **Assumptions and Dependencies**

- **AS-1:** Additional equipment, services, and maintenance, will be improvised for the authorized personnel to do the business processes.
- **AS-2:** The hospital will be developed to ensure the system was implemented well. Lesser hardcopies, more softcopies for the records.
- **DE-1**: If the pharmacy records will be accessible with the other departments to support the system for consistency.



**Omnicell** is recognized as a leading provider of comprehensive, technologically advanced automation that enables health care facilities to acquire, manage, dispense, and deliver medications and supplies more effectively. Omnicell automation is used from the point of entry into the hospital through the central pharmacy, nursing units, operating room, procedural areas, and patient bedsides – as well as in long-term care sites. For over 20 years the mission of Omnicell has focused on improving the medication and supply distribution process.

More than 4,000 acute care customers worldwide have used Omnicell's medication automation, supply chain, and analytics solutions to improve efficiency, reduce errors, and lower costs. Omnicell non-acute care solutions, including the MTS brand, enable approximately 7,000 institutional and retail pharmacies worldwide to optimize productivity and control costs. Moreover, the innovative medication adherence packaging solutions can reduce costly hospital readmissions.

At Omnicell, delivering our technology is just the beginning. We are also committed to delivering the best customer experience. To ensure our customers gain the most utility from their Omnicell systems, we offer a suite of analytics software, a comprehensive training and education program, and first-rate customer support. Omnicell has been recognized with KLAS award every year since 2006.

#### Key product lines:

- Central pharmacy automation
- Medication management systems
- Supply management systems
- Business analytics
- Medication adherence packaging



**PioneerRx Pharmacy System** is a windows-based ground-breaking pharmacy software. Cutting edge features include the Apple iPad Signature Capture, Email/Text Customer Notification, Hard Copy Imaging Workflow and more.

Developed with the experience of over 30 years of pharmacy software development and support, PioneerRx was built from scratch to provide the pharmacy community with a solution that can grow as the industry changes for the next 40 years. These features are designed to provide speed, simplicity, consistency and flexibility. However, our ultimate goal of development is to help pharmacies make more money.

Many features and benefits of PioneerRx that can help your improve pharmacy:

- Mobile Delivery offers an easy, secure and fun way for drivers to complete transactions, take payments, and store patient signatures while on a delivery.
- Advanced Searching throughout PioneerRx advanced search grids offer user-friendly options
  for pulling data such as custom layouts, fixed rows and columns, sorting, filtering and
  exporting.
- Apple iPad Electronic Signature Capture, Prepare for audits and impress your customers with the latest technology by capturing signatures on your Apple iPad or iPad Mini at the Drive Thru.
- Prescriber Add/Edit from NPI/DEA Database, PioneerRx supports seamlessly adding
  prescribers or updating their information from the National Provider Registry and DEA
  database. Never wait for hours to get a DEA number again.
- Integrated Pre/Post Edit, Pre and post edits are included in your PioneerRx software. Discover
  opportunities for increased payment due to errors such as Package Size, DAW, Obsolete NDC,
  and more.
- RxNotify, Send email, text and IVR messages when prescriptions are ready. Provide your customers with great service and keep your will call bins empty by using RxNotify.
- Modern Windows System, PioneerRx was built from scratch to take advantage of the capability and strengths of a modern Windows environment, including dashboard screens and Microsoft's ribbon bar navigation.

# III. Technical Background

# **Major Features:**

- **F1:** Convenient way of purchasing Medicine and Supplies within the pharmacy.
- **F2:** Can easily do inventory check for tracking down changes on stocks.
- **F3:** Discharging patients with electronic records.
- **F4:** Checks the validation and availability of the requests.
- **F5:** Secures the authorization of the pharmacists and authorized personnel to do the process.
- **F6:** Sends the information throughout the other departments electronically.

# IV. Appendices

# **EVENT TABLE**

EVENT	TRIGGER	SOURCE	USE CASE	RESPONSE	Patient  Pharmacist	
GIVES PRESCRIPTION	To give prescription	Doctor	Will give prescription	Gives prescription and prints quotation		
PRESCRIPTION PROCESSING	To have proof of prescribed order	Patient	Will present prescription	Presenting Prescription		
INVENTORY CHECKING	Checking of order availability	Pharmacist	To find if order is available	Checking of prescribed order	System	
CONFIRMATION OF ORDER To confirm the order availability and confirm the order		System	To tell the pharmacist and prints out confirmation	Confirmation of order prescribed and prints order information	Pharmacist, System	
BILL PAYMENT	To pay bills of order	Patient	For order to be release	Process of order to be release	Accounting	
CONFIRMATION OF PAYMENT AND PURCHASE	Issuing and showing of receipt as proof of payment			Patient, Pharmacist		
RELEASING OF ORDER	Release of order to the patient	Pharmacist	For patient to receive the order	Ending of process	Patient	

# **USE CASE FULL DEFINITION**

Use Case Name:	Will present prescription						
Scenario:	Prescription Processing						
Triggering Event:	To have proof of Prescribed Order						
Brief Description:	Patient will present the prescription to the Pharmacist						
Actors:	Patient						
Related Use Cases:							
Stakeholders:	Pharmacist						
Preconditions:	Patient will get the prescription from the Doctor						
Post Conditions:	Pharmacist will check the prescription						
Flow of Activities:	Actor System						
	Patient will give the prescription 1.1						

