

**IST659- Database Administration Concepts &
Database Management
Project on Pharmacy Management System**

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Brief Overview

Project Description:

JK Pharmaceuticals is a company which supplies medicines directly to the customers. The company needs to create a database so that they can manage their customers, employees, and medicine details. There are various challenges that are faced by a pharmaceuticals company such as to check the customer's health history and previous medical orders such that they can avoid medical abuse. Additionally, to ensure that all their customers are purchasing medicines according to their prescription. To study all these challenges, our goal was to create a comprehensive system that could address the problems encountered in a modern pharmacy's day-to-day operations.

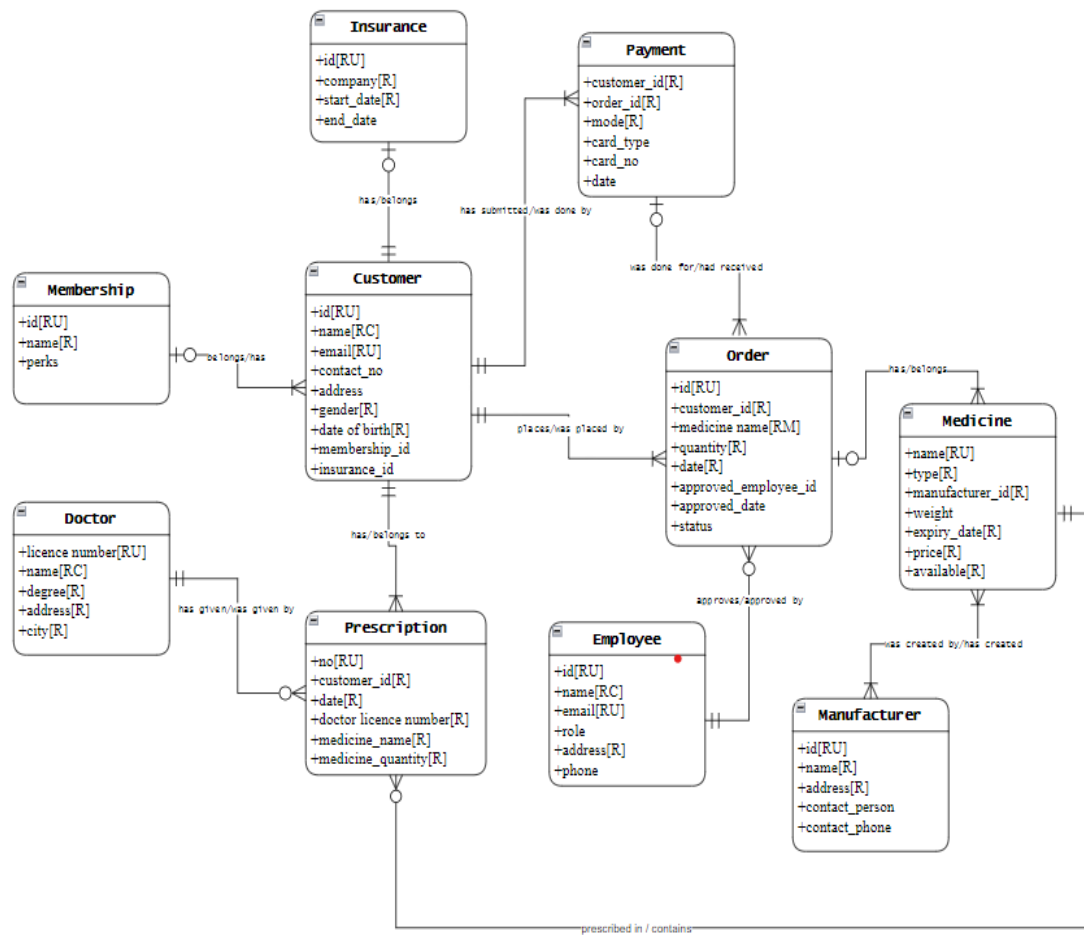
Database Components:

1. The Database consists of 10 tables. Along with tables it has 6 views and 2 triggers as an external data logic.
2. The database is designed for three types of users Customers, Employees and Doctors.
3. Customers component will have all the details regarding the customer including their payment methods and their membership details.
4. Employee component will have all the details regarding details of customers, doctors and employees. Employee also has an authority to approve order
5. Doctor component will have all the details regarding medicines and adding prescription for their patient.
6. Excluding these main components there are other small entities and views that will work as added features of our database

Technology Components used:

1. SQL: - To write all the queries for creating tables, updating data, adding foreign key constraints and to write down the Up Down queries.
2. Azure Cloud: - To create a database which will contain all the required tables so that everyone can access it remotely.
3. Power Apps: - To create a front-end UI for the project
4. Views: - To create tables by taking columns from other tables for completing business rules.
5. Triggers: - To update the medicine stocks automatically based on order placed or deleted.

