Pharmacy Management System

Program:

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Course Name: Software Engineering

Provided to

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Pharmacy Management System

GitHub: https://github.com/osamamuhammad3623/pharmacy_management_system

Demo: https://youtu.be/eVyQEmtnwog

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Table Of Contents

1) Software Requirement Specification (SRS) document 5
1.1) Introduction: 5
1.2) Feasibility analysis: 5
1.3) System Requirements 6
1.4) Requirements Validation 7
1.5) Time Plan: 9
1.6) conclusion: 10
2) Analysis and Design document 11
2.1) Use-Case Diagram and the Swimlane Diagram for each Use Case 11
2.2) Interaction Diagrams 13
2.3) State Diagrams 20
2.4) Data Flow Diagrams 23
2.5) System Architecture 28
2.6) Component Diagram 29
2.7) Class Diagram 30
2.8) User Interface Design 31
3) Database Diagrams 33
3.1) ER Diagram 33
3.2) Relational Schema 34
4) User Guide 35
4.1) Add new admins or pharmacists 35
4.2) Delete admins or pharmacists 36
4.3) Update admins or pharmacists data 37
4.4) Delete suppliers 38
4.5) Update suppliers data 39
5.6) Add new suppliers 40

4.7) Check medicine availability 41
4.8) Get all medicines on stock 42
4.9) Remove medicines from stock 43
4.10) Get limited quantities of medicines 44
4.11) Add new medicine to stock 45
4.12) Get medicine alternative 46
4.13) Sell medicine 47
4.14) Get medicine price 48
4.15) Edit pharmacist profile data 49
4.16) Logout 50

1) Software Requirement Specification (SRS) document

1.1) Introduction:

Pharmacy Management System is a system that helps a pharmacist to manage his pharmacy at many levels of management, he can handle the medicines in his pharmacy and register information about them like (name, selling price, supplier company… etc.),

and keep track of their status like if a medicine is available or not, the available quantity of some medicine and the alternatives of medicine, he can also update the information of medicine and for sure he can draw an amount of medicine, the system also makes the pharmacist handles other users information in case other people works with him in the pharmacy so he can add users to the system, delete them and register information about them, the system also handles the supplier companies and save their information and their contacts, A simple GUI is provided so that the user can deal with the system easily.

1.2) Feasibility analysis:

- **Technical aspects:**

Tool Factor:

The tools and technologies required to build the system are:

- QT Creator
- SQLite
- MS VISIO
- Draw.io

Each of these technologies are available free of charge

Knowledge and skills Factor:

The team has the required skills to use these tools and to carry out the project

Time-limitations of the development of the system and the ease of implementation by

using these technologies are synchronized.

By this analysis we find that the project is technically feasible

- **Resource Feasibility**

The Resources required for the project includes:

- Programming devices (Laptops)
- Working space (freely available)
- Programming tools (freely available)
- Software engineers (available)

By this analysis we find that the project has the resource feasibility

- **Social/Legal Feasibility**

The project uses freely available tools in the development and the software libraries used in this system are free open-source libraries.

So by the above analysis we can say that this system is feasible

1.3) System Requirements

Functional Requirements:

1. An admin can create his own account using an email and a password.
2. The admin can manipulate users' accounts so he can add, update, or delete users account from the system and their information and salary.
3. An admin can add supplying companies' names, contacts, and their address.
4. A user can register a medicine with its details which are its name, selling price, available quantity, the supplier company of that medicine, the purchasing price from the supplier and the medicine's expiry date.
5. The user can check if some medicine is available or not.

6. The program should enable the user to check the price of some medicine.
7. The Program should Show the names of some medicine's alternatives.
8. System should enable the user to check if there is a shortage in some medicines and show the contacts of the supplier company to help him make a new order from them.

Non-Functional Requirements:

- **Product requirements:**

The system must be delivered within 2 months, occupy no more than 25 MB of memory, and be supported with a GUI that is easy to use.

- **Organizational requirements:**

The project must be written in C++ and the GUI must be by QT creator, it must be made using DB with SQLite browser, System should conform to IEEE and ISO standards.

- **External requirements:**

The system should conform to all applicable local and international laws.

1.4) Requirements Validation

Source Traceability Matrix:

	1	2	3	4	5	6	7	8
Admin	✓	✓	✓	✓	✓	✓	✓	✓
User				✓	✓	✓	✓	✓

Requirements Traceability Matrix:

Req. no	1	2	3	4	5	6	7	8
1								
2	D							
3	D							
4	D	D	P					
5				D				
6				D				
7					D			
8			P	D	D			

Notations: D ➔ Dependent, P ➔ Partially dependent

Assumptions:

1) Req 2 needs the admin to login (in Req 1) to add new users.

2) Req 3 needs (in Req 1) the admin to login to be able to add supplier companies' info such as names, contacts and addresses.

3) Req 4 needs the admin or the users to login (in Req 1 & 2) to be able to register medicines info including the supplier companies' contacts (in Req 3).

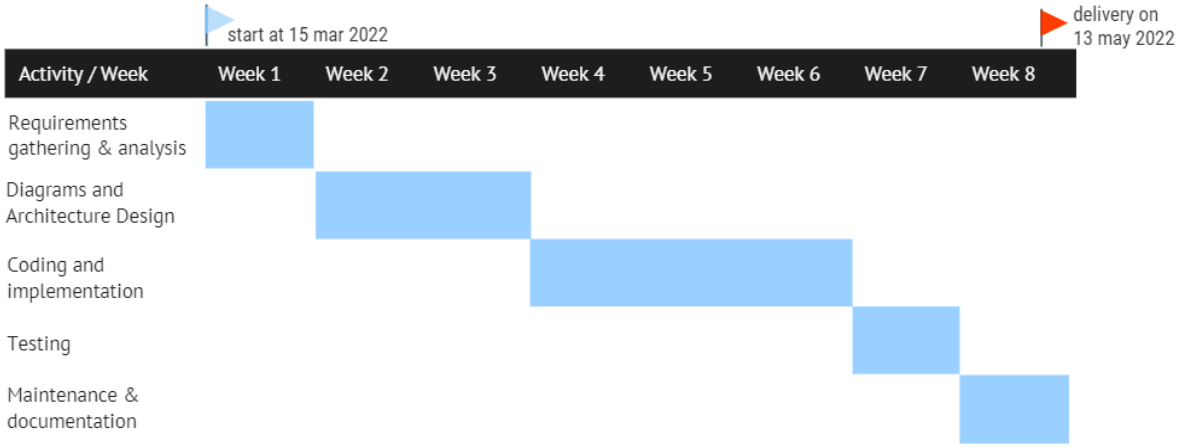
4) Req 5 needs to check the available quantity of the required medicine (in Req 4).

5) In Req 6, the user needs to check the price of the ordered medicine (in Req 4).

6) In Req 7, first it's needed to know if the required medicine is available or not (in Req 5).

7) In Req 8, it's needed to check if there is shortage in the quantities of the medicines in the stock (in Req 4) or if there is already some medicines that ran out from the stock (in Req 5), in such case the supplier companies' contacts of these medicines are shown to the user to make orders (in Req 3).

1.5) Time Plan:

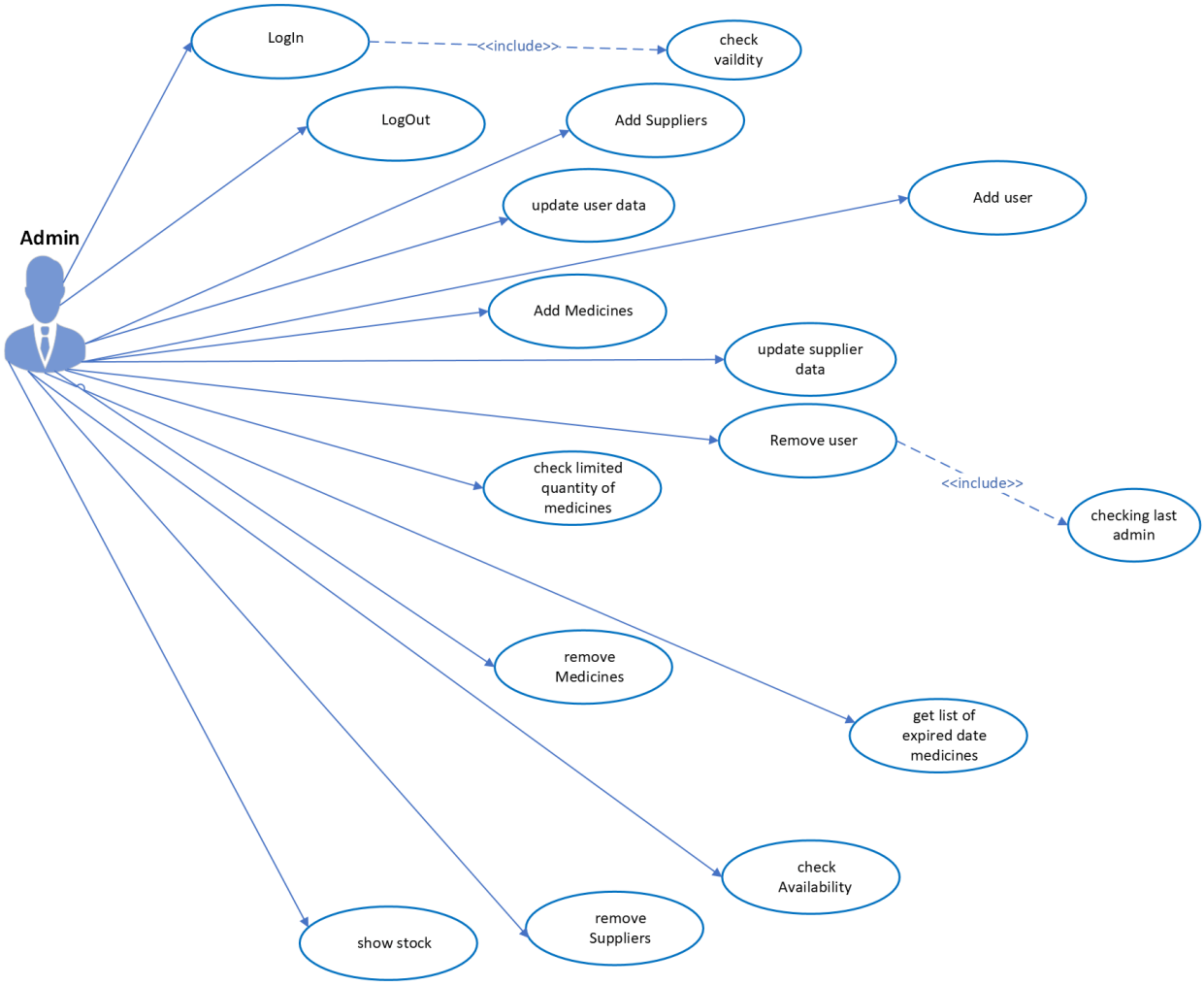


1.6) conclusion:

The software of the pharmacy system requires some tools to be delivered which were shown that they are available, the knowledge and skills required to use them to develop the system are available too, all resources needed are also available and the system can be carried out under the legal and social standards which led to the feasibility of doing this project, that takes the project to the next phase which was stating the functional and non-functional requirements in a clear, consistent, complete way and with no contradictions, then a validation matrices were made and a time plan has been put, all of that leads finally to the ability and intention to develop this system