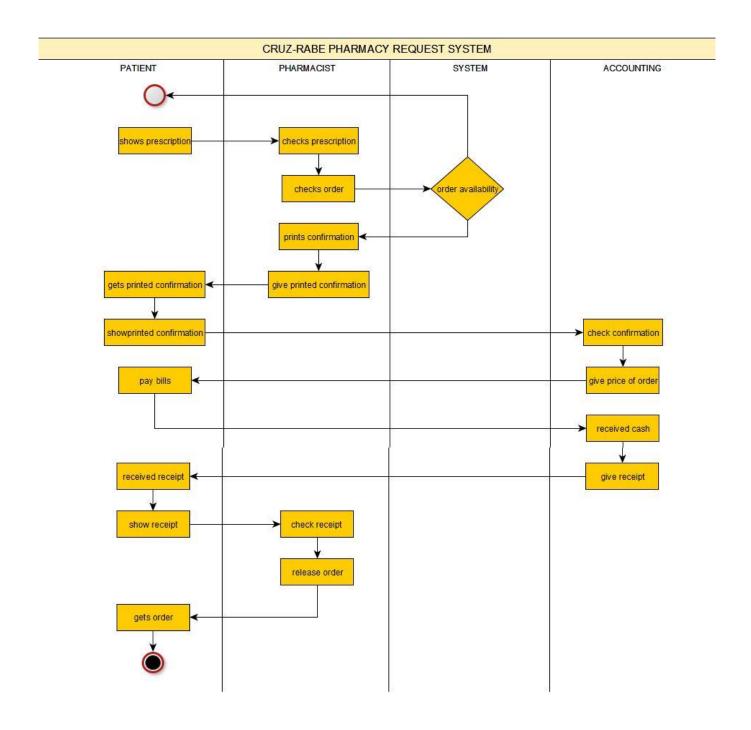
	To accord and the act and a
	To present receipt to get order
	Confirmation of payment
	Showing of receipt to the pharmacist
Brief Description:	Patient will give the receipt to the pharmacist as a proof he/she paid
Actors:	Patient
	To release a receipt to the patient
Stakeholders:	Patient, Pharmacist
	Patient will pay his/her bills
	Accounting will issue a receipt to the patient
Flow of Activities:	Actor System
	Patient will show receipt
	Pharmacist will check the receipt
U C No	T
Use Case Name:	To release a receipt to the patient
Scenario:	Confirmation of payment
Triggering Event:	Issuing receipt as proof of payment
Brief Description:	Accounting will issue a receipt to the patient
Actors:	Accounting
Related Use Cases:	For order to be release
Stakeholders:	Patient, Pharmacist
Preconditions:	Patient will pay his/her bills
Post Conditions:	Accounting will issue a receipt to the patient
Flow of Activities:	Actor System
	Patient will be told to pay his bills
	Accounting will issue a receipt
Use Case Name:	For order to be release
Scenario:	Bill payment
Triggering Event:	To pay bills of order
Brief Description:	Patient will pay his/her order
Actors:	Patient
Related Use Cases:	To print out confirmation
Stakeholders:	Pharmacist
Preconditions:	Pharmacist will tell the patient to pay his/her order
Post Conditions:	Patient will pay his/her order
Flow of Activities:	Actor System
	Patient will be told to pay bills
Use Case Name:	To print out confirmation
Scenario:	Confirmation of Order
Triggering Event:	To confirm the order and prints a quotation
Brief Description:	Pharmacist will confirm the order and prints a quotation
Actors:	Pharmacist
	To tell the pharmacist
Related Use Cases:	· · · · · · · · · · · · · · · · · · ·
Stakeholders:	Patient, Pharmacist
Stakeholders: Preconditions:	Patient, Pharmacist Patient will give the prescribed order
Stakeholders: Preconditions: Post Conditions:	Patient, Pharmacist Patient will give the prescribed order Pharmacist will print order confirmation
Stakeholders: Preconditions:	Patient, Pharmacist  Patient will give the prescribed order  Pharmacist will print order confirmation  Actor System
Stakeholders: Preconditions: Post Conditions:	Patient, Pharmacist Patient will give the prescribed order Pharmacist will print order confirmation

Use Case Name:	To tell the pharmacist					
Scenario:	Confirmation of Order availability					
Triggering Event:	To tell if prescribed order is available					
Brief Description:	System will confirm order prescribed					
Actors:	System					
Related Use Cases:	To find if order is available					
Stakeholders:	Patient, Pharmacist					
Preconditions:	Pharmacist will check the prescribed order					
Post Conditions:	System will check if prescribed order is available					
Flow of Activities:	Actor System					
	System will check the     prescription given the     by Patient					
Use Case Name:	To find if order is available					
Scenario:	Inventory Checking					
Triggering Event:	Checking of order availability					
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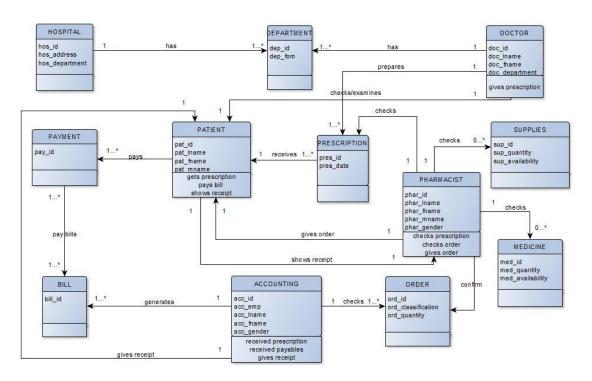
Use Case Name:	To find if order is available					
Scenario:	Inventory Checking					
Triggering Event:	Checking of order availability					
Brief Description:	Pharmacist will check the prescription given by the patient					
Actors:	Pharmacist					
Related Use Cases:	Will present prescription					
Stakeholders:	Patient					
Preconditions:	Patient will give the prescription to the pharmacist					
Post Conditions:	Pharmacist will check the prescription					
Flow of Activities:	Actor System					

Use Case Name:	For patient to receive the order							
Scenario:	Releasing of order							
Triggering Event:	Release of order to the patient							
Brief Description:	Pharmacist will give the order to the patient							
Actors:	Pharmacist							
Related Use Cases:	To present receipt to get order							
Stakeholders:	Pharmacist	Pharmacist						
Preconditions:	Pharmacist will check the receipt							
Post Conditions:	Pharmacist will release the order of the patient							
Flow of Activities:	Actor	System						
	<ol> <li>Pharmacist will check the receipt</li> </ol>							
	<ol><li>Pharmacist release the order of the patient</li></ol>							
	<ol><li>Patient will receive his/her order</li></ol>							