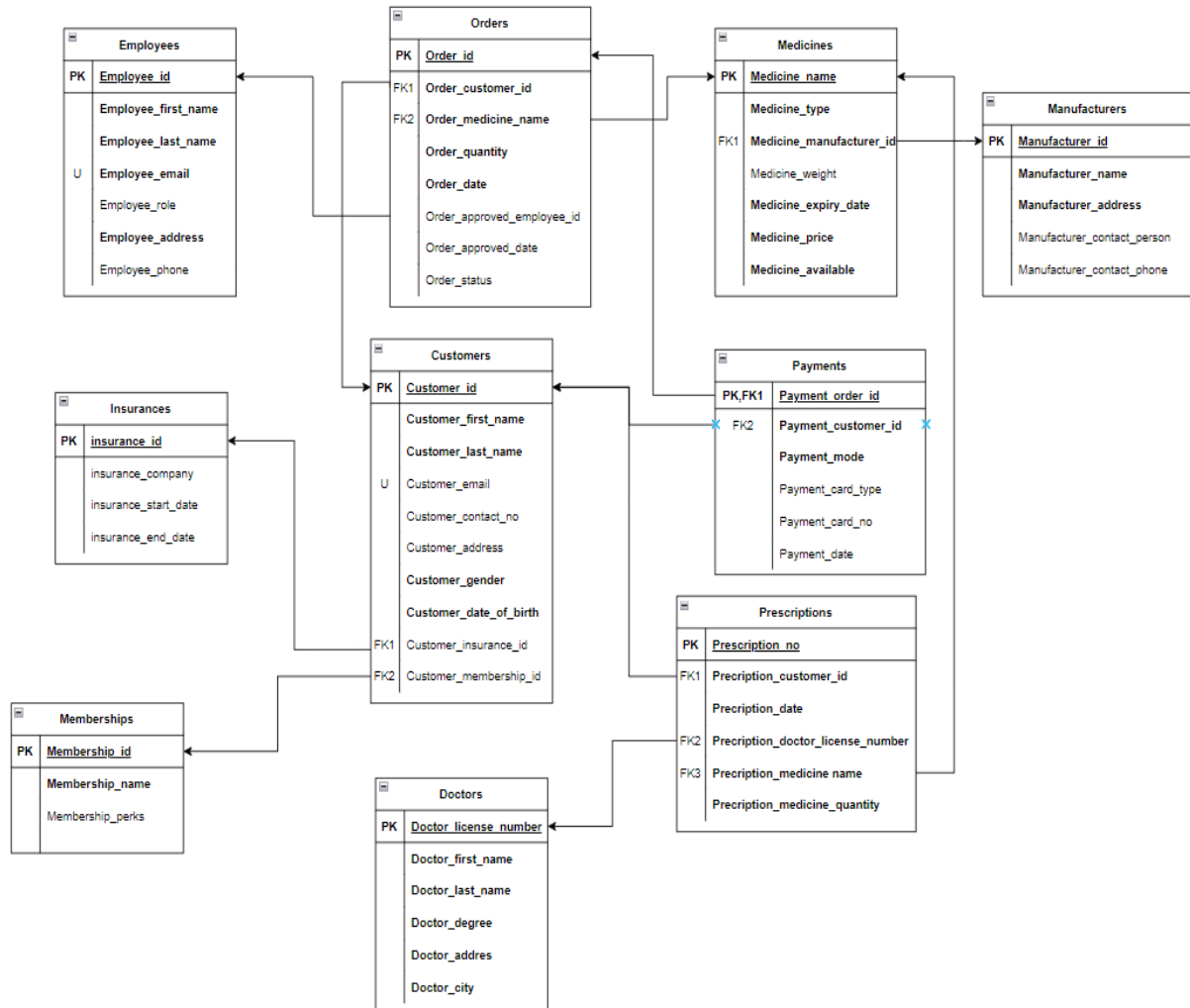
Conceptual diagram of model:



Link:-

https://drive.google.com/file/d/1QcEy_SqhbRwJkKpLVeiZve6DDQEq1n9Q/view?usp=share_link

Logical Diagram of Model:



Link : https://drive.google.com/file/d/169W19az9t_-DNG95gXoiZLCEa3gBWoh1/view?usp=share_link

BUISNESS RULE:

- A customer can order multiple medicines from his account.
- A customer can view the details of medicines.
- A customer can create a new account and enroll for new subscription.
- An employee can verify the order of customer by viewing prescription issued by doctor.
- An employee can reject or approved the order of customer.
- An employee can add or edit the doctor details.
- An employee can add new medicine in list.
- A doctor can issue or edit the prescription to customer/patient.

Table Data:

Customers

customer_id	customer_first_name	customer_last_name	customer_email	customer_contact_no	customer_gender	customer_date_of_birth	customer_membership_id	customer_insurance_id
1001	Tim	David	tim@gmail.com	3157397579	Male	1995-02-21	2	AT001
1002	Jonny	Head	jon.head@gmail.com	3152019890	Male	1992-04-11	1	AN003
1003	Amber	Green	ambergreen13@outlook.com	3151782430	Female	1989-09-02	NULL	UTH002
1004	Monica	Geller	monica@hotmail.com	8573839871	Female	1990-02-02	1	NULL
1005	Rachel	Jordan	rachjordan@gmail.com	6848639085	Female	1985-03-09	NULL	AN001
1006	Ross	Drucker	rossd@gmail.com	6928769086	Male	1987-08-02	3	AT002
1007	Jack	Lavine	jacklavine@gmail.com	8387377272	Male	1988-02-28	NULL	UTH001
1008	Mike	Tyson	mikeytyson@gmail.com	3571227456	Male	1991-01-19	NULL	AT003
1009	Jimmy	Tamblin	jimmytamb1987@gmail.com	3156724983	Male	1987-08-21	3	UTH003
1010	Emma	Watson	emmawatson@gmail.com	8572234242	Female	1990-05-11	NULL	AN003
1011	Test	Ok	test189@gmail.com	84928893939	Male	2013-12-10	1	NULL
1012	Tanmay	Unhale	tunhale@syr.edu	3156942099	Male	2000-07-09	3	NULL
1013	Ajinkya	Gaddime	agaddime@syr.edu	3159529459	Male	1997-12-20	3	NULL