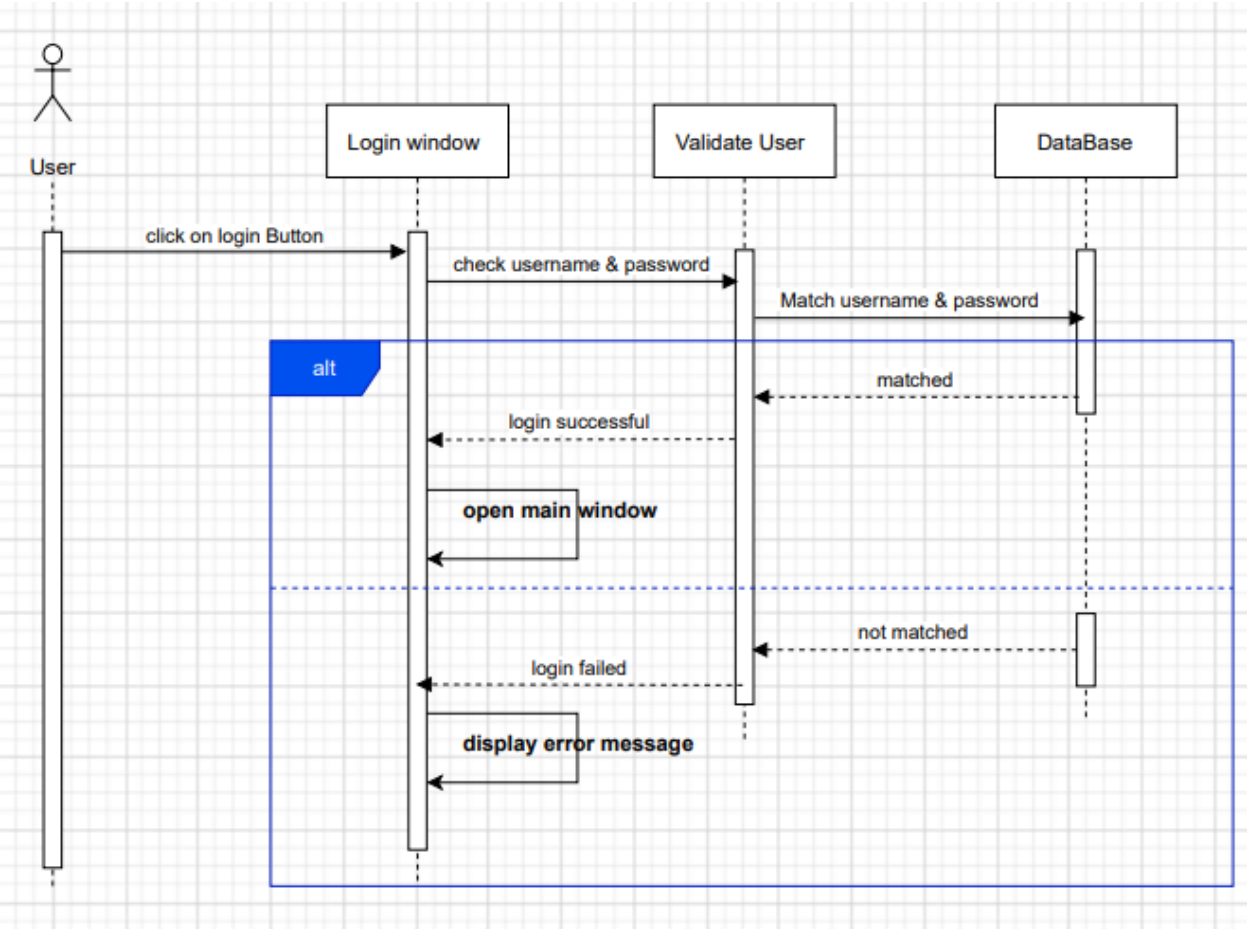
2) Analysis and Design document

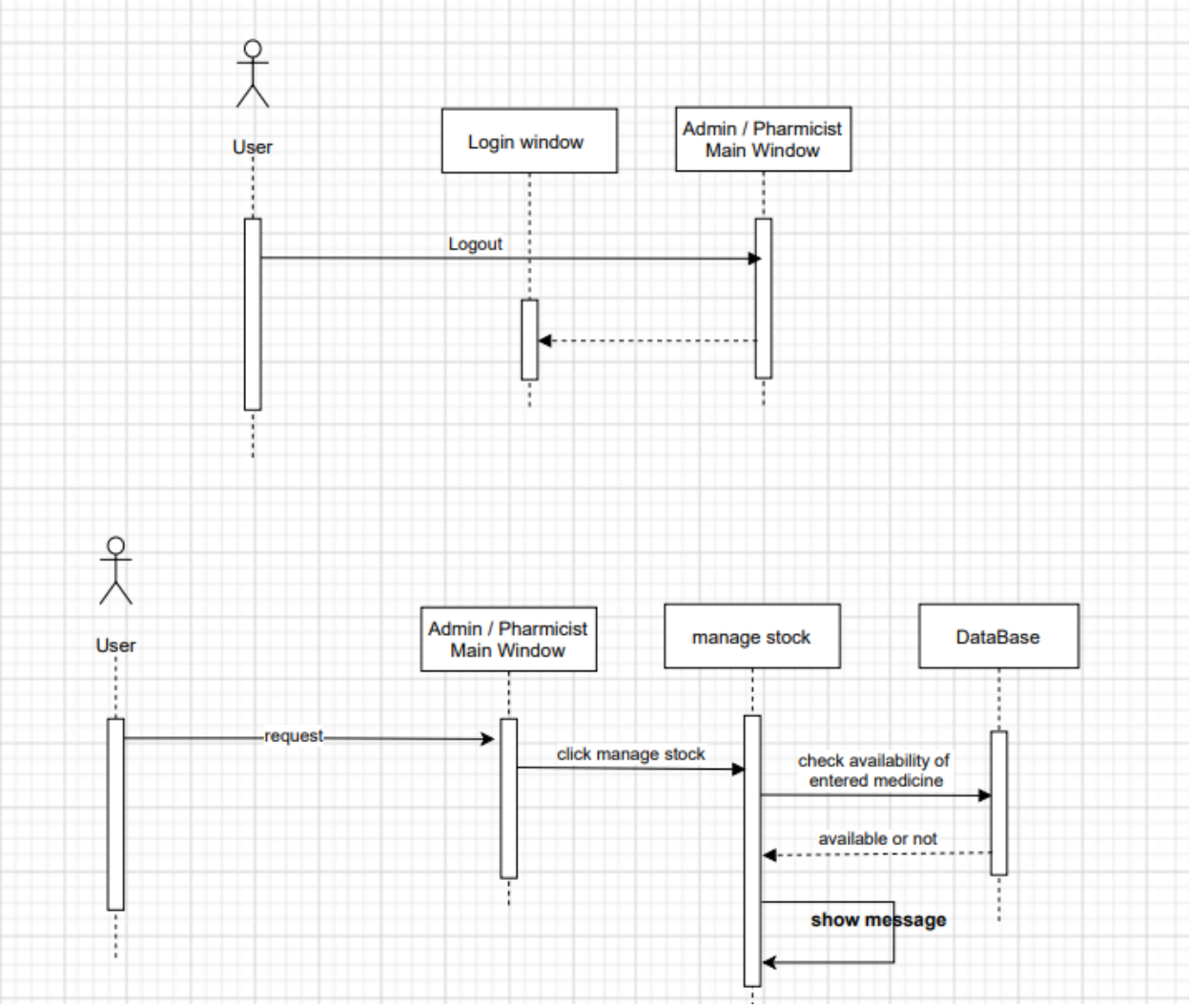
2.1) Use-Case Diagram and the Swimlane Diagram for each Use Case

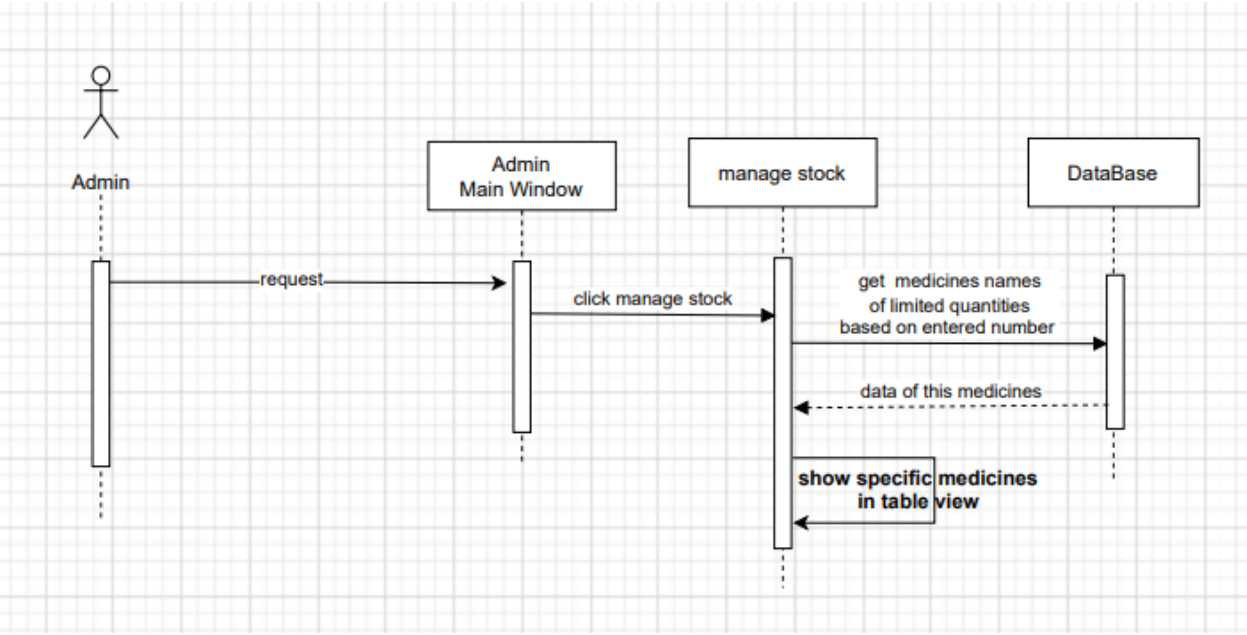


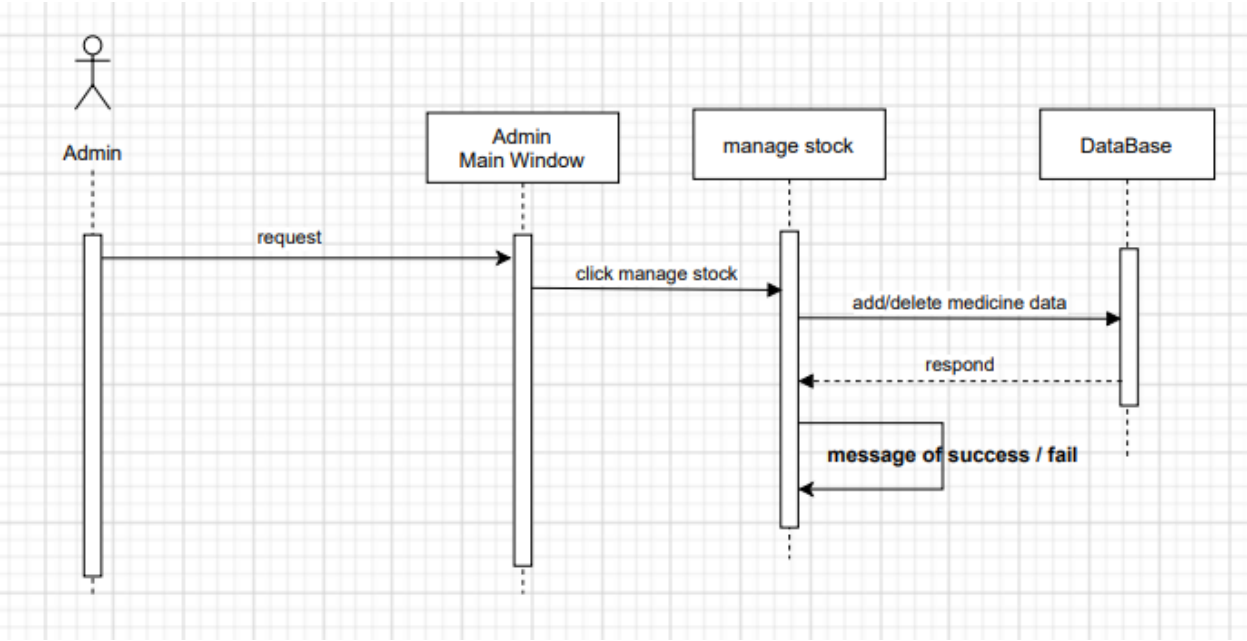
LogIn
LogOut
Customer
check
Availability
Pharmicist
edit profile
get medicine
price
sell medicine
get alternatives
medicines