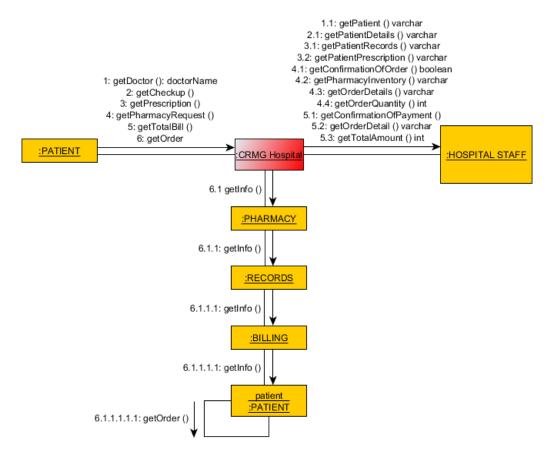
# **ACTIVITY DIAGRAM**



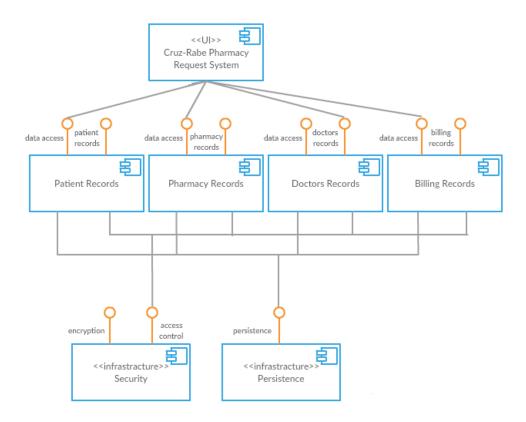
#### **CLASS DIAGRAM**



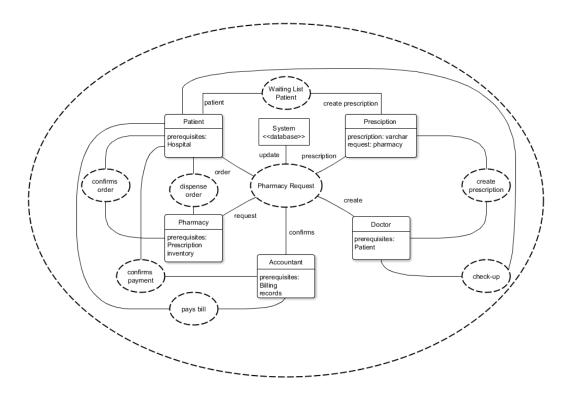
#### **COMMUNICATION DIAGRAM**



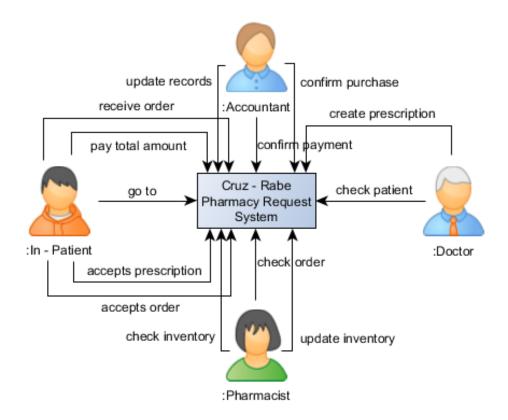
# **COMPONENT DIAGRAM**

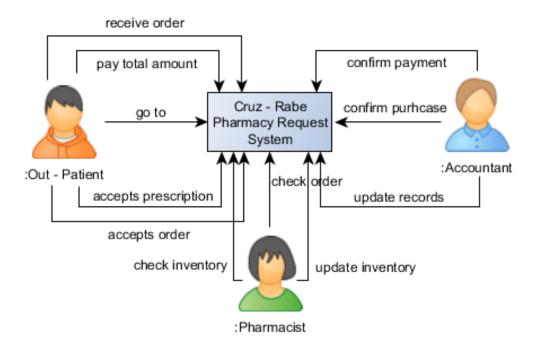


# **COMPOSITE STRUCTURE FLOW**

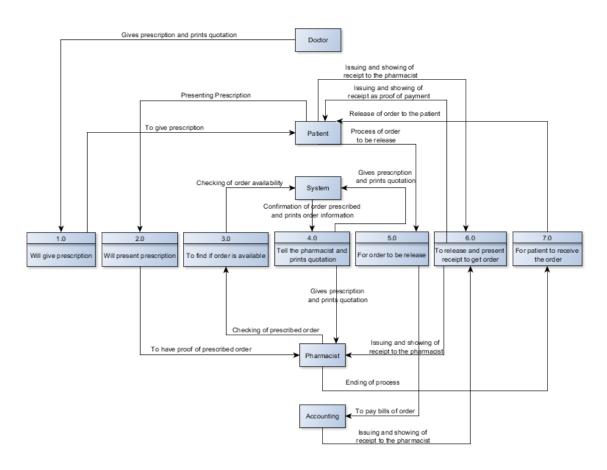


# **CONTEXT FLOW DIAGRAM**

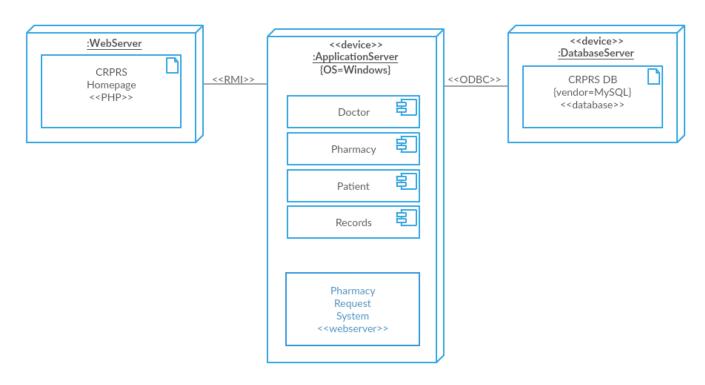




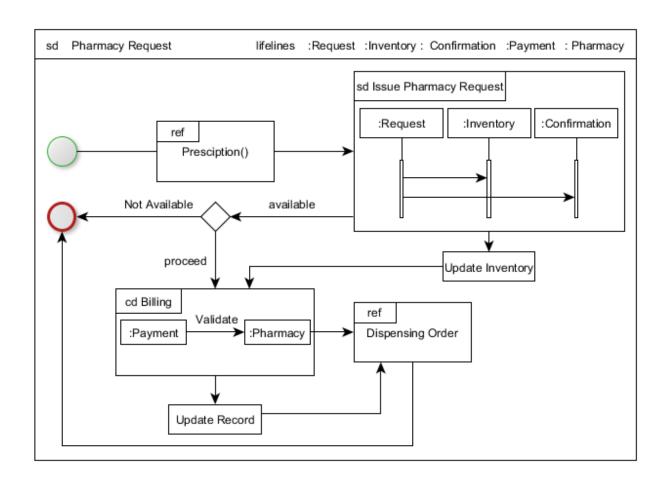
#### **DATA FLOW DIAGRAM**



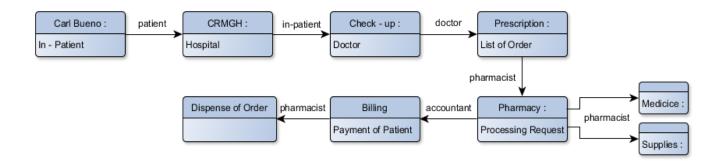
# **DEPLOYMENT DIAGRAM**

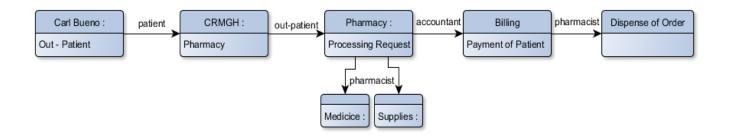


# INTERACTION OVERVIEW DIAGRAM

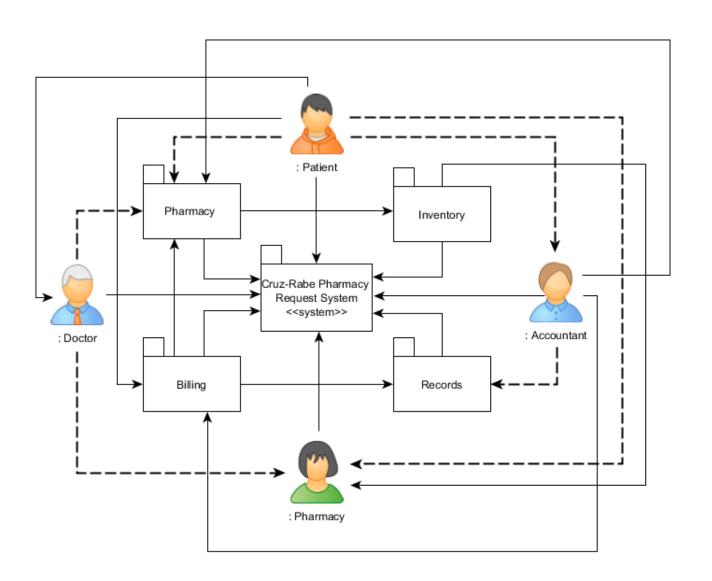


# **OBJECT DIAGRAM**

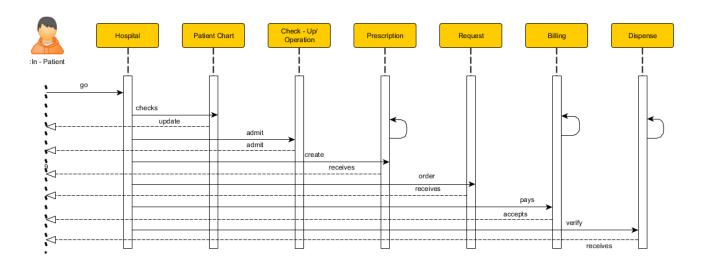


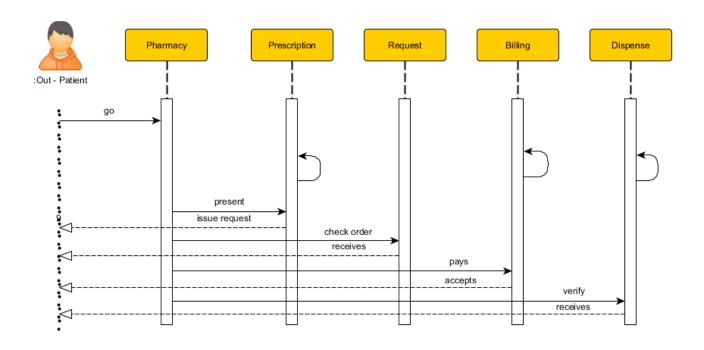


# **PACKAGE DIAGRAM**

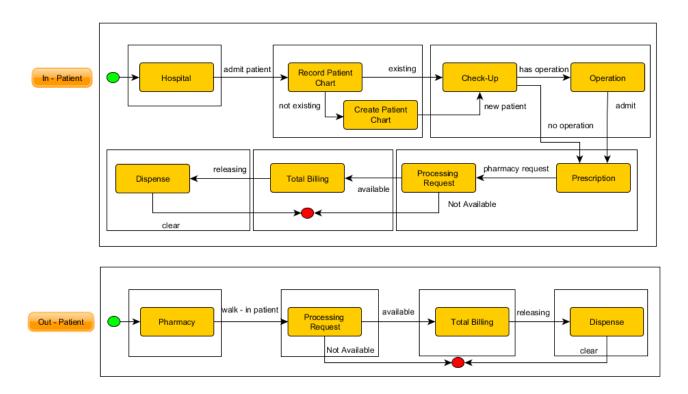