Insurances

insurance_id	insurance_company	insurance_start_date	insurance_end_date
AN001	Anthem	2019-01-10	2024-01-09
AN002	Anthem	2020-03-15	2025-03-14
AN003	Anthem	2017-12-12	2021-12-11
AT001	Aetna	2018-01-21	NULL
AT002	Aetna	2020-05-12	2025-05-12
AT003	Aetna	2018-09-21	2021-09-20
UTH001	United Health Group	2019-03-12	2023-03-11
UTH002	United Health Group	2019-11-19	2023-11-18
UTH003	United Health Group	2021-04-20	NULL

Orders

	order_id	order_customer_id	order_medicine_name	order_quantity	order_date	order_approved_employee_id	order_approved_date	order_status
1	101	1005	Tramadol	2	2022-10-10	5002	2022-10-11	Approved
2	102	1009	Aspirin	3	2022-10-15	5007	2022-11-03	Approved
3	103	1004	Gabapentin	1	2022-10-29	5007	2022-11-03	Approved
4	104	1002	Ibuprofen	2	2022-11-03	5001	2022-09-12	Approved
5	105	1008	Omeprazole	3	2022-11-02	5002	2022-11-03	Approved
6	106	1006	Carvedilol	1	2022-10-15	5002	2022-10-17	Approved
7	107	1010	Simvastatin	3	2022-10-19	5001	2022-10-24	Declined for payment error
8	108	1002	Omeprazole	3	2022-10-11	5002	2022-10-16	Approved
9	109	1004	Insulin	4	2022-10-29	5003	2022-11-01	Approved
10	110	1008	Albuterol	2	2022-11-02	5001	NULL	Pending
11	111	1001	Atrovastatin	4	2022-11-22	5001	NULL	Pending
12	112	1003	Metformin	2	2022-11-03	5001	NULL	Pending
13	113	1005	Metoprolol	2	2022-09-10	5001	2022-12-10	approved
14	114	1007	Losartan	4	2022-11-01	NULL	NULL	Pending
15	115	1010	Tramadol	2	2022-10-04	NULL	NULL	Pending
16	116	1010	Hydrocodone	2	2022-11-09	NULL	NULL	Pending
17	117	1011	Cobimetastat	2	2022-12-04	5002	2022-12-08	Approved

Payments

	payment_customer_id	payment_order_id	payment_mode	payment_card_type	payment_card_no	payment_date
1	1005	101	Card	Credit	602342104521	2022-10-10
2	1005	109	Card	Credit	602342104521	2022-09-10
3	1009	102	Card	Debit	424713445639	2022-10-15
4	1008	103	Bank Transfer	NULL	NULL	2022-11-02
5	1008	108	Bank Transfer	NULL	NULL	2022-11-02
6	1004	104	Card	Credit	452190562398	2022-10-29
7	1004	116	Card	Credit	452190562398	2022-10-29
8	1002	105	Insurance Claim	NULL	NULL	2022-11-05
9	1002	115	Insurance Claim	NULL	NULL	2022-10-15
10	1001	106	Card	Debit	421456132904	2022-11-22
11	1003	107	Bank Transfer	NULL	NULL	2022-11-03
12	1006	110	Insurance Claim	NULL	NULL	2022-10-15
13	1007	111	Card	Credit	901127813401	2022-11-01
14	1010	112	Crad	Credit	619023108924	2022-10-04
15	1010	113	Crad	Credit	619023108924	2022-10-19
16	1010	114	Crad	Credit	619023108924	2022-11-09

Employees

	employee_id	employee_first_name	employee_last_name	employee_role	employee_address	employee_phone_no	employee_email
1	5001	Alex	Stewart	Pharmacist	312 Livingstone Ave	3152904561	Alex.Stewart@jckpharma.com
2	5002	Ben	Stokes	Senior Pharmacist	214 Nottingham Ave	8571256121	Ben.Stokes@jckpharma.com
3	5003	Harry	Osborn	Pharmacist	198 E Genesse St	NULL	Harry.Osborn@jckpharma.com
4	5004	Peter	Parker	CEO	112 Buckingham Ave	3571294780	Peter.Parker@jckpharma.com
5	5005	Oliviya	Johnson	Billing Specialist	1080 Walnut Pl	3129895630	Oliviya.Johnson@jckpharma.com
6	5006	Jack	Sparrow	Manager	156 Euclid Ave	3152347891	Jack.Sparrow@jckpharma.com
7	5007	Ross	Buttler	Senior Pharmacist	118 Westcott St	NULL	Ross.Buttler@jckpharma.com

Memberships

	membership_id	membership_name	membership_perks
1	1	Basic	Free Delivery
2	2	Standard	10 Percent off
3	3	Premium	20 percent off