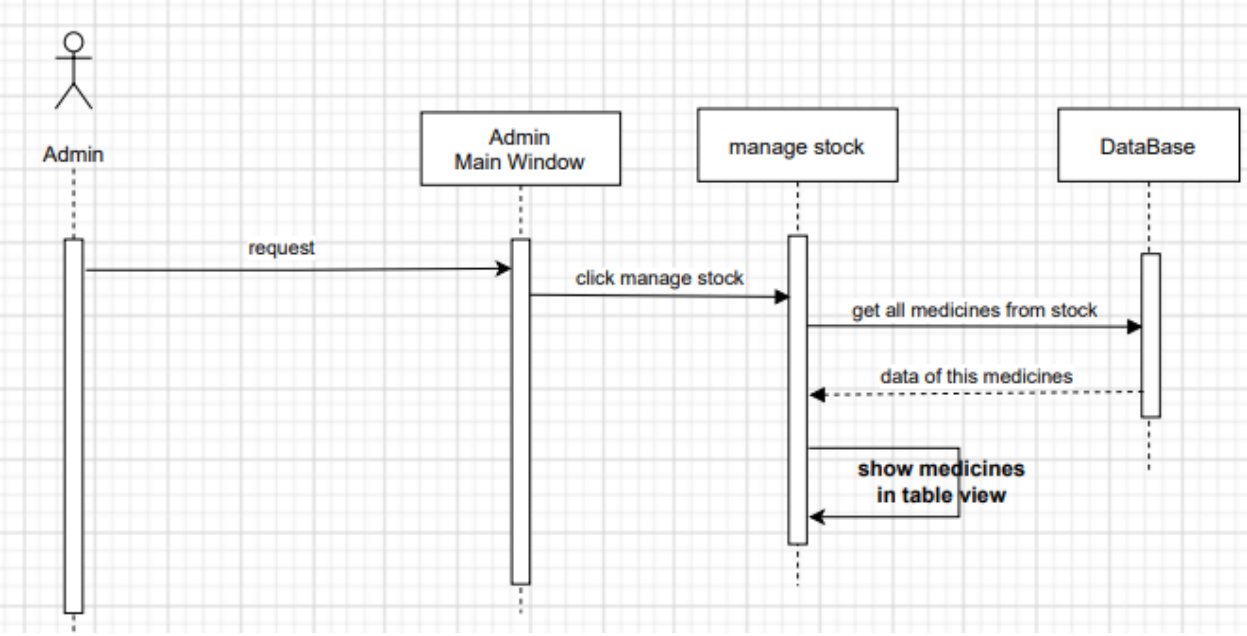
2.2) Interaction Diagrams

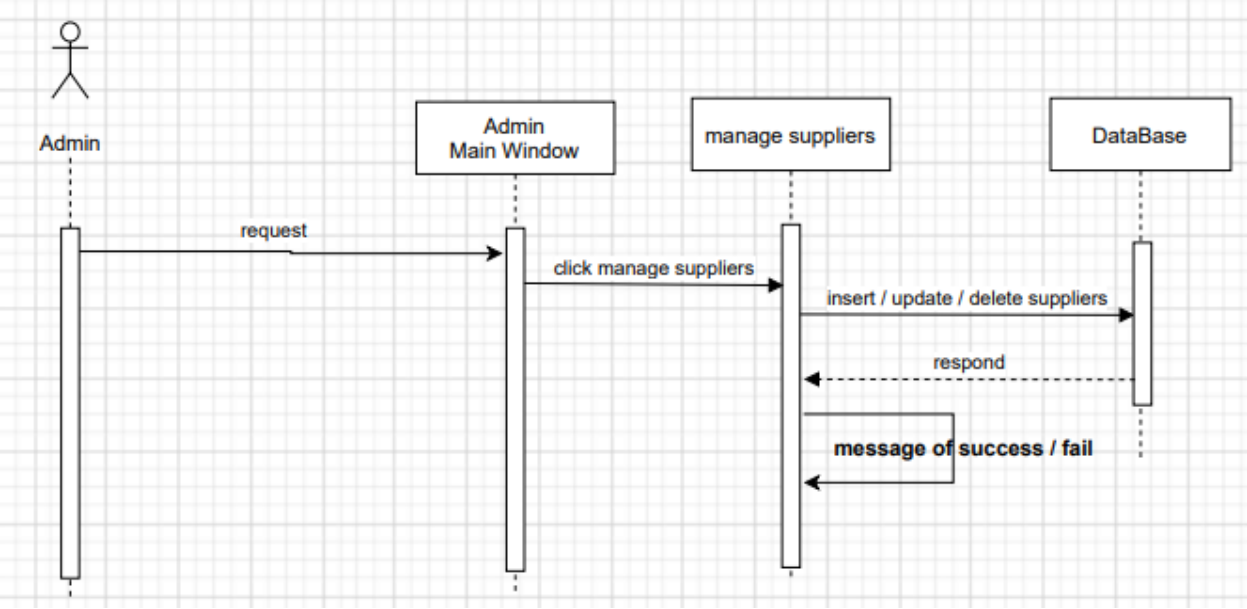


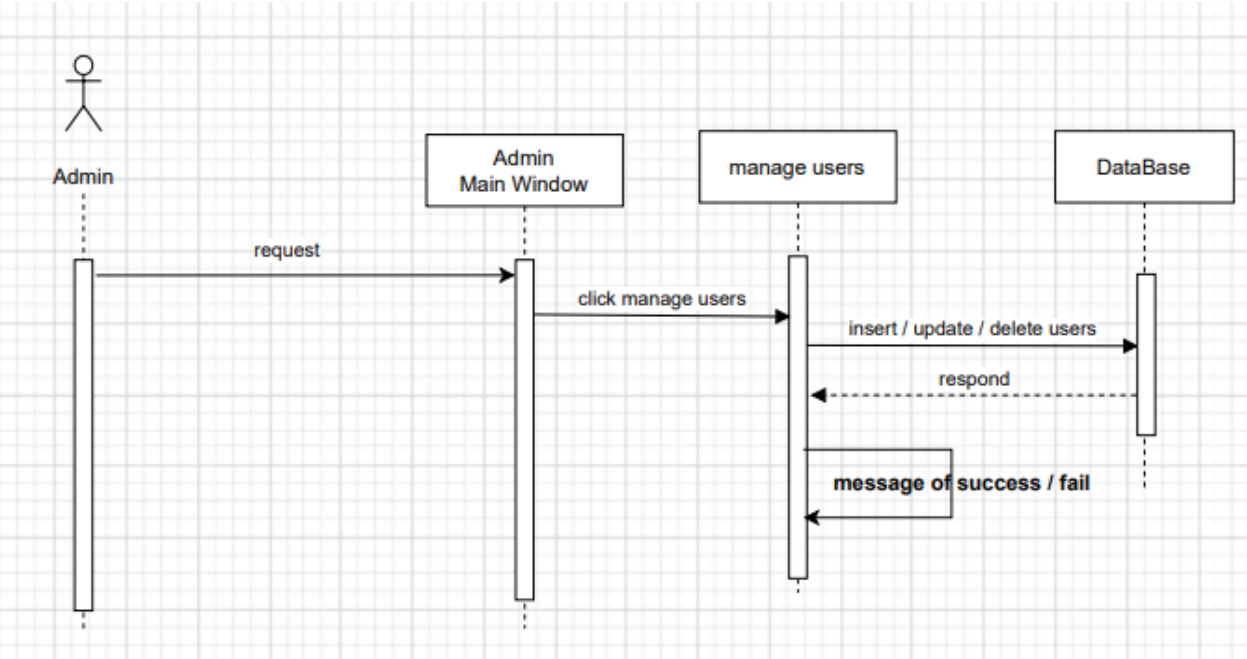

User
Login window
Admin / Pharmicist Main Window
Logout
User
Admin / Pharmicist Main Window
manage stock
DataBase
request
click manage stock
check availability of entered medicine
available or not
show message

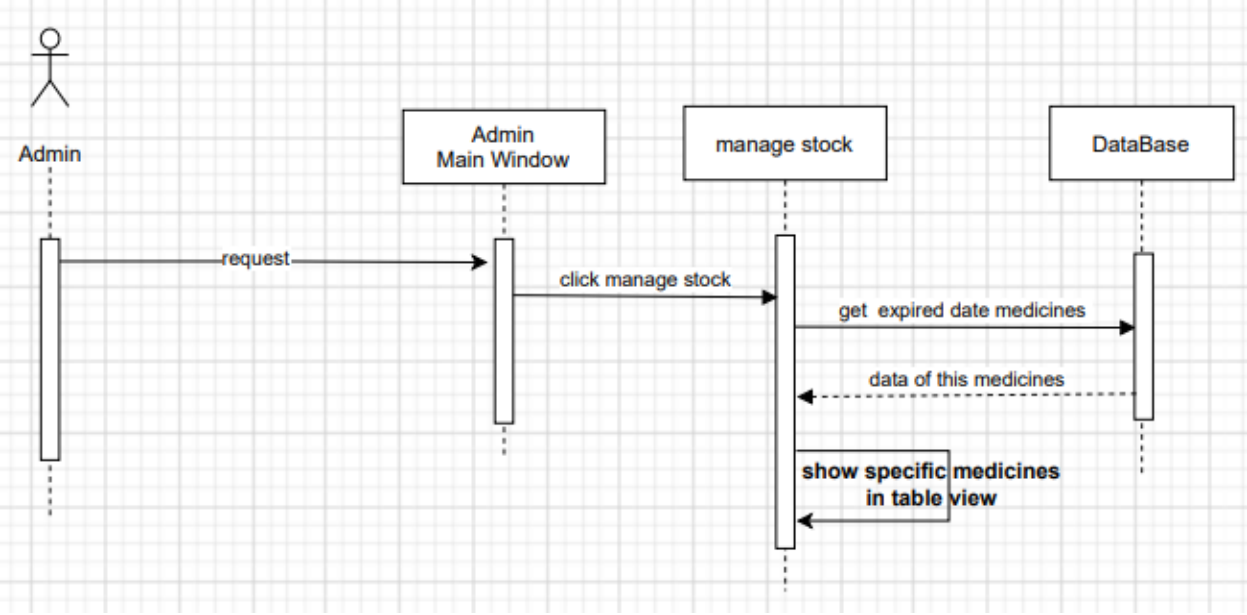

Admin
Admin
Main Window
manage stock
DataBase
request
click manage stock
get medicines names
of limited quantities
based on entered number
data of this medicines
show specific medicines
in table view

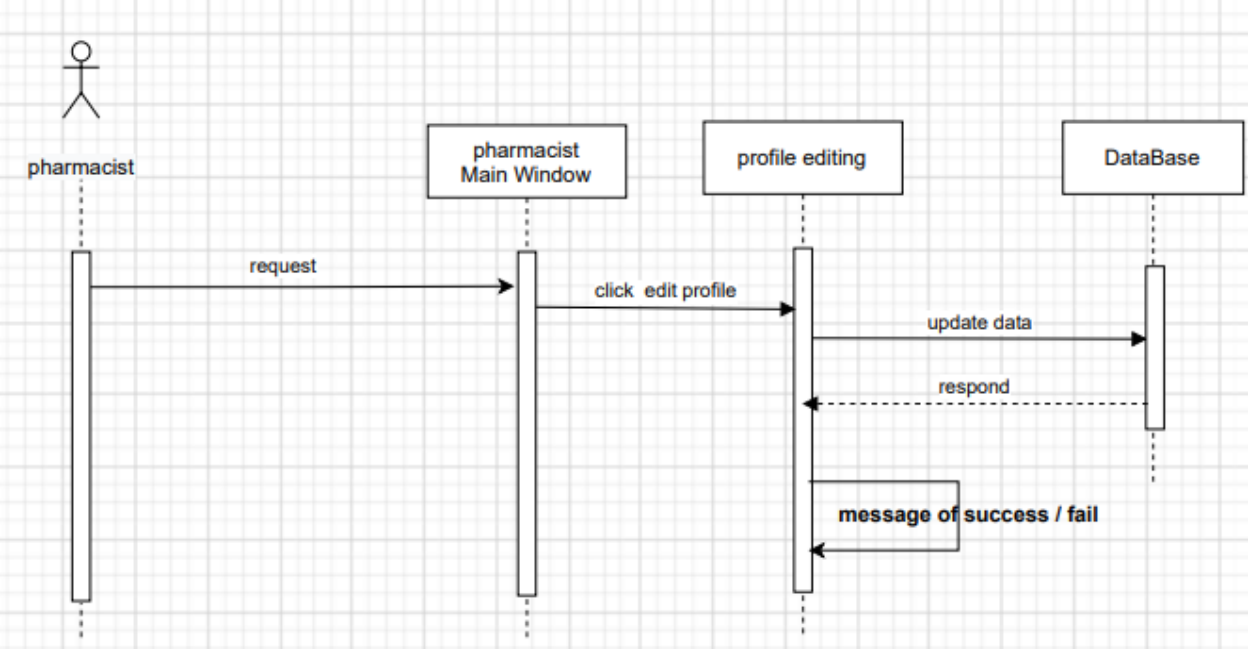

Admin
Admin
Main Window
manage stock
DataBase
request
click manage stock
add/delete medicine data
respond
message of success / fail

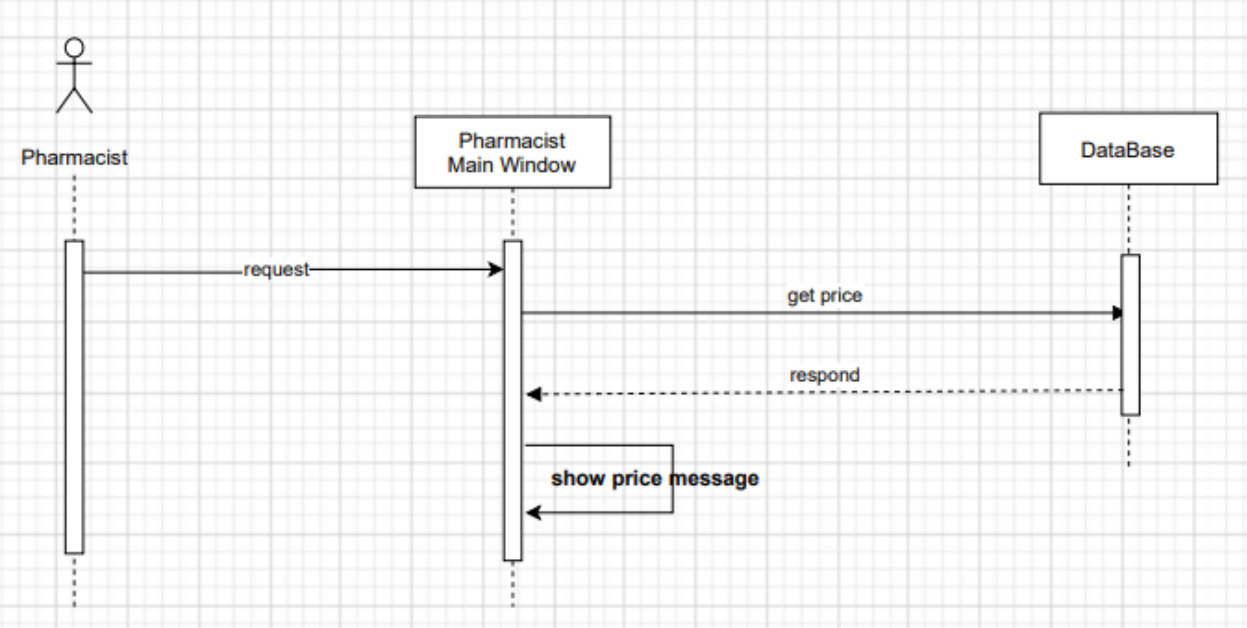

Admin
Admin
Main Window
manage stock
DataBase
request
click manage stock
get all medicines from stock
data of this medicines
show medicines
in table view

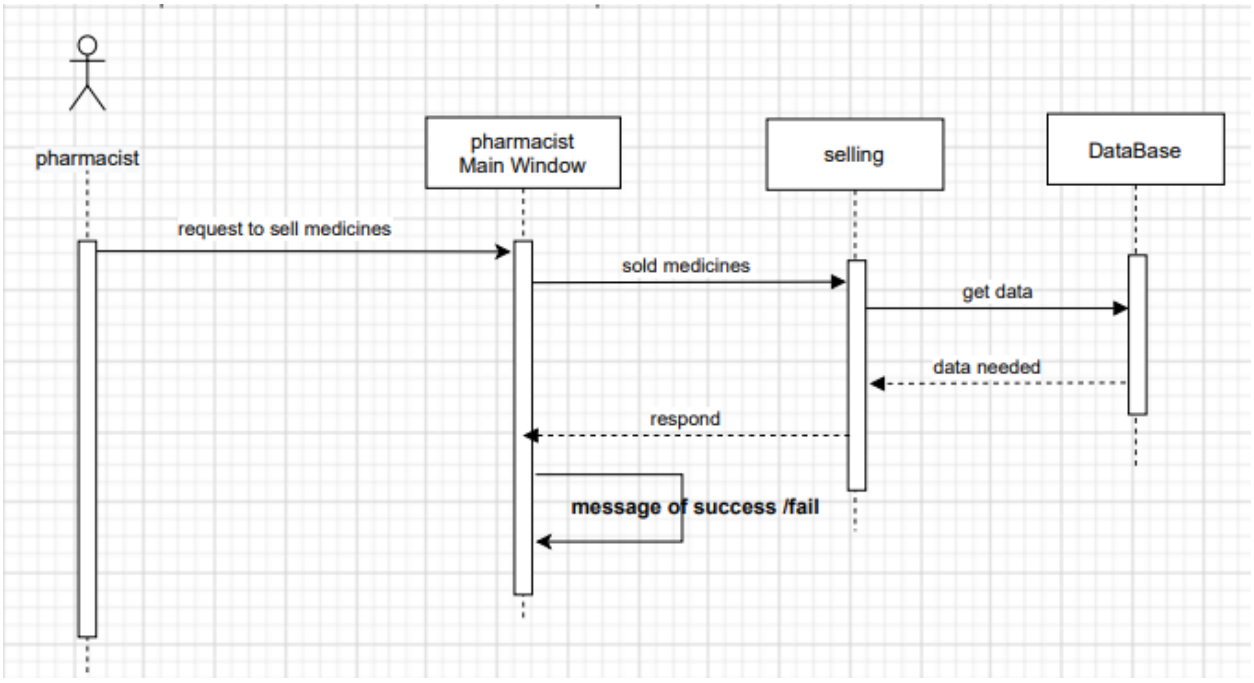

Admin
Admin
Main Window
manage suppliers
DataBase
request
click manage suppliers
insert / update / delete suppliers
respond
message of success / fail