# SEQUENCE DIAGRAM

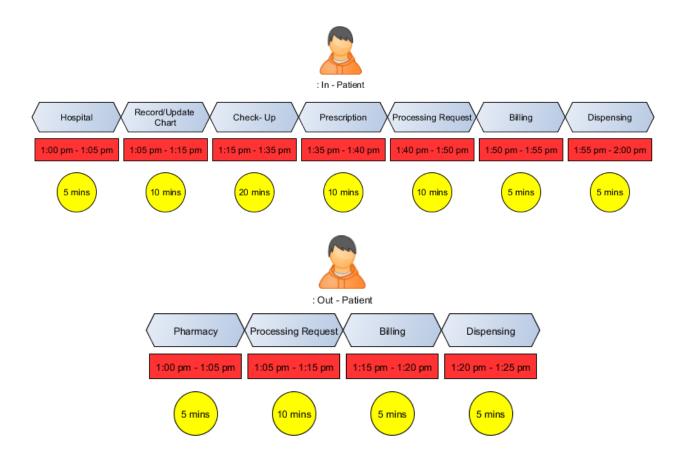




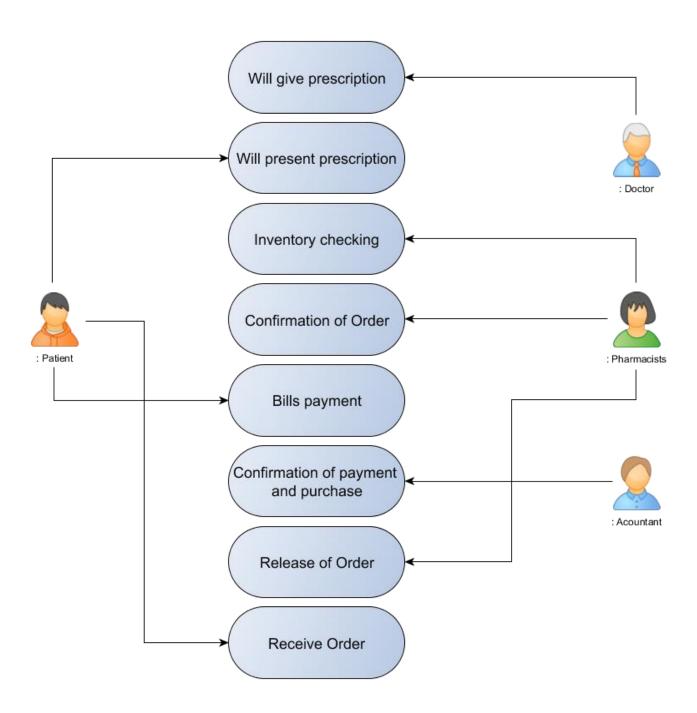
#### STATE MACHINE DIAGRAM



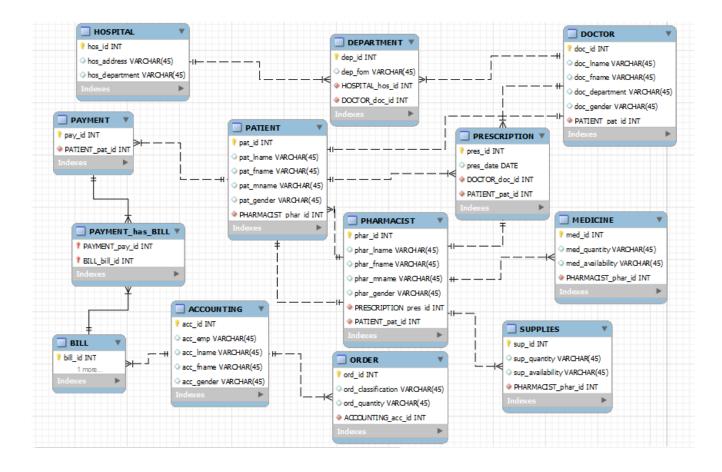
#### **TIMING DIAGRAM**



# **USE CASE DIAGRAM**



#### **ENTITY-RELATIONSHIP DIAGRAM**

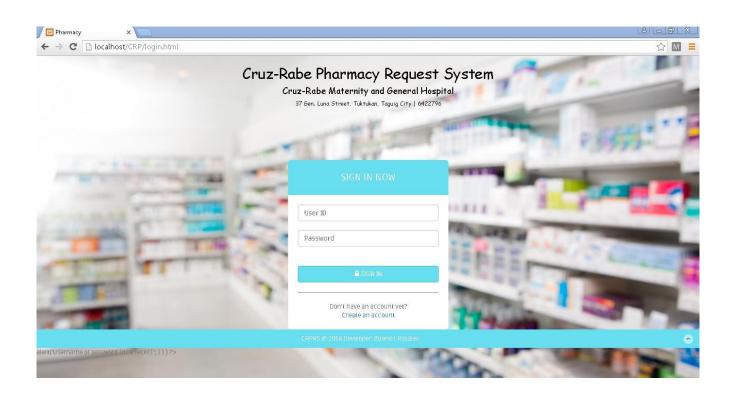


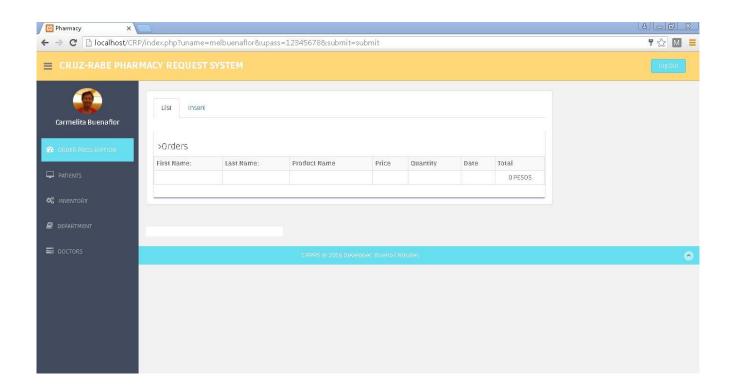
# **DATA DICTIONARY**

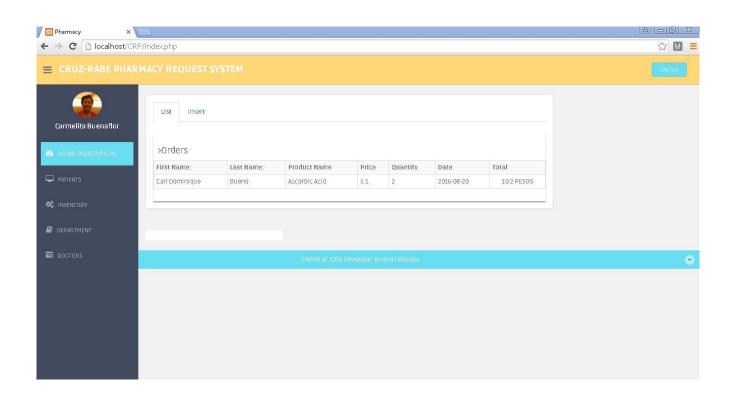
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FIELD NAME 💌	DATA TYPE 🔻	FIELD SIZE	¥	KEY	*	DESCRIPTION	-	EXAMPLE	
dep_id	int			PK		Primary key of Departmen	it	1	
dep_fom	varchar(45)	45				Department field of medici	ne	Opthamologist	
			P	AYME	NT				
FIELD NAME 💌	DATA TYPE 💌	FIELD SIZE	*	KEY	v	DESCRIPTION	*	EXAMPLE	
pay_id	int			PK		Primary key of Payment		1	
				BILL					
FIELD NAME 💌	DATA TYPE 🔻	FIELD SIZE	~	KEY	*	DESCRIPTION	7	EXAMPLE	
bill_id	int		Ţ	PK		Primary key of Bill		1	
			ı	PATIE	VT				
FIELD NAME 🔻	DATA TYPE 💌	FIELD SIZE	7	KEY	*	DESCRIPTION	¥	EXAMPLE	
pat_id	int	79-60		PK		Primary key of Patient		1	
pat_Iname	varchar(45)	45				Last name of the patient		Rosales	
pat_fname	varchar(45)	45				First name of the patient		Glen Roy	
pat_mname	varchar(45)	45				Middle name of the patier	it	Dela Cruz	
pat_gender	varchar(45)	15	1	operations and Mark	j	Gender of the patient		Male	
				IOSPIT	-				
FIELD NAME 💌	DATA TYPE 💌	FIELD SIZE	*	KEY	w	DESCRIPTION	*	EXAMPLE	
hos_id	int	45		PK		Primary key of Hospital		1	
hos_add	varchar(45)	45				Address of Hospital		Taguig City	
				осто	-				
FIELD NAME	DATA TYPE 🔻	FIELD SIZE	Y	KEY	×	DESCRIPTION	Y	EXAMPLE	
doc_id	int	120		PK		Primary key of Doctor		1	
doc_Iname	varchar(45)	45				Last name of the Doctor		Romeo	
doc_fname	varchar(45)	45				First name of the Doctor		Terrence	
oc_department	varchar(45)	45				Department of the Doctor		Emergency	
doc_gender	varchar(45)	15				Gender of the Doctor		Female	