Medicines

	medicine_name	medicine_type	medicine_manufacturer_id	medicine_weight	medicine_expiry_date	medicine_price	medicine_available
1	Albuterol	Liquid	3	NULL	2024-10-10	1.99	185
2	Antihistamines	Capsule	1	650	2024-02-03	3.99	198
3	Aspirin	Capsule	2	650	2025-03-15	2.50	195
4	Atrovastatin	Capsule	1	650	2023-11-30	1.50	192
5	Carvedilol	Liquid	3	NULL	2025-10-09	6.75	184
6	Gabapentin	Injection	2	NULL	2023-01-29	9.95	191
7	Hydrocodone	Liquid	3	NULL	2024-09-24	6.95	194
8	Ibuprofen	Tablet	3	350	2024-02-11	4.00	197
9	Insulin	Injection	1	NULL	2024-05-06	6.75	193
10	Losartan	Tablet	1	550	2024-01-21	3.21	189
11	Metformin	Tablet	2	450	2024-12-11	7.00	196
12	Metoprolol	Tablet	1	650	2025-01-15	13.49	179
13	Omeprazole	Capsule	2	350	2024-05-12	2.79	181
14	Simvastatin	Injection	2	NULL	2024-05-12	10.99	190
15	Tramadol	Tablet	1	450	2025-01-04	7.45	182

Manufacturers

	manufacturer_id	manufacturer_name	manufacturer_address	manufacturer_contact_person	manufacturer_contact_number
1	1	Johnson & Johnson	One Johnson & Johnson Plaza...	James Anderson	6874342331
2	2	Pfizer	235 East 42nd Street NY	William Butcher	3158782350
3	3	Novartis	One Health Plaza East Hanove...	Mark Wood	7879893331

Prescriptions

	prescription_no	prescription_customer_id	prescription_date	prescription_doctor_licence_number	prescription_medicine_name	prescription_medicine_quantity
1	101001	1005	2022-10-09	M10128945678	Tramadol	2
2	101002	1009	2022-10-14	M14590248902	Aspirin	3
3	101003	1008	2022-11-01	M1012905357	Albuterol	2
4	101004	1004	2022-10-29	H90234518930	Gabapentin	1
5	101005	1002	2022-11-02	L18083984390	Ibuprofen	2
6	101006	1001	2022-11-20	M14590248902	Atrovastatin	4
7	101007	1003	2022-11-02	H90234518930	Metformin	2
8	101008	1008	2022-11-02	L18083984390	Omeprazole	3
9	101009	1005	2022-09-09	M10128945678	Metoprolol	2
10	101010	1006	2022-10-14	M1012905357	Carvedilol	1
11	101011	1007	2022-10-29	M14590248902	Losartan	4
12	101012	1010	2022-10-03	M10128945678	Tramadol	2
13	101013	1010	2022-10-18	M10128945678	Simvastatin	3
14	101014	1010	2022-11-07	M10128945678	Hydrocodone	2
15	101015	1002	2022-10-10	L18083984390	Omeprazole	3
16	101016	1004	2022-10-29	H90234518930	Insulin	4
17	101017	1001	2022-11-10	H90234518930	Albuterol	4