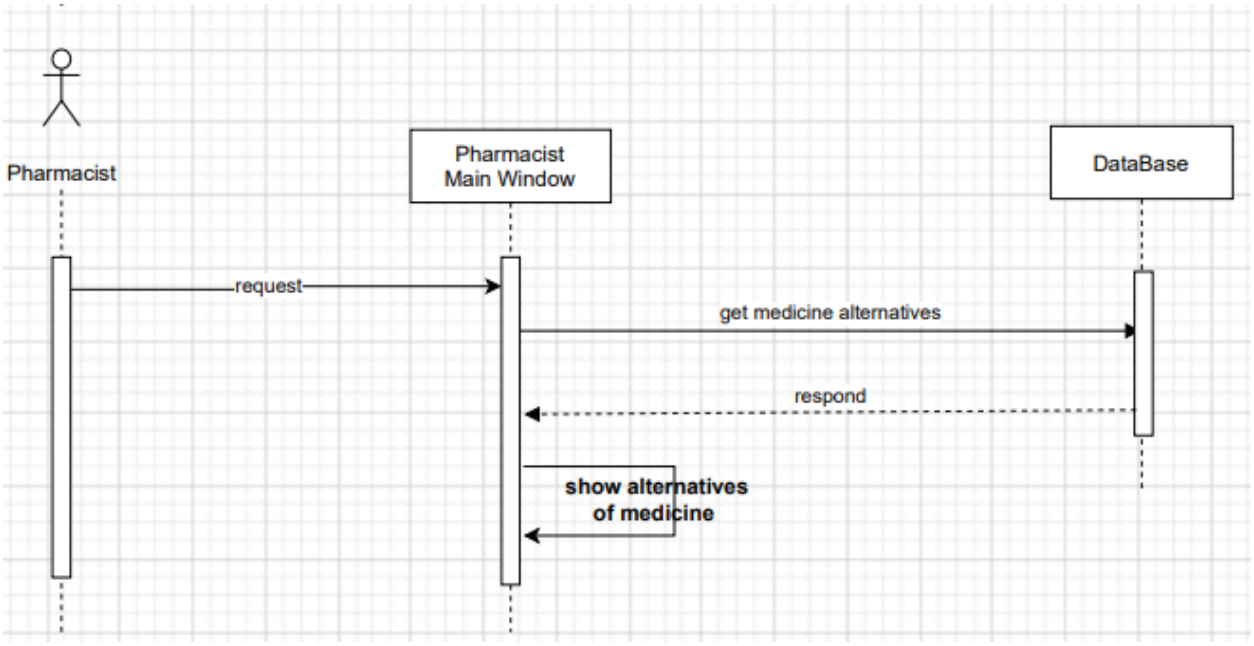

Admin
Admin
Main Window
manage users
DataBase
request
click manage users
insert / update / delete users
respond
message of success / fail


Admin
Admin
Main Window
manage stock
DataBase
request
click manage stock
get expired date medicines
data of this medicines
show specific medicines
in table view

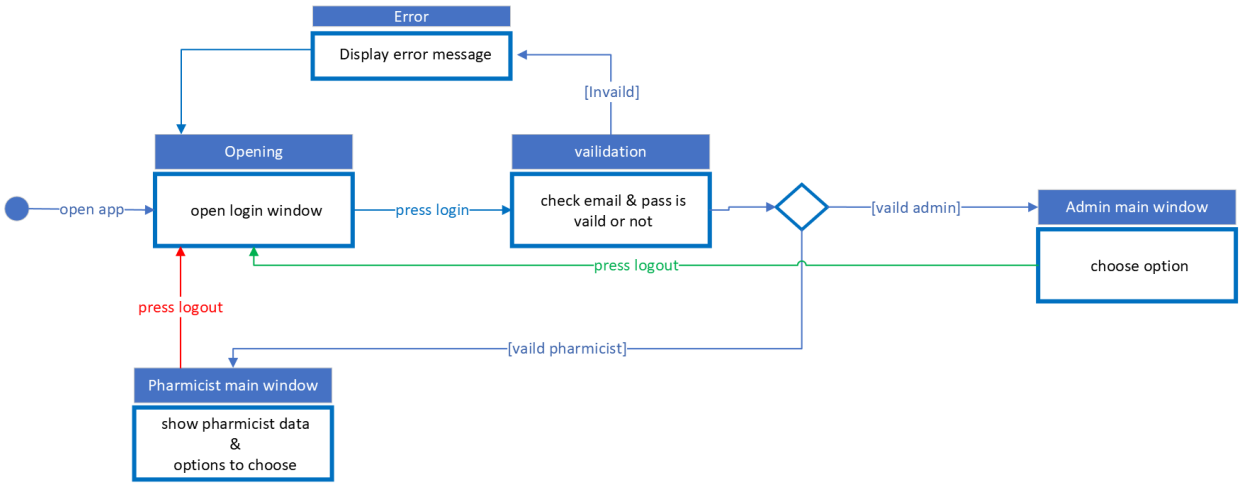

pharmacist
pharmacist Main Window
profile editing
DataBase
request
click edit profile
update data
respond
message of success / fail

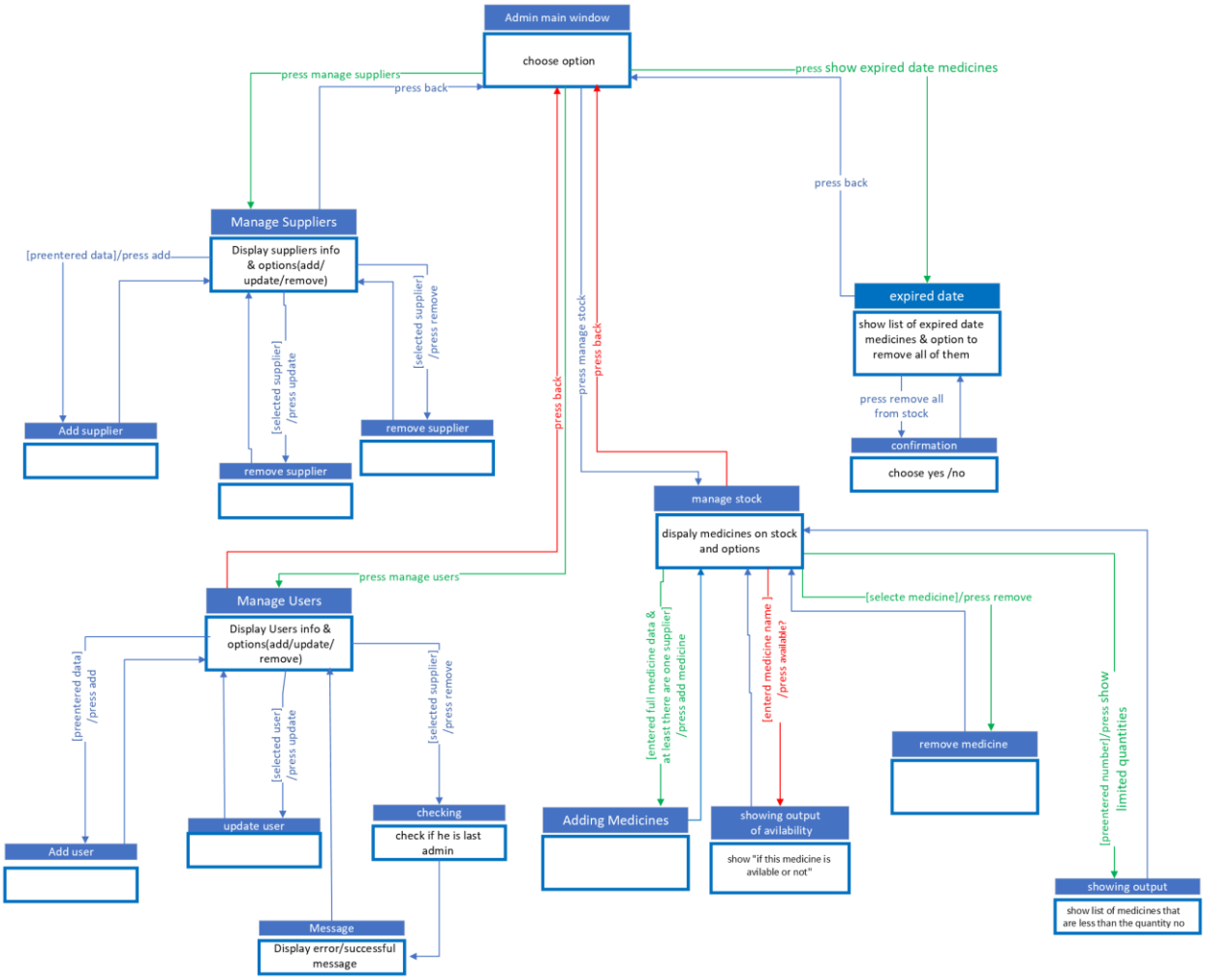

Pharmacist
Pharmacist Main Window
DataBase
request
get price
respond
show price message

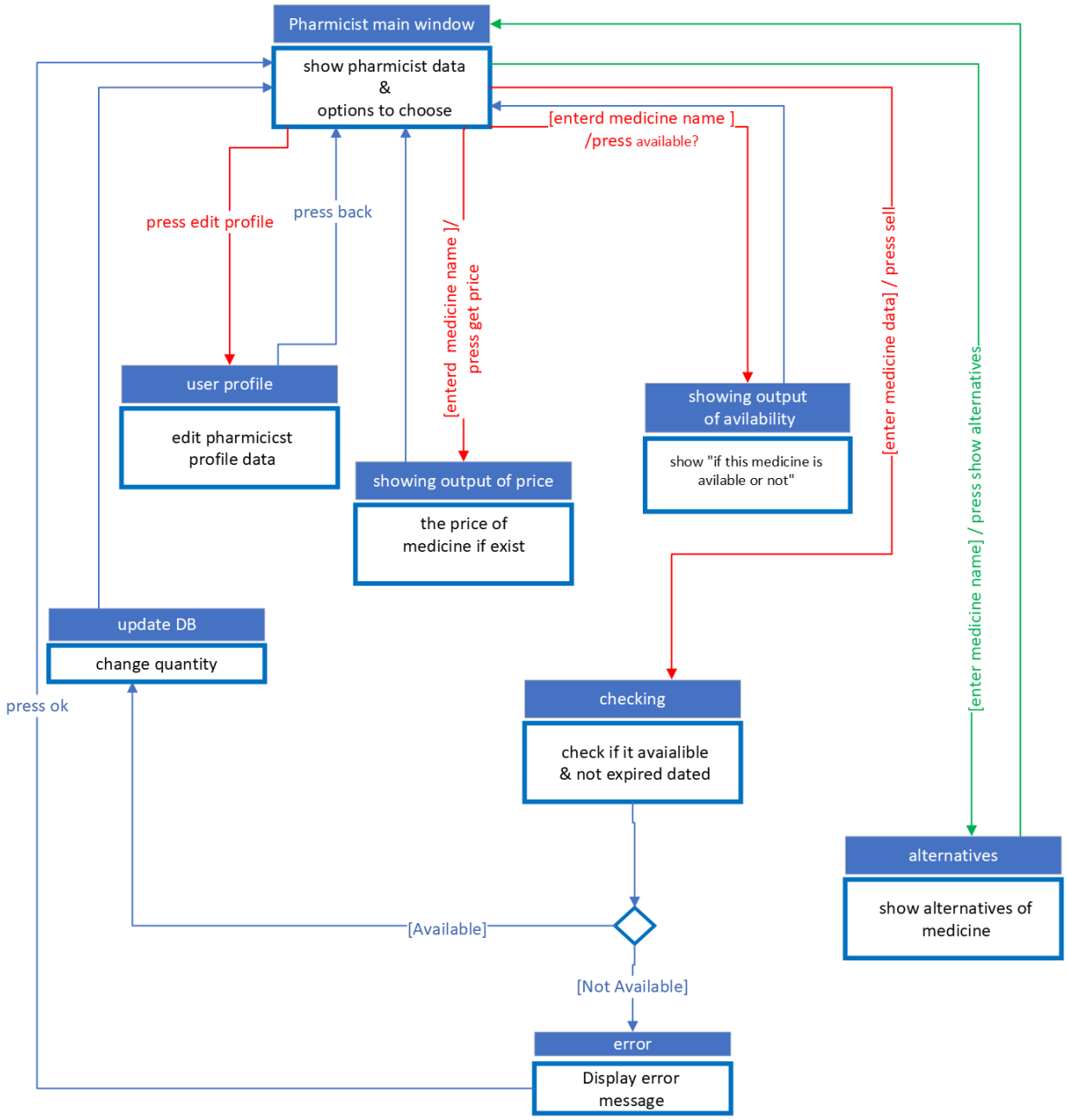

pharmacist
pharmacist Main Window
selling
DataBase
request to sell medicines
sold medicines
get data
data needed
respond
message of success /fail