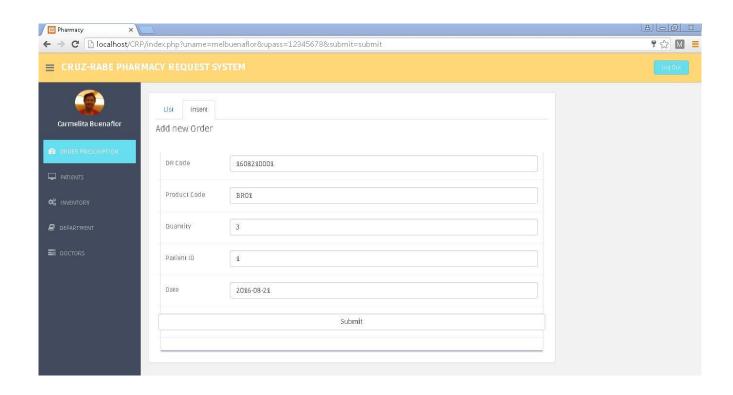
			N	/IEDIC	INE				
FIELD NAME 💌	DATA TYPE 🔻	FIELD SIZE	-	KEY	*	DESCRIPTION	•	EXAMPLE	
med_id	int			PK		Primary key of Medicine	a .	1	
med_quantity	int	100				Quantity of Medicine		22	
med_availability	varchar(45)	15				Availability of Medicine		yes	
				UPPL	IFS				
FIELD NAME *	DATA TYPE 🔻	FIELD SIZE	*	KEY	₩	DESCRIPTION	¥	EXAMPLE	
sup_id	int			PK		Primary key of Supplies		1	
sup_quantity	int	100				Quantity of Supplies		22	
sup_availability	varchar(45)	15				Availability of Supplies		yes	
W-1-			AC	COUN	TIN	G			
FIELD NAME	DATA TYPE 🔻	FIELD SIZE	Y	KEY	*	DESCRIPTION	*	EXAMPLE	
acc_id	int			PK		Primary key of Accounting	5	1	
acc_Iname	varchar(45)	45				Last name of Accountant		Pakak	
acc_fname	varchar(45)	45				First name of Accountant		Edward	
acc_gender	varchar(45)	15				Gender name of Accountar	nt	Male	
						_			
			-	ARMA	1			erra vere	
FIELD NAME	DATA TYPE 🔻	FIELD SIZE	<b>T</b>	KEY	*	DESCRIPTION	<b>T</b>	EXAMPLE	L
acc_id	int	45		PK		Primary key of Pharmacist	. 11	1	
acc_Iname	varchar(45)	45				Last name of Pharmacist First name of Pharmacist		Pakak Edward	
acc_fname	vendant (C)	45				Middle name of the Pharma	722		
phar_mname	varchar(45)	45 15						Bongga Male	
acc_gender	varchar(45)	- 15				Gender name of Pharmaci	st.	iviale	
			PRE	SCRIP	TIC	ON			
FIELD NAME 💌	DATA TYPE 🔻	FIELD SIZE	V	KEY	-	DESCRIPTION	~	EXAMPLE	
pres_id	int			PK		Primary key of Prescriptio	n	1	
pres_date	date	15				Date of Prescription		1/1/1990	