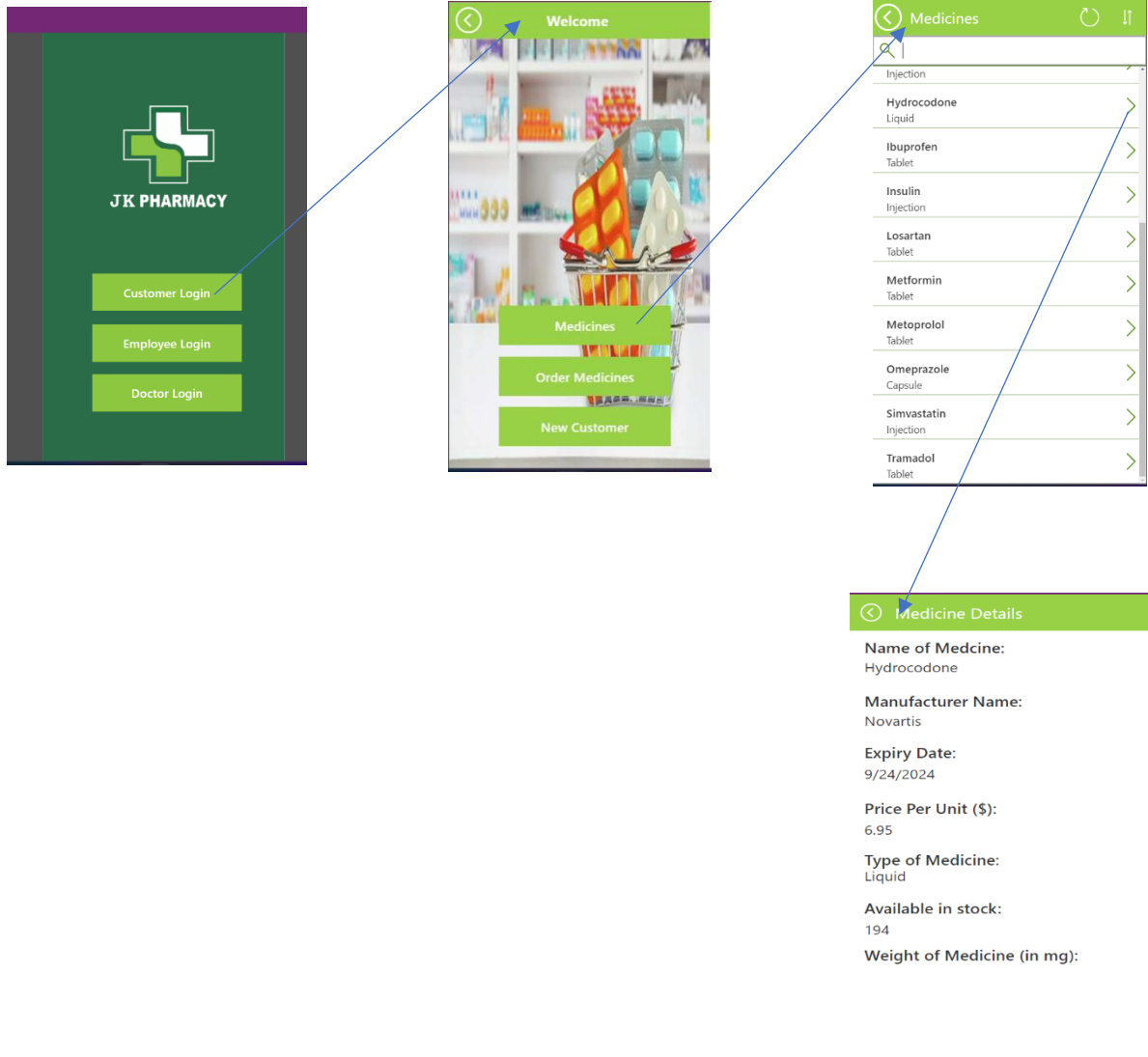
Doctors

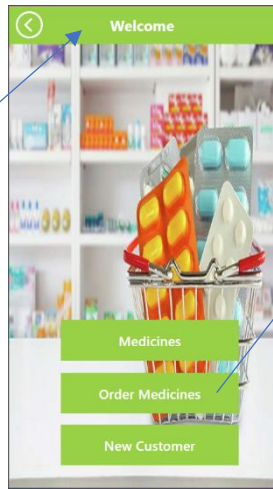
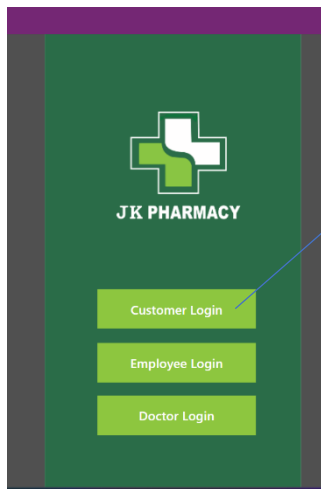
	doctor_licence_number	doctor_first_name	doctor_last_name	doctor_degree	doctor_address	doctor_city
1	H90234518930	Ravi	Roshan	MBBS	834 Livingstone St	San Fransico
2	L18083984390	Amy	Jackson	BHMS	901 Buckingham Ave	Boston
3	M10128945678	George	Washington	MD	110 West Genessee st	New York
4	M1012905357	Chris	Ampersand	MBBS	190 Wavelry Ave	New Jersey
5	M14590248902	Josh	Hazelwood	MD	1011 Ostrom Ave	Chicago

DEMO of UI:

Power App Link:- <https://apps.powerapps.com/play/e/default-4278a402-1a9e-4eb9-8414-ffb55a5fcf1e/a/6097917a-fc1a-49d6-9f0b-cd6656209c1f?tenantId=4278a402-1a9e-4eb9-8414-ffb55a5fcf1e>

1. For customer login -





Order Medicine

Select Your Name

Tim David

Select Medicine

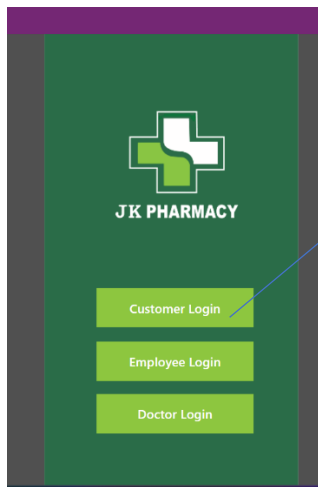
Albuterol

Enter Date

12/31/2001

Select Quantity

9



Enter Your Details

Enter Your First Name

Ajinkya

Enter Your Last Name

Gaddime

Enter Your Email Id

agaddime@syr.edu

Enter Your Gender

Male

Enter Your Date of Birth

12/20/1997

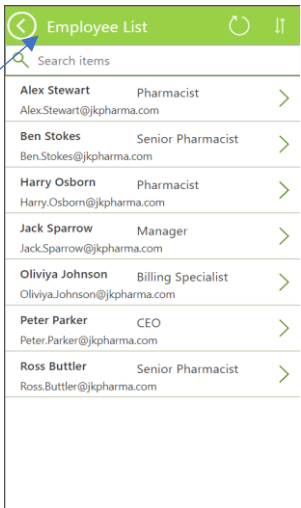
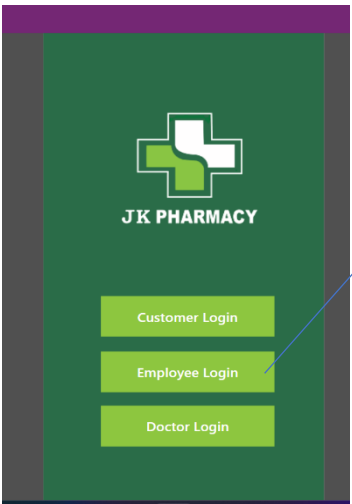
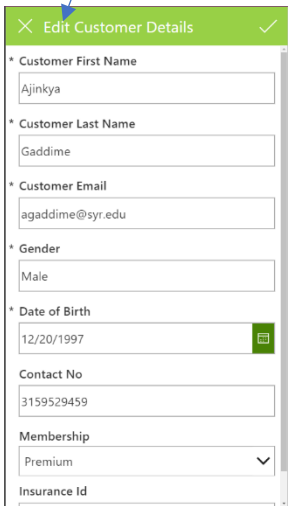
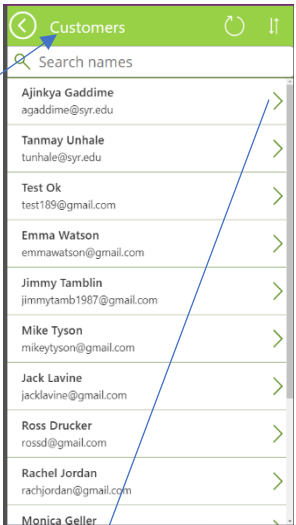
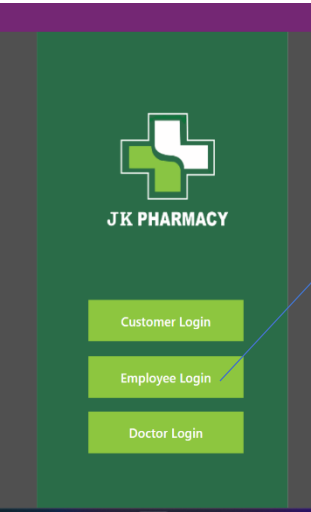
Enter Your Contact Number