Pharmacist
Pharmacist Main Window
DataBase
request
get medicine alternatives
respond
show alternatives of medicine

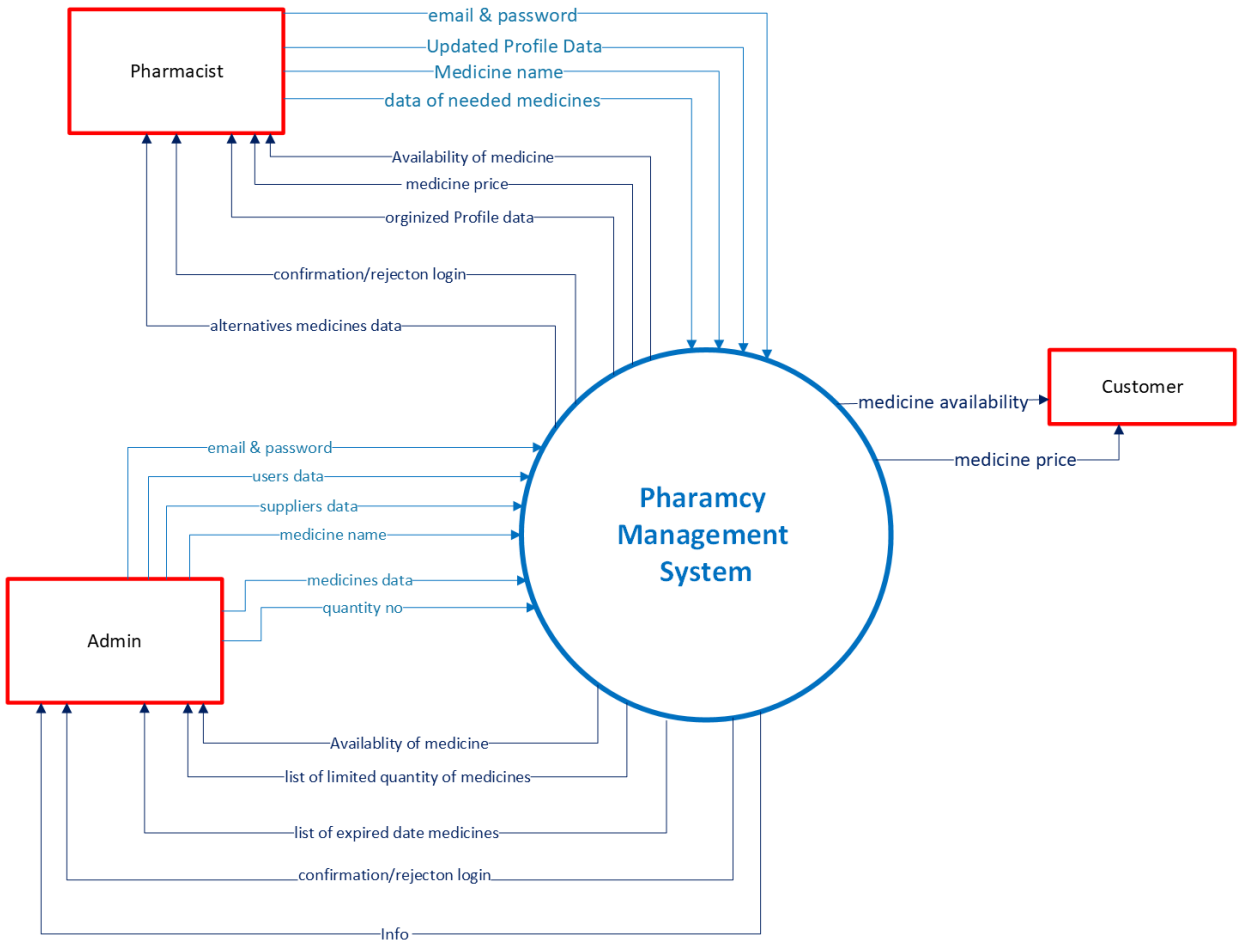
2.3) State Diagrams

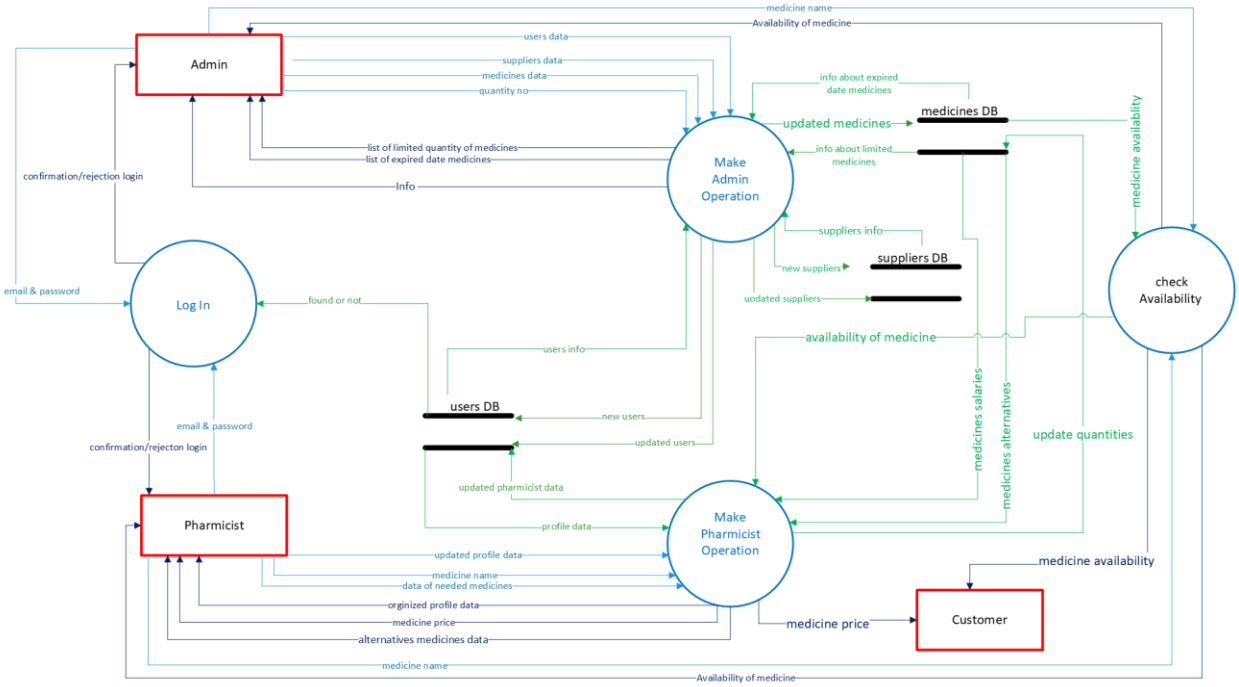


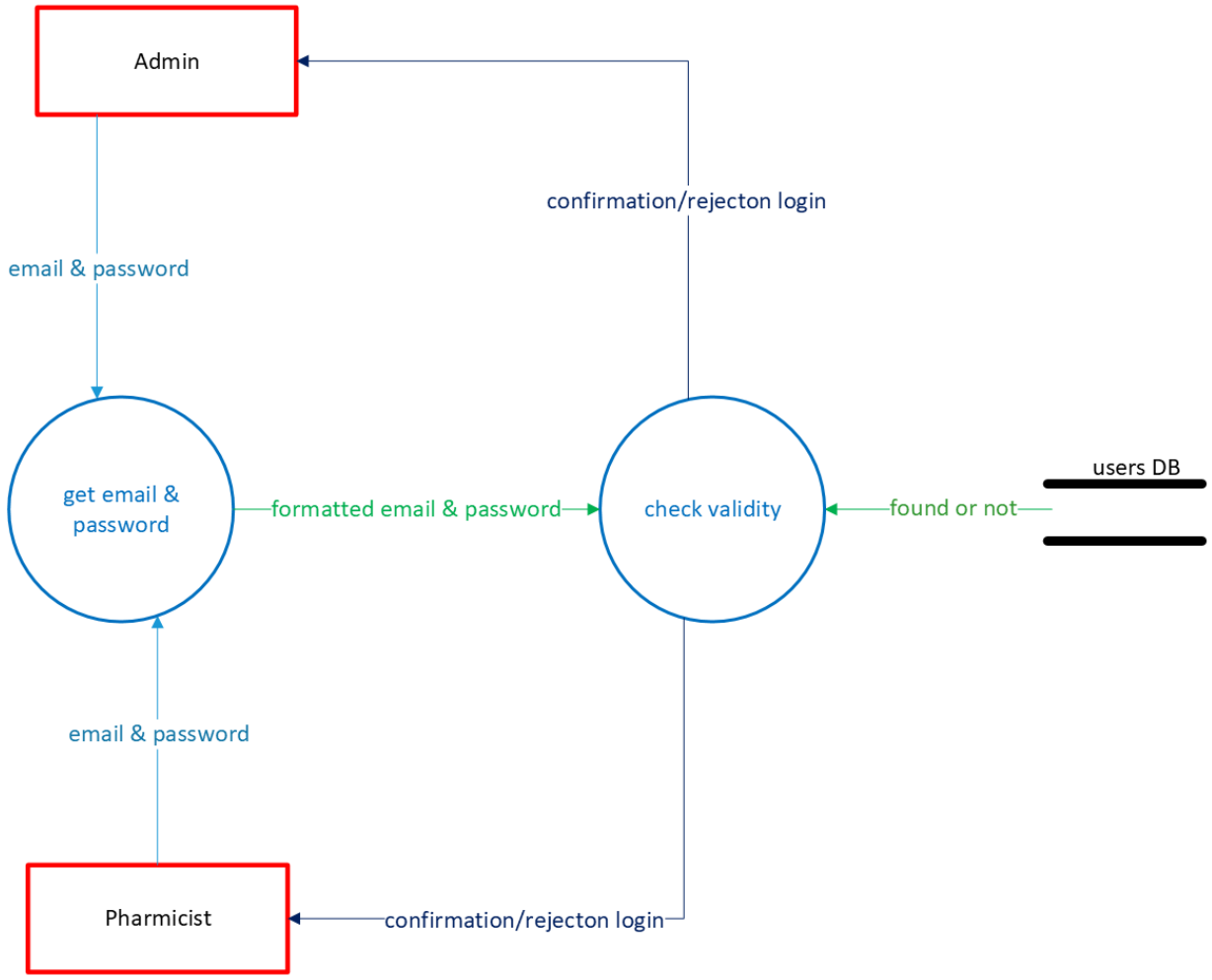

Admin main window
choose option
press manage suppliers
press back
press show expired date medicines
press back
Manage Suppliers
Display suppliers info & options(add/ update/remove)
[preentered data]/press add
Add supplier
[selected supplier] /press update
remove supplier
[selected supplier] /press remove
remove supplier
press back
press manage stock
press back
expired date
show list of expired date medicines & option to remove all of them
press remove all from stock
confirmation
choose yes /no
manage stock
dispaly medicines on stock and options
press manage users
Manage Users
Display Users info & options(add/update/ remove)
[preentered data] /press add
Add user
[selected user] /press update
update user
[selected supplier] /press remove
checking
check if he is last admin
Message
Display error/successful message
[entered full medicine data & at least there are one supplier] /press add medicine
Adding Medicines
[enterd medicine name] /press available?
showing output of avilability
show "if this medicine is avilable or not"
[selecte medicine]/press remove
remove medicine
[preentered number]/press show limited quantities
showing output
show list of medicines that are less than the quantity no

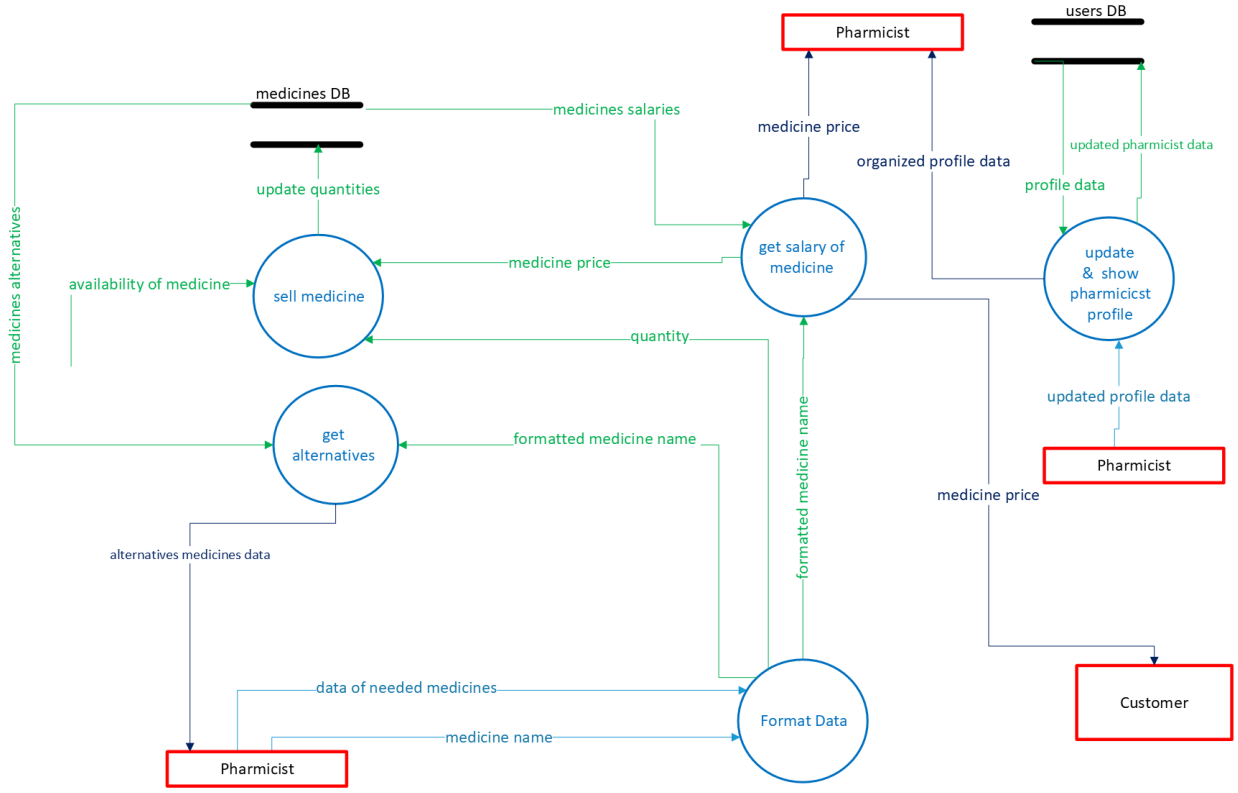

Pharmicist main window
show pharmicist data
&
options to choose
[enterd medicine name]
/press available?
press edit profile
press back
[enterd medicine name]/
press get price
[enter medicine data] / press sell
[enter medicine name] / press show alternatives
user profile
edit pharmicicst
profile data
showing output of price
the price of
medicine if exist
showing output
of avilability
show "if this medicine is
avilable or not"
update DB
change quantity
press ok
checking
check if it avaialible
& not expired dated
alternatives
show alternatives of
medicine
[Available]
[Not Available]
error
Display error
message