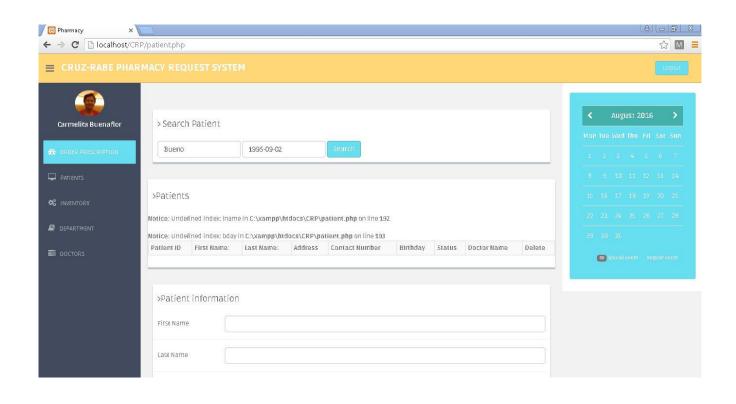
# PROTOTYPE APPLICATION SCREEN LAYOUT

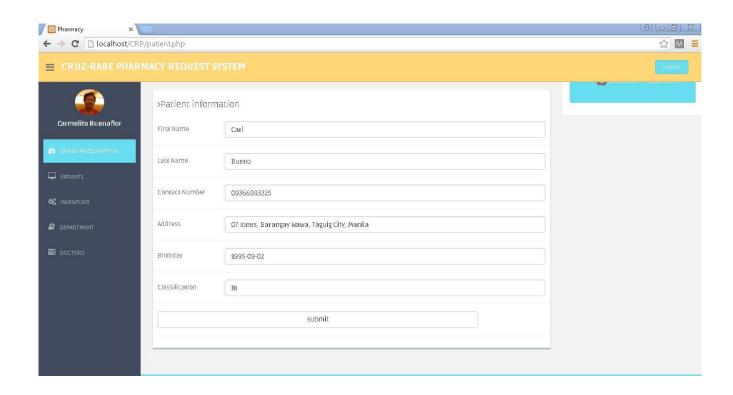


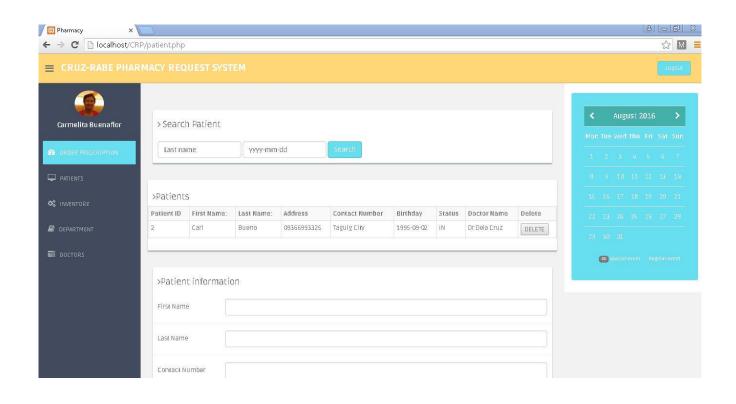


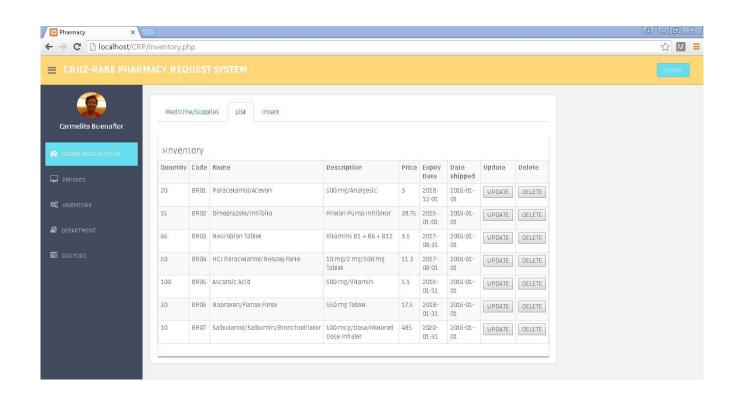


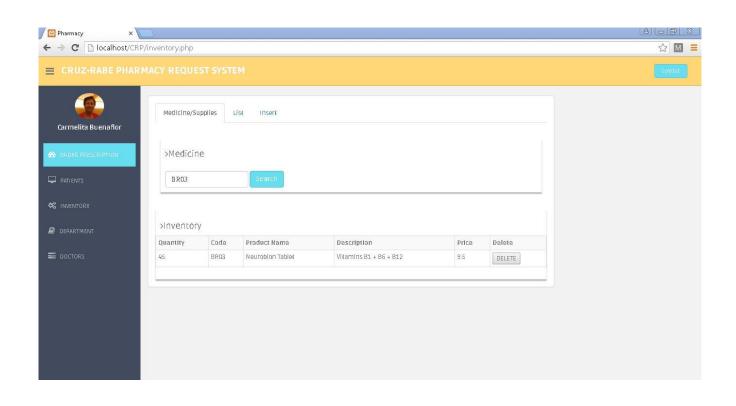


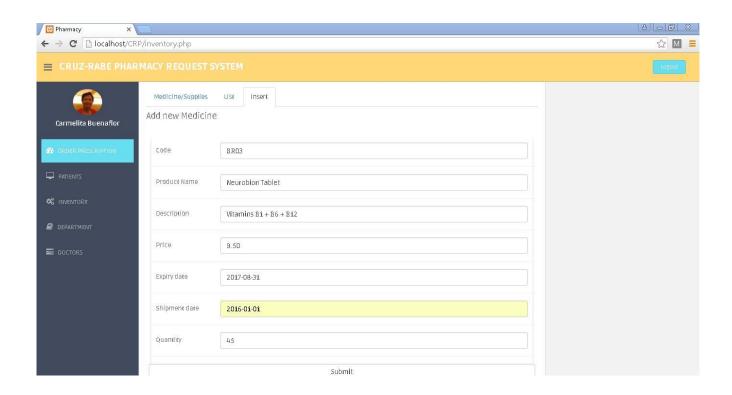


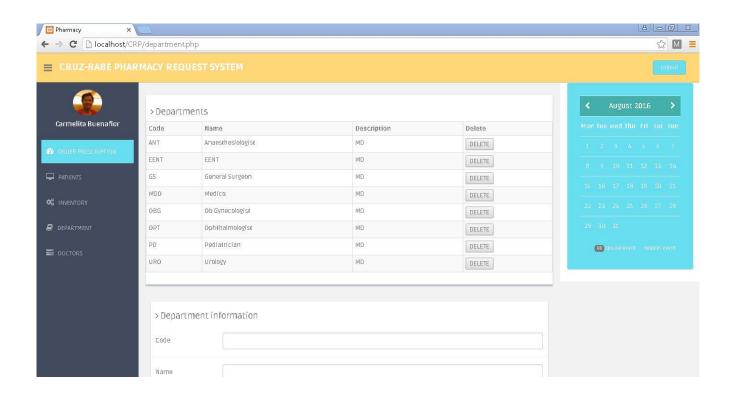


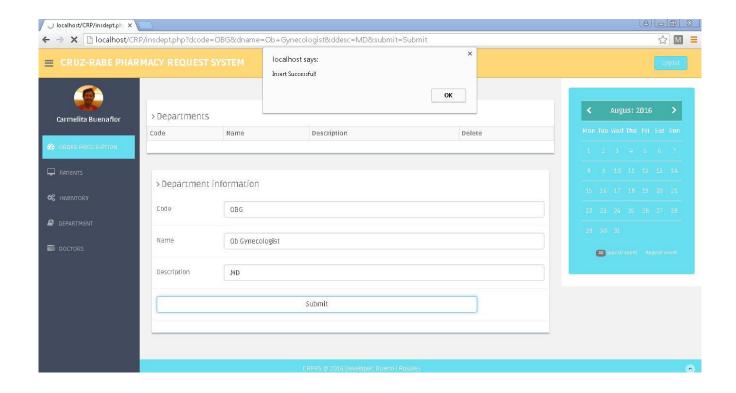


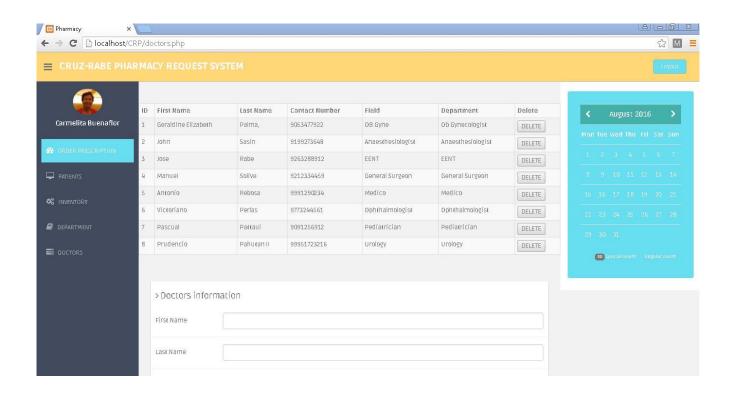


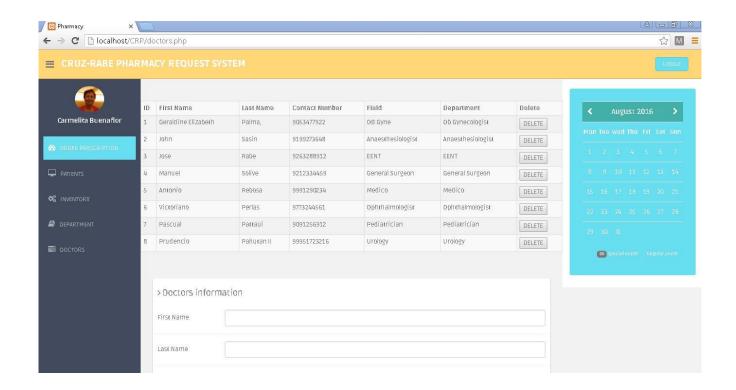




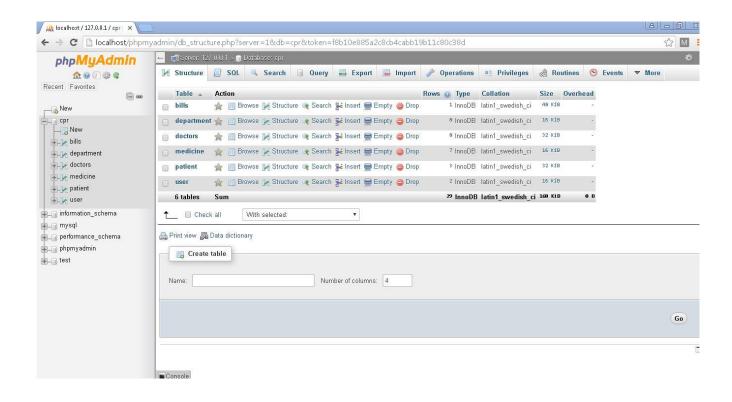


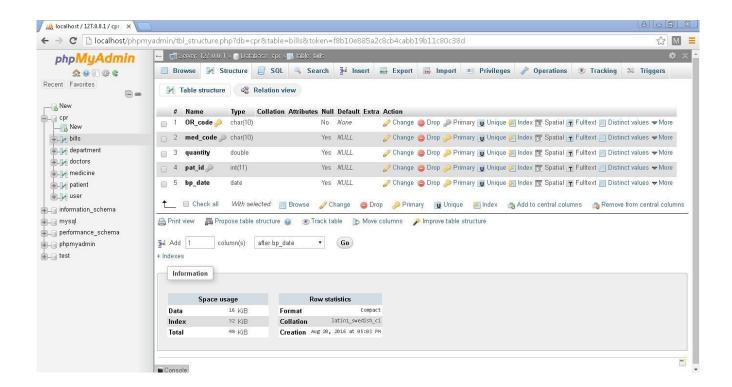


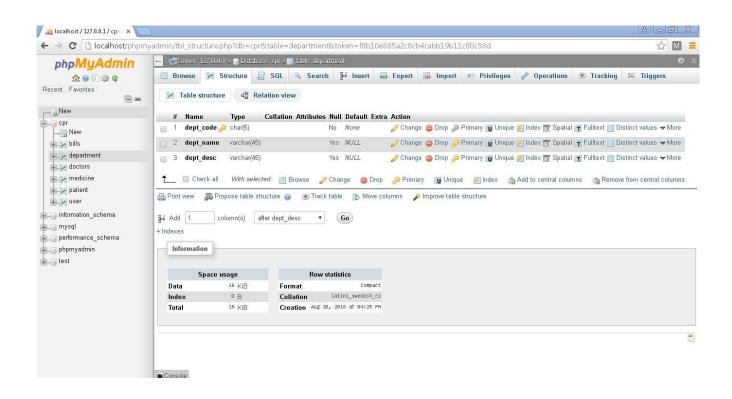


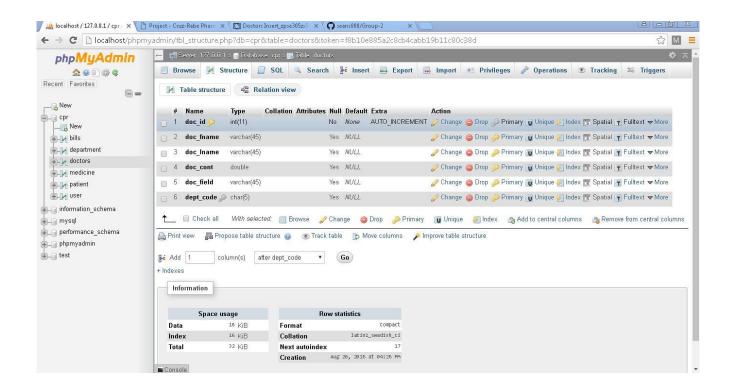