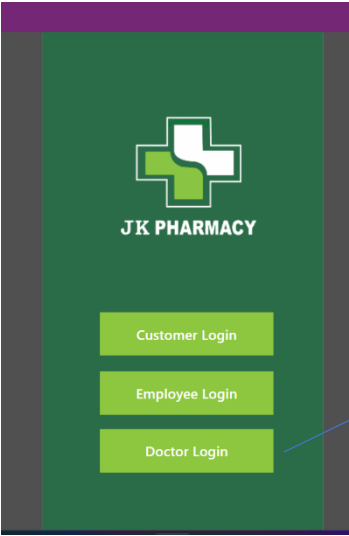
3159529459

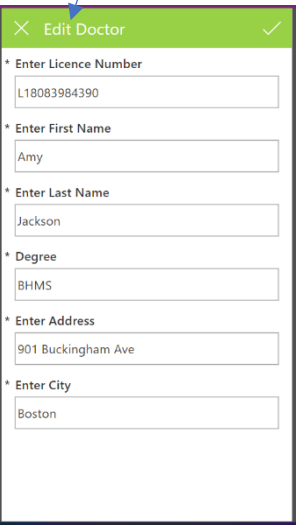
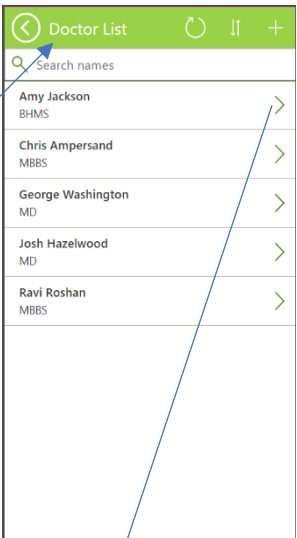
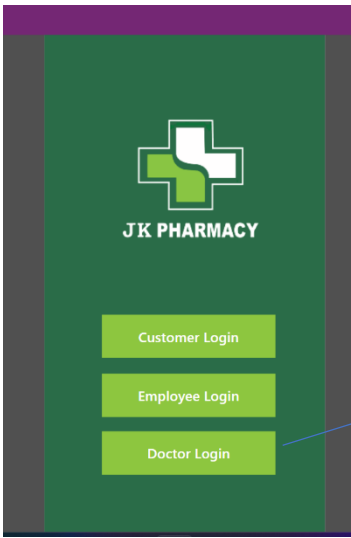
Want Membership? Select one

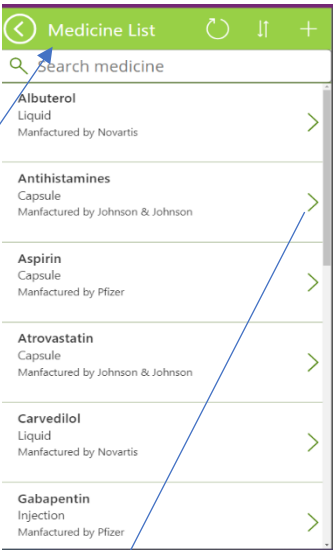
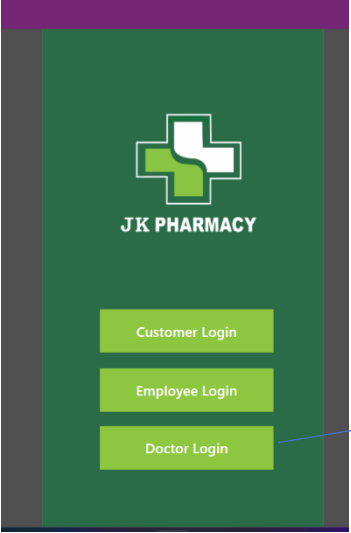
Premium