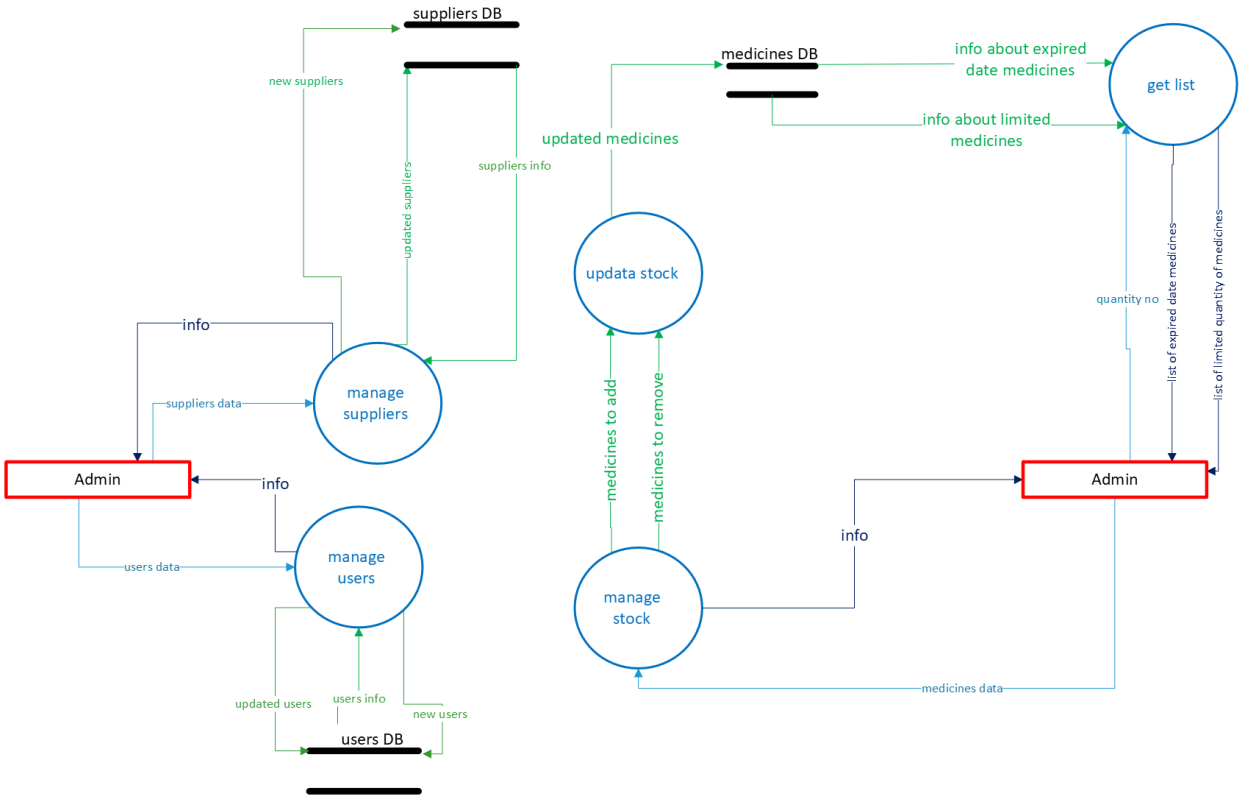
2.4) Data Flow Diagrams




medicine name
Availability of medicine
Admin
users data
suppliers data
medicines data
quantity no
info about expired date medicines
medicines DB
updated medicines
info about limited medicines
medicine availability
list of limited quantity of medicines
list of expired date medicines
Info
confirmation/rejection login
Make Admin Operation
suppliers info
suppliers DB
new suppliers
uodated suppliers
email & password
Log In
found or not
check Availability
users info
availability of medicine
users DB
new users
updated users
medicines salaries
medicines alternatives
update quantities
email & password
confirmation/rejecton login
updated pharmicist data
Pharmicist
profile data
Make Pharmicist Operation
updated profile data
medicine name
data of needed medicines
medicine availability
orginized profile data
medicine price
medicine price
Customer
alternatives medicines data
medicine name
Availability of medicine

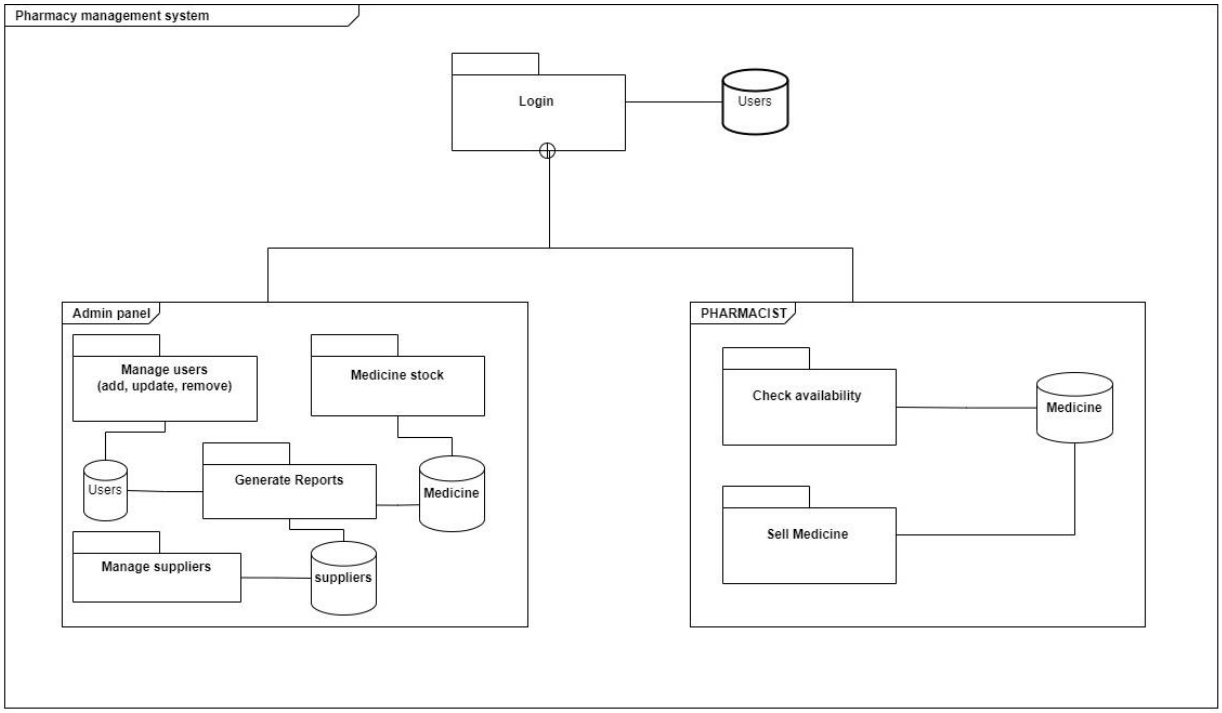

Admin
confirmation/rejecton login
email & password
get email & password
formatted email & password
check validity
found or not
users DB
email & password
Pharmicist
confirmation/rejecton login


Pharmicist
users DB
medicines DB
medicines salaries
medicine price
organized profile data
updated pharmicist data
profile data
update quantities
medicines alternatives
availability of medicine
sell medicine
medicine price
get salary of medicine
update & show pharmicicst profile
quantity
updated profile data
get alternatives
formatted medicine name
Pharmicist
medicine price
alternatives medicines data
formatted medicine name
data of needed medicines
Format Data
Customer
medicine name
Pharmicist


suppliers DB
new suppliers
updated suppliers
suppliers info
info
suppliers data
manage suppliers
Admin
info
users data
manage users
updated users
users info
new users
users DB
medicines DB
updated medicines
updata stock
medicines to add
medicines to remove
manage stock
info
medicines data
info about expired date medicines
info about limited medicines
get list
quantity no
list of expired date medicines
list of limited quantity of medicines
Admin

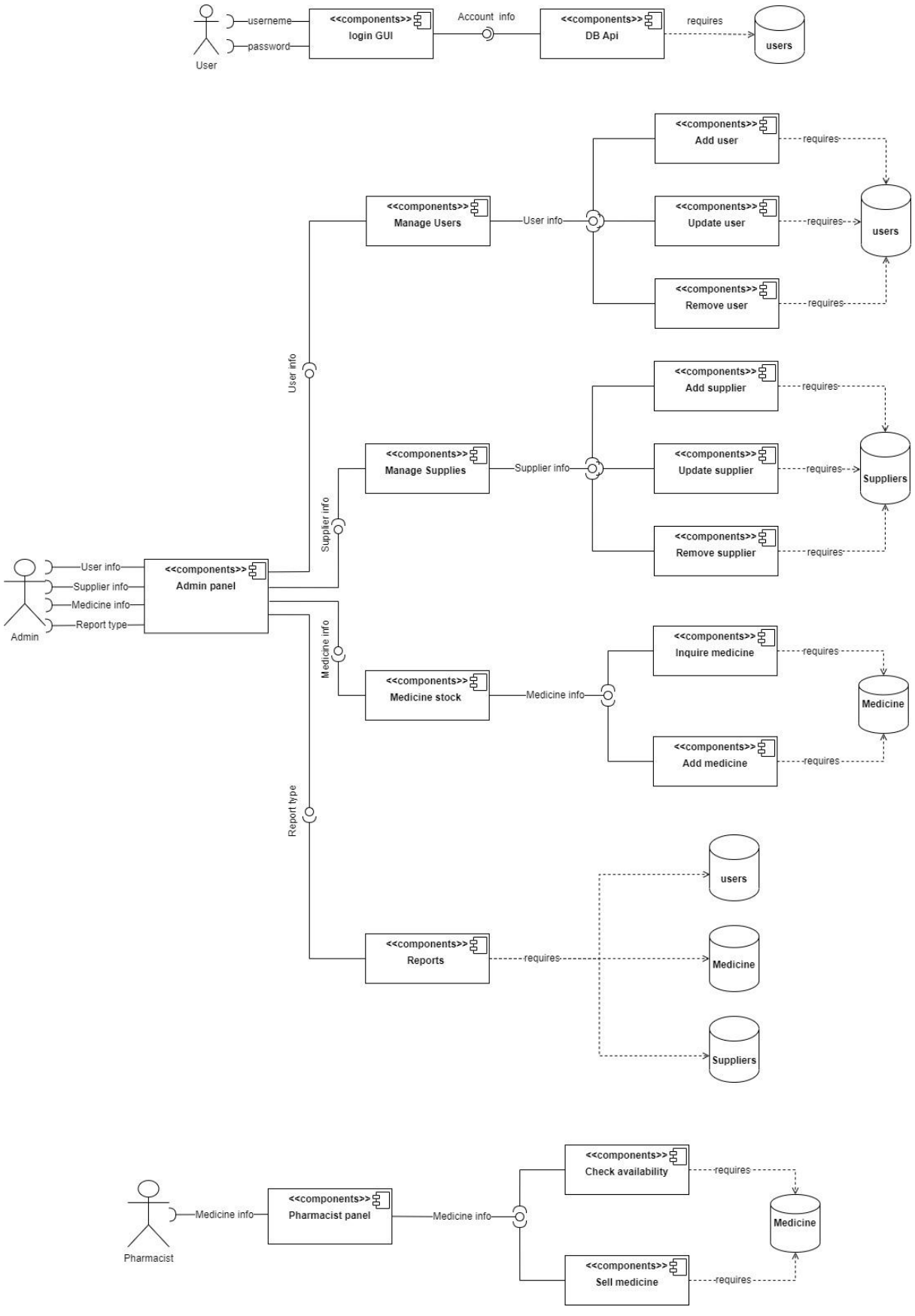
2.5) System Architecture

This is our system architecture diagram in form of a block diagram that shows the major sub-systems in our project and how they interact with each other.