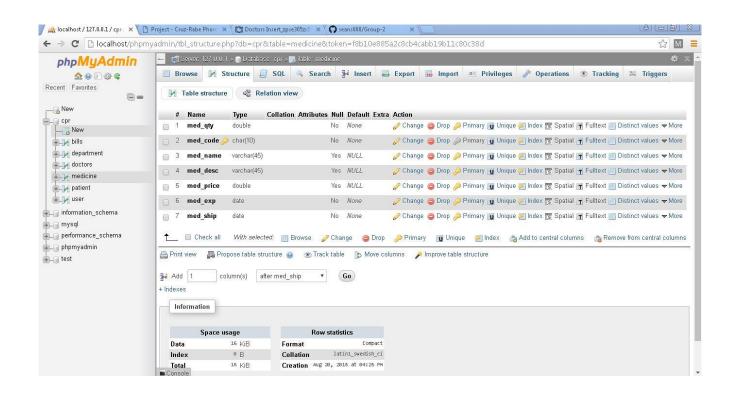
# SQL DATABASE SCREENSHOT

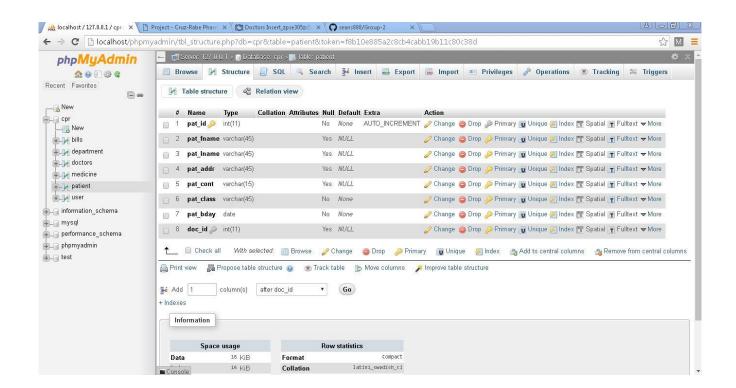


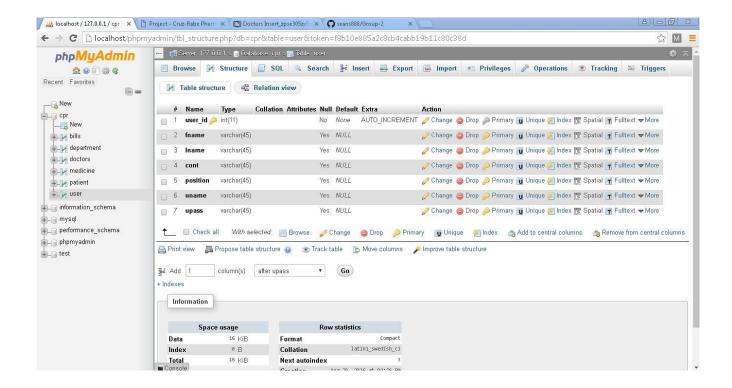












#### **Reference/s:**

- http://projects2.apc.edu.ph/wiki/index.php/Project\_-\_Cruz-Rabe\_Pharmacy\_Request\_System\_%28CR-PRS%29\_-106
- http://github.com
- http://moodle2.apc.edu.ph
- http://email.apc.edu.ph
- http://localhost/phpmyadmin
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- http://doh.gov.ph
- http://www.omnicell.com/About\_Omnicell.aspx
- https://www.pioneerrx.com/web/pioneerrx

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