2. For Employee Login









Edit Medicine Details

* Name of Medicine:
Antihistamines

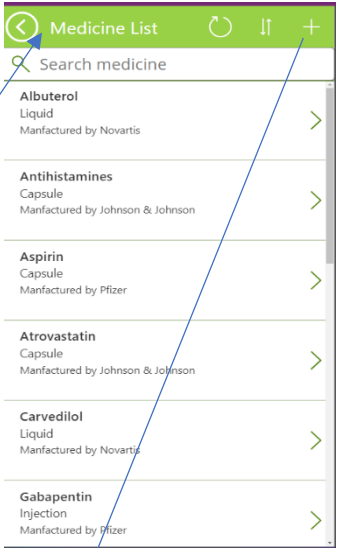
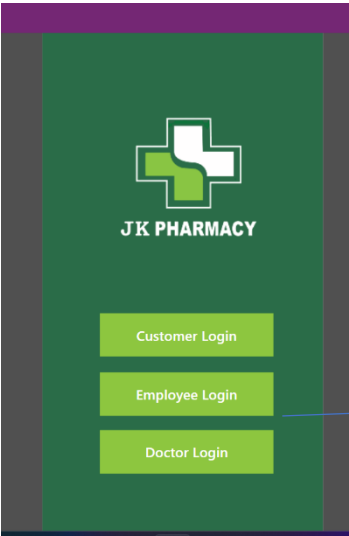
* ~~medicine_manufacturer_id~~ is required.
Manufacturer Name:
Pfizer

* Type of Medicine:
Capsule

* Expiry Date:
2/3/2024

* Price Per Unit (\$):
3.99

Weight of Medicine (in mg):
650



Edit Medicine Details

* Name of Medicine:

* Manufacturer Name:

Johnson & Johnson

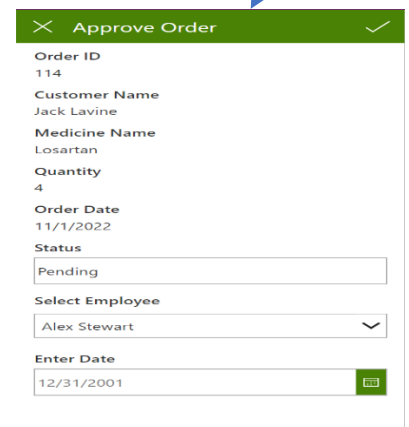
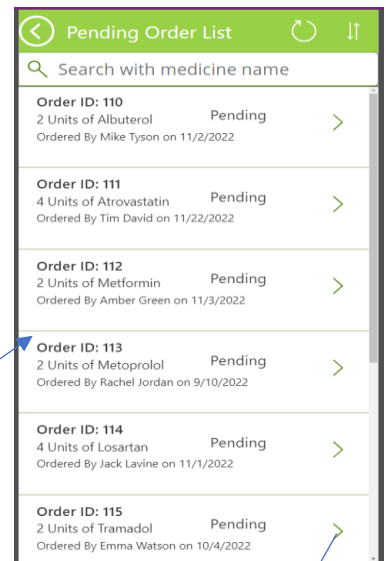
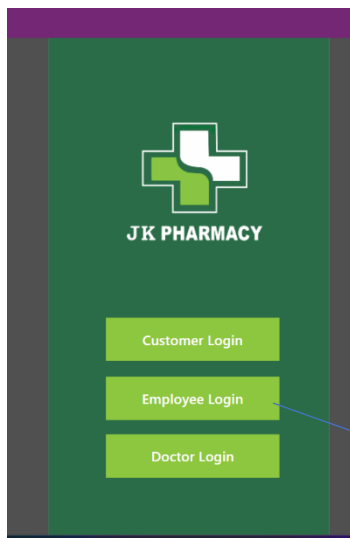
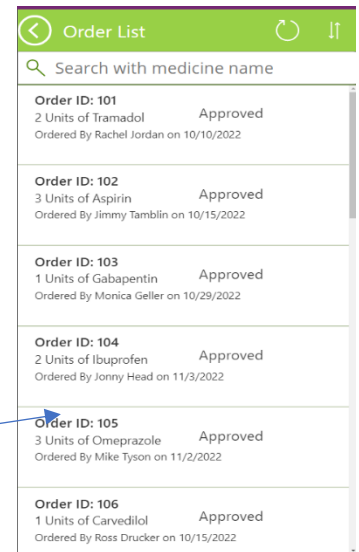
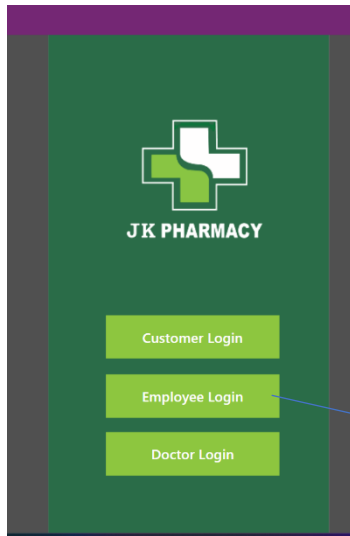
* Type of Medicine:

* Expiry Date:

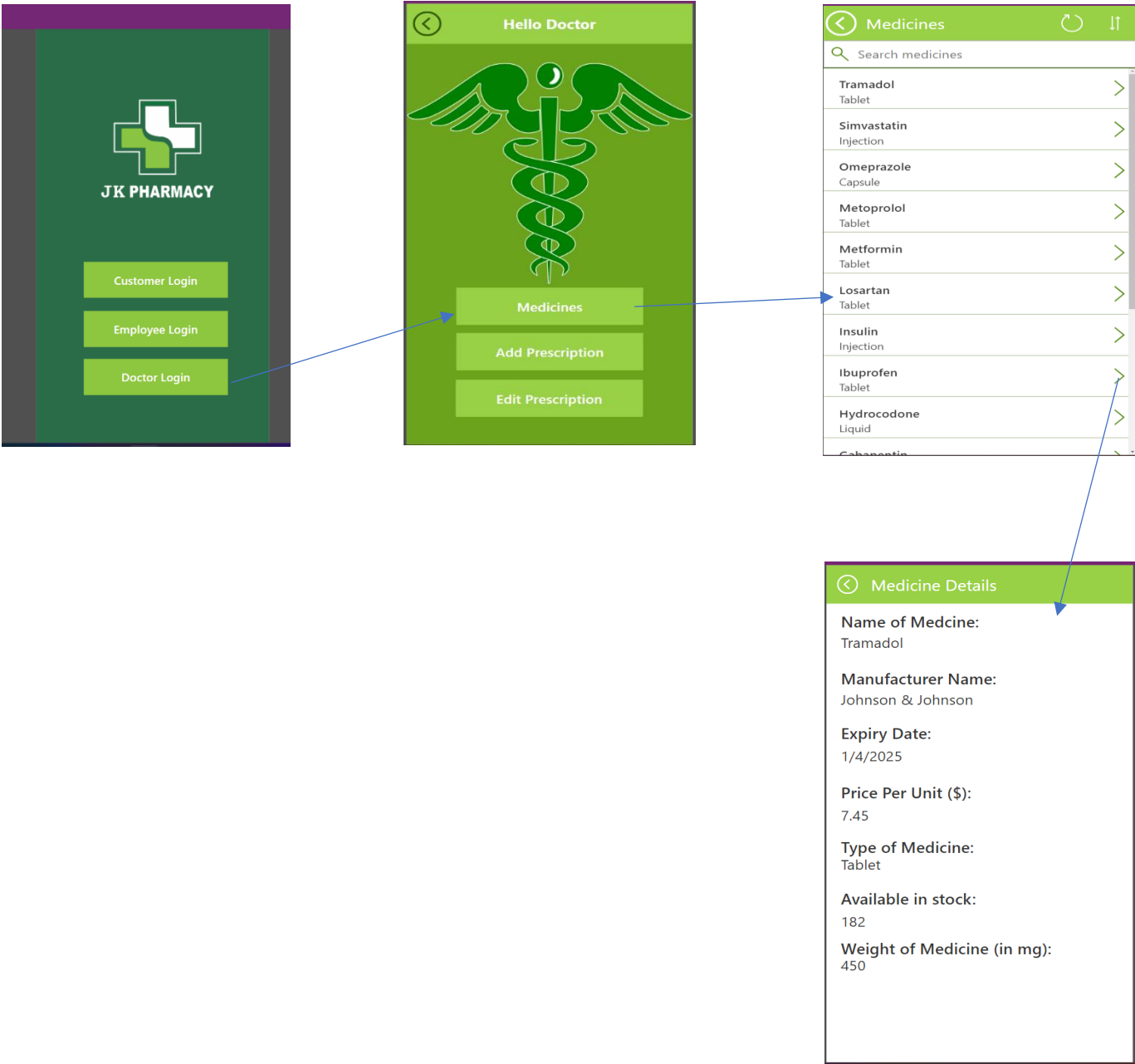
12/31/2001

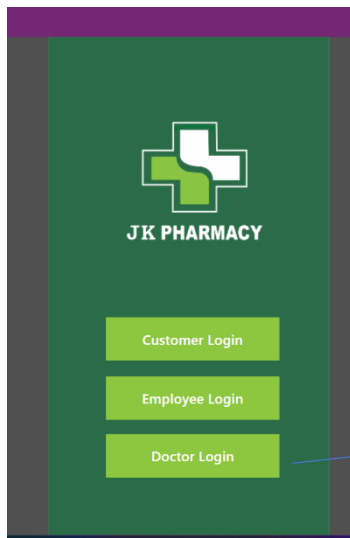
* Price Per Unit (\$)

Weight of Medicine (in mg):



3. For Doctor Login





✕ Add Prescription ✓

* Enter Unique Prescription no
123455

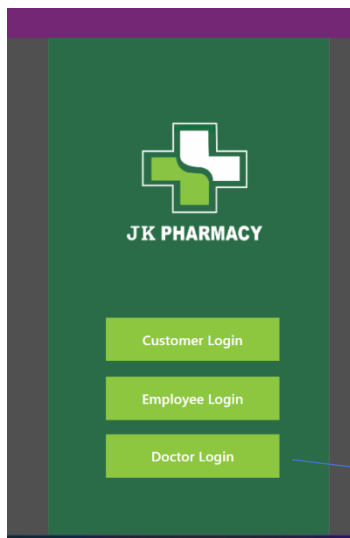
* Select Patient
Tim David ✓

* Select Medicine Name
Albuterol ✓

* Quantity of Medicine
4

* Enter Prescription Date
12/10/2022

* Doctor's Name
Ravi Roshan ✓



⏪ Prescription List ⏩

🔍 Search items

Tim David
4 Units of Albuterol
Prescribed By Ravi Roshan on 12/10/2022 >

Mike Tyson
2 Units of Albuterol
Prescribed By Chris Ampersand on 11/1/2022 >

Jimmy Tamblin
3 Units of Aspirin
Prescribed By Josh Hazelwood on 10/14/2022 >

Tim David
4 Units of Atrovastatin
Prescribed By Josh Hazelwood on 11/20/2022 >

Ross Drucker
1 Units of Carvedilol
Prescribed By Chris Ampersand on 10/14/2022 >

Monica Geller
1 Units of Gabapentin
Prescribed By Ravi Roshan on 10/29/2022 >

✕ Edit Prescription ✓

* Prescription no
123455

* Select Patient
Tim David ✓

* Select Medicine Name
Albuterol ✓

* Quantity of Medicine
4

* Enter Prescription Date
12/10/2022

* Doctor's Name
Ravi Roshan ✓