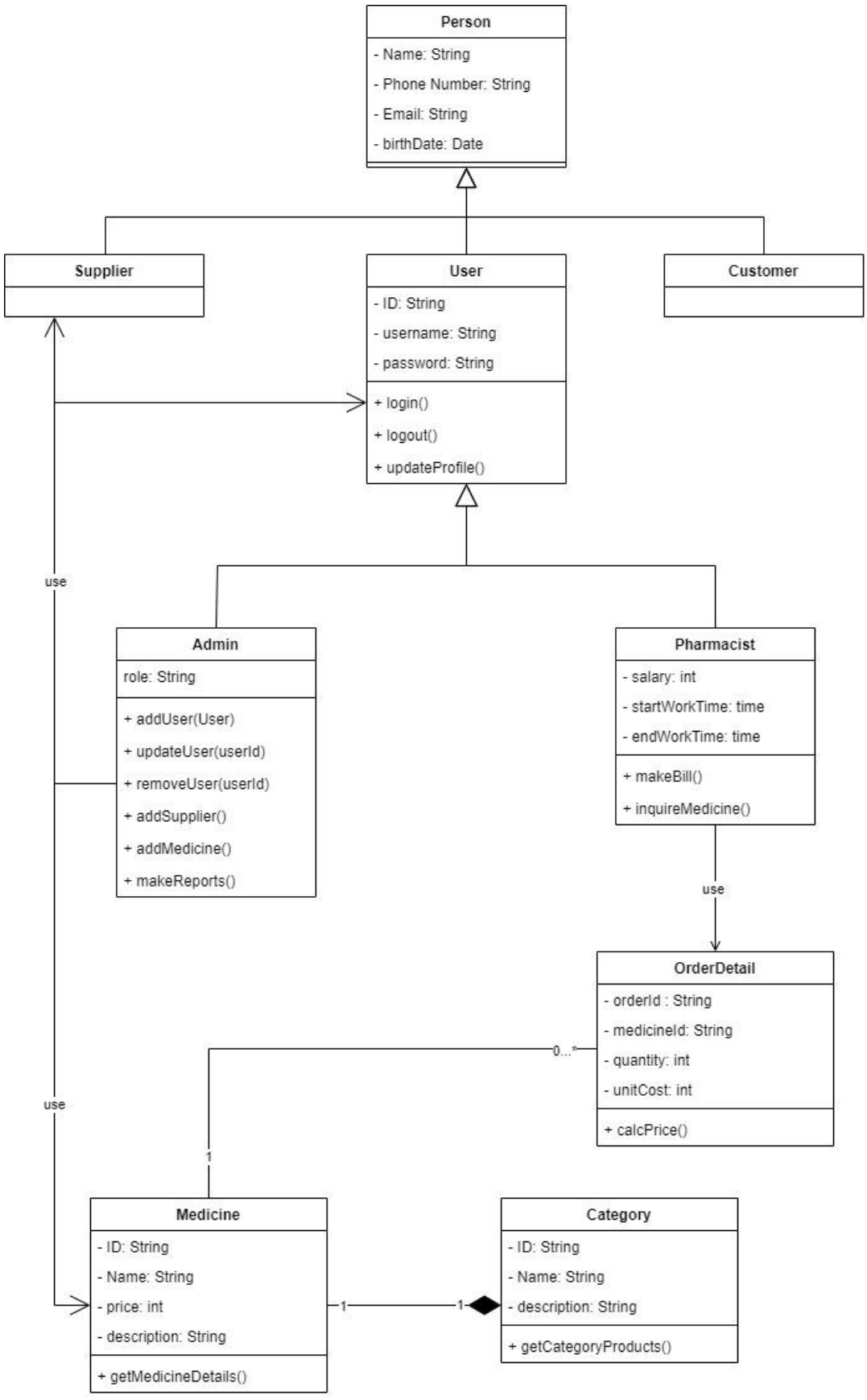


System Architecture Diagram

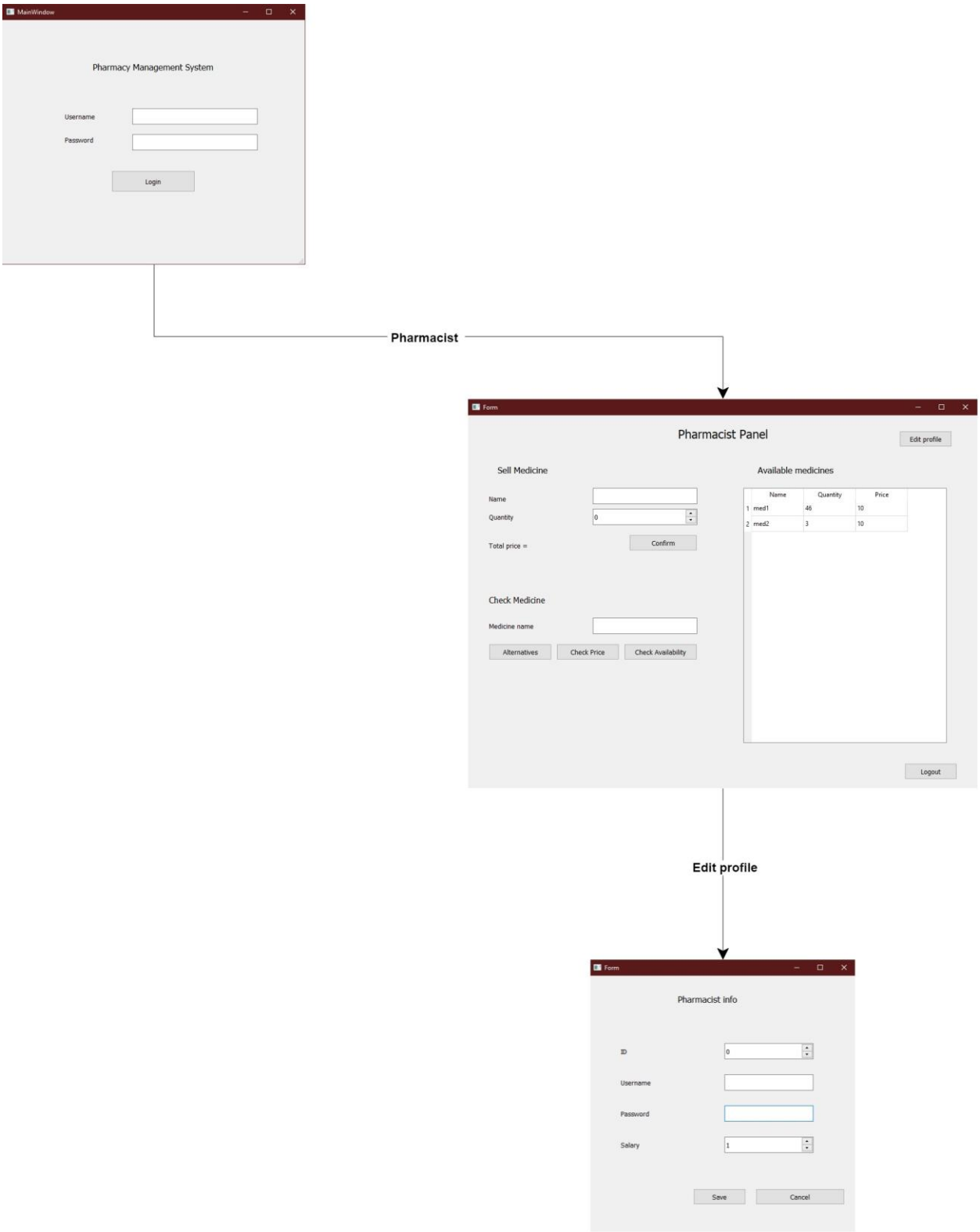
2.6) Component Diagram

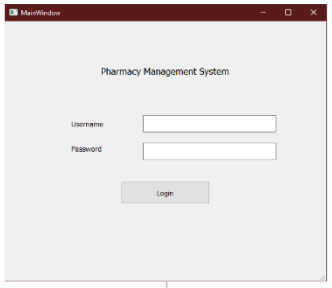


2.7) Class Diagram

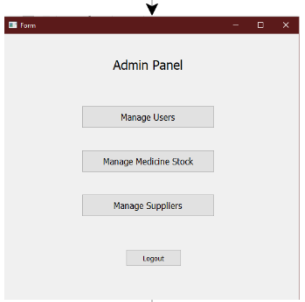


2.8) User Interface Design





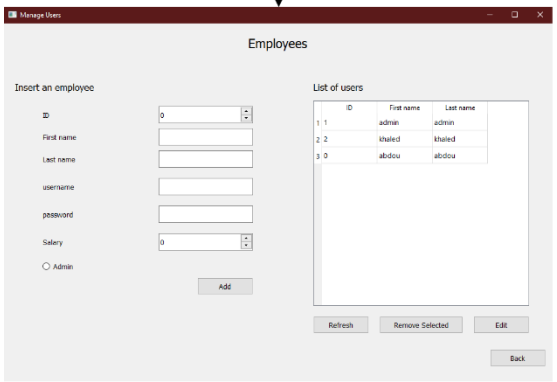
Admin

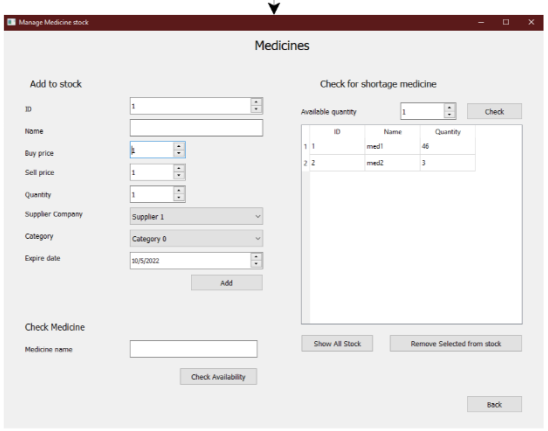


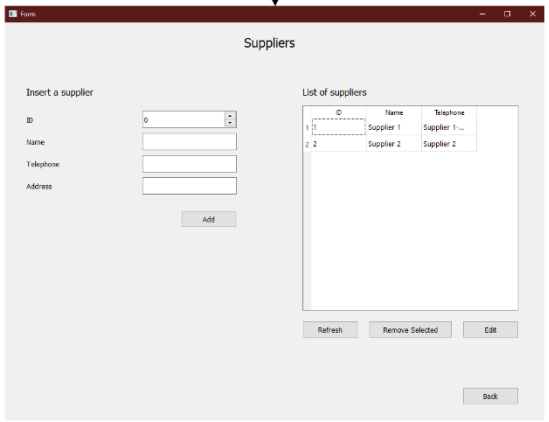
Manage Users

Medicine stock

Manage suppliers

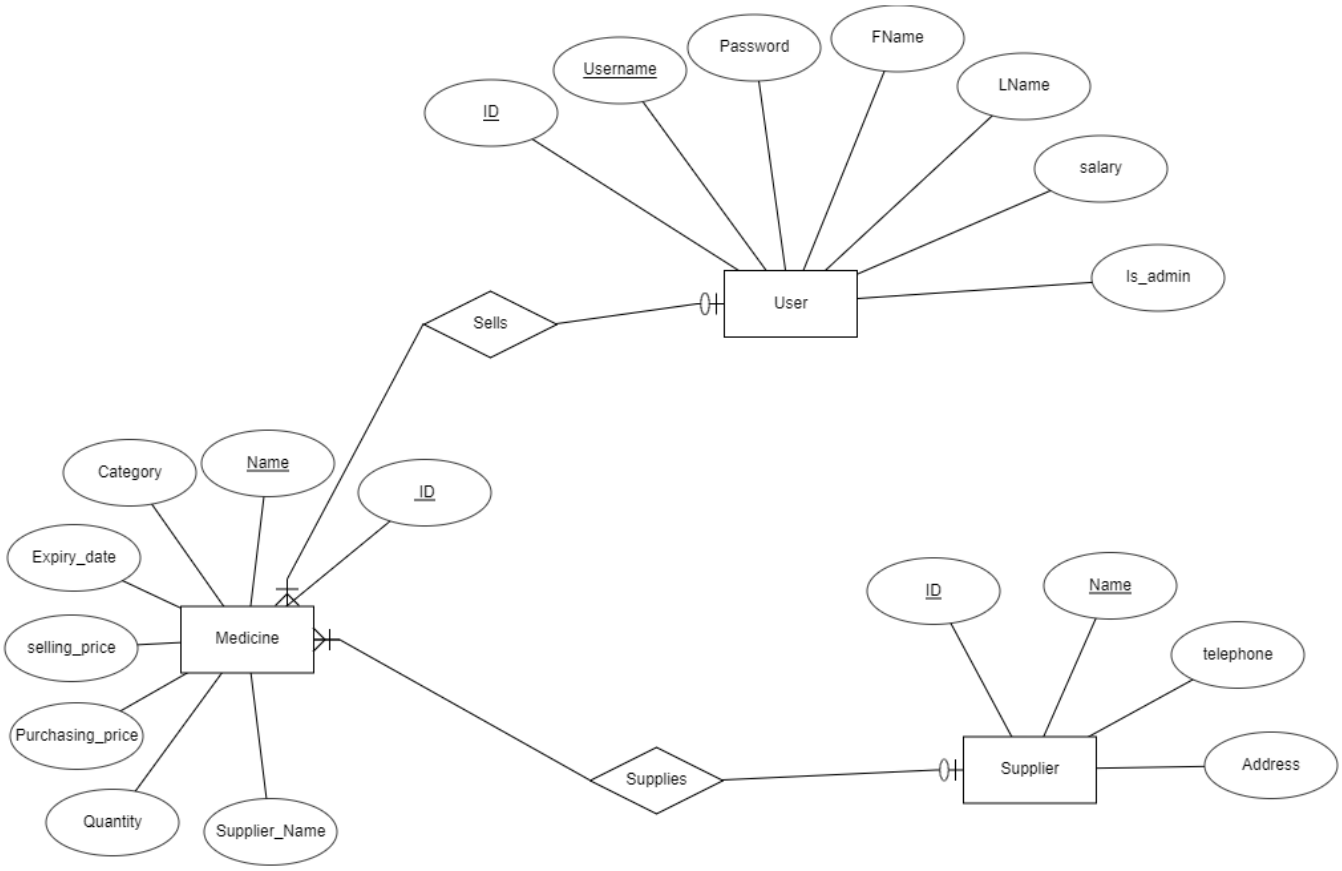




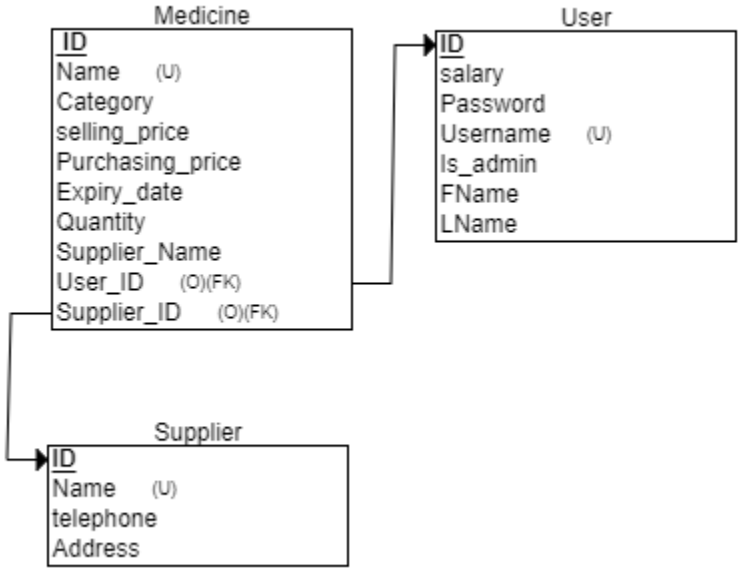


3) Database Diagrams

3.1) ER Diagram



3.2) Relational Schema

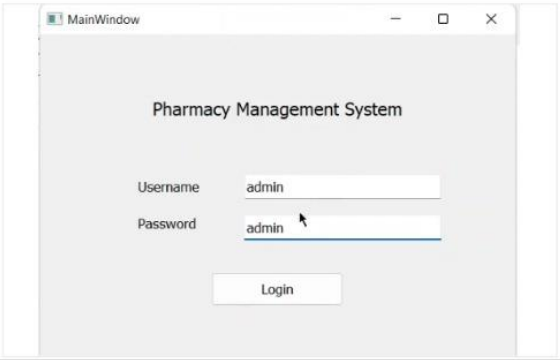


4) User Guide

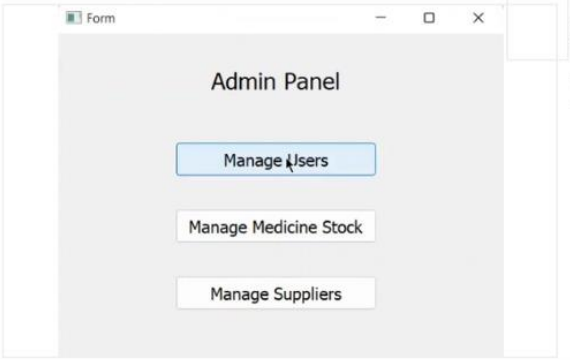
4.1) Add new admins or pharmacists

add new Admins or Pharmacists

Admin functionality



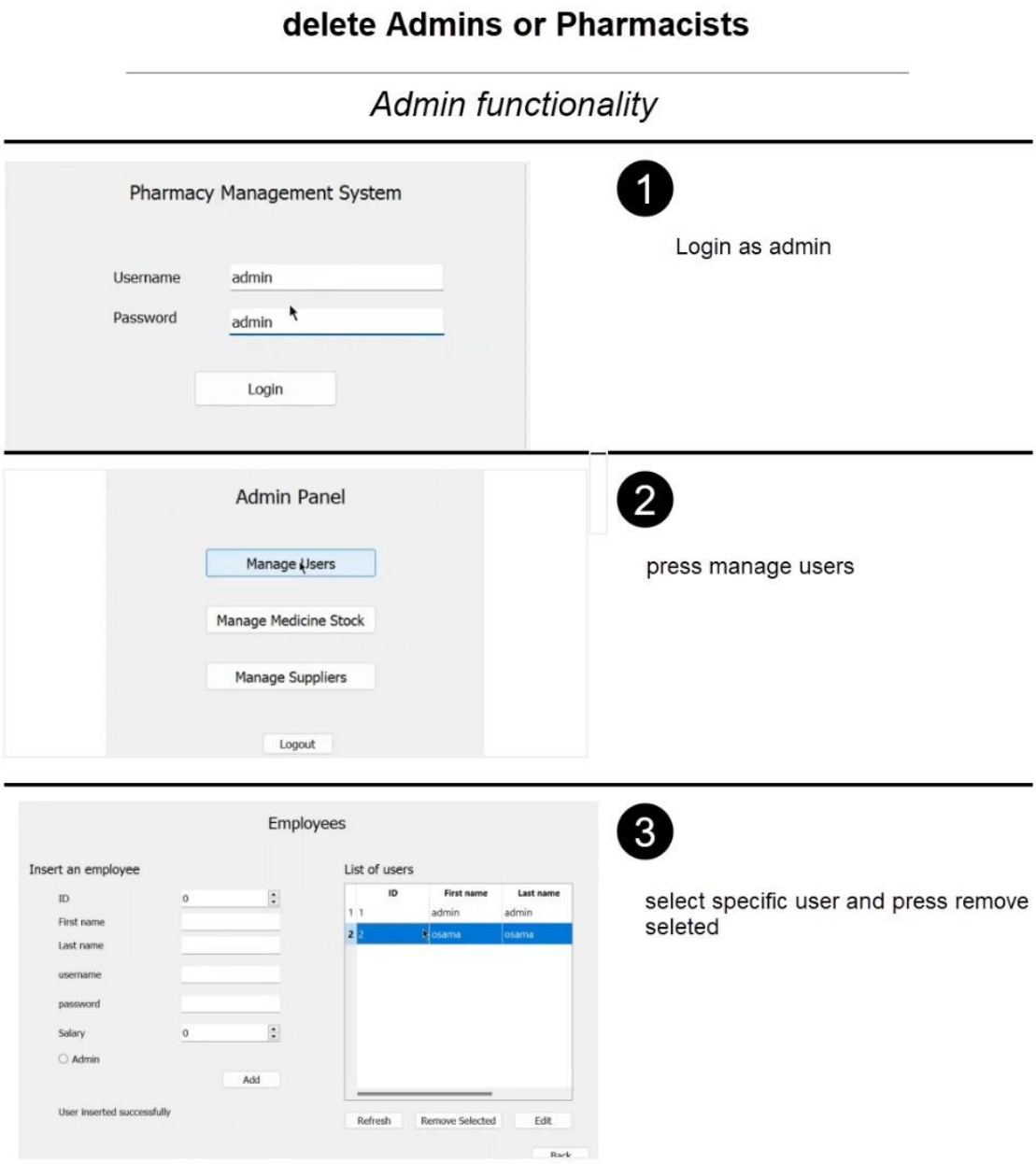
1 login as admin



2 press mange users

3 enter the needed data then press Add

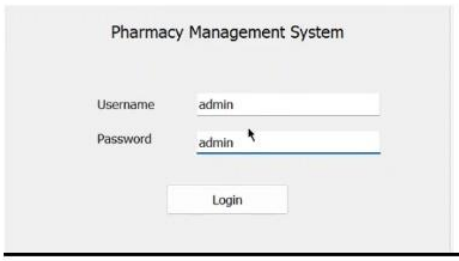
4.2) Delete admins or pharmacists



4.3) Update admins or pharmacists data

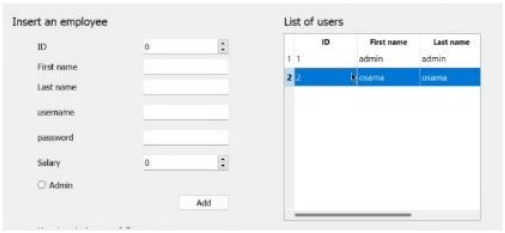
update Admins or Pharmacists data

Admin functionality

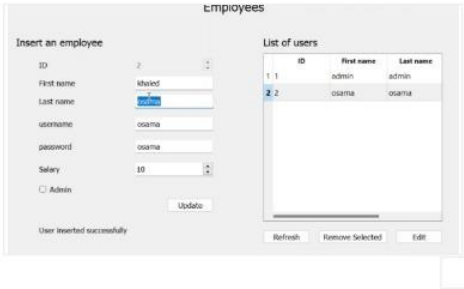


1. Login as admin

2. press manage users



3. select specific user and press edit

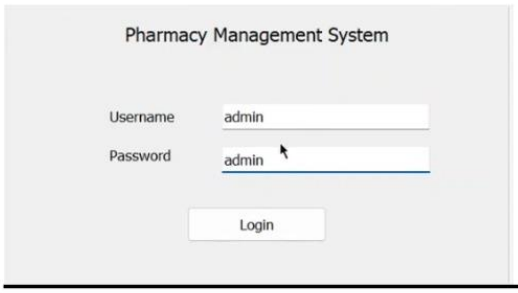


4. enter updated data then click update

4.4) Delete suppliers

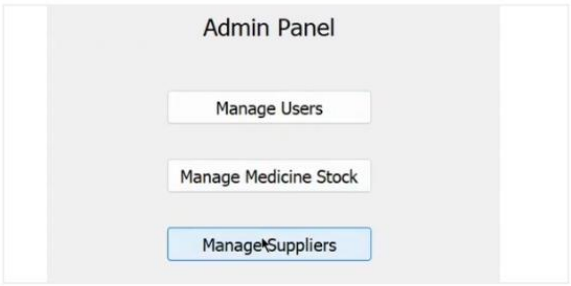
delete suppliers

Admin functionality



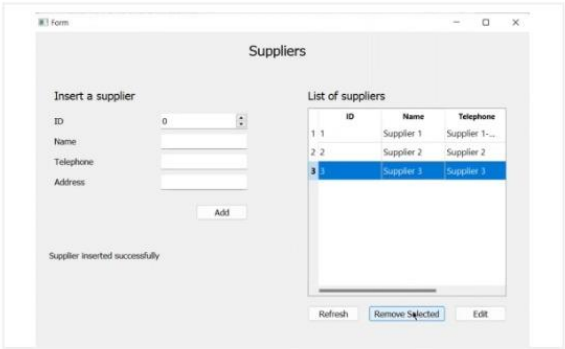
1

Login as admin



2

press manage suppliers



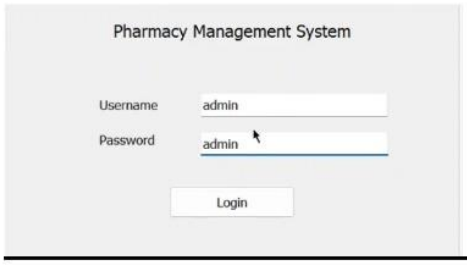
3

select specific supplier and press remove seleted

4.5) Update suppliers data

update suppliers data

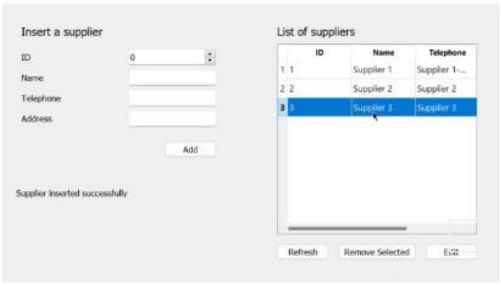
Admin functionality



1. Login as admin

2. press manage users

3. select specific user and press edit

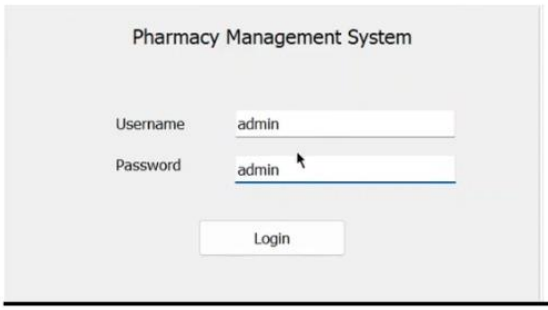


4. enter updated data then click update

5.6) Add new suppliers

add new suppliers

Admin functionality

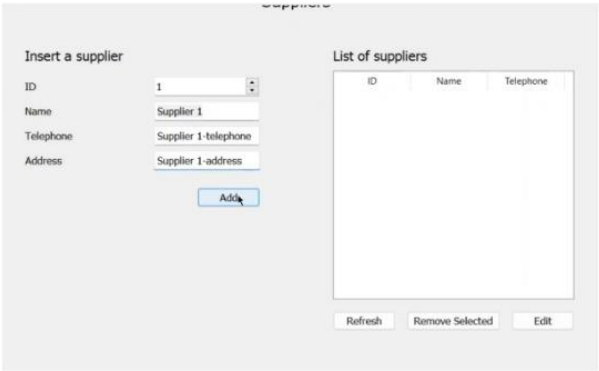


1

Login as admin

2

press manage suppliers



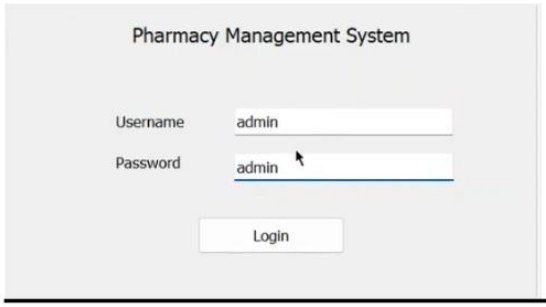
3

enter needed data then press add

4.7) Check medicine availability

check medicine Availability

Admin functionality

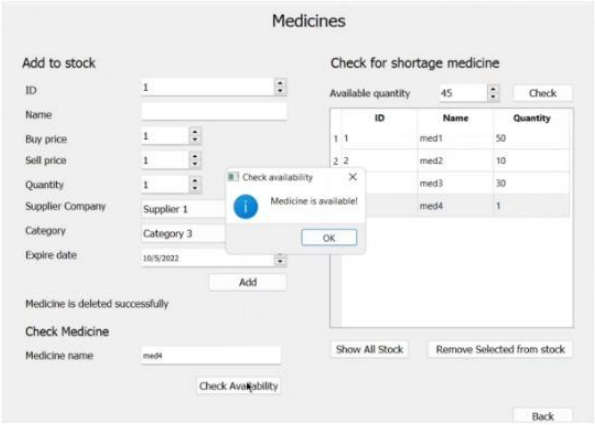


1

Login as admin

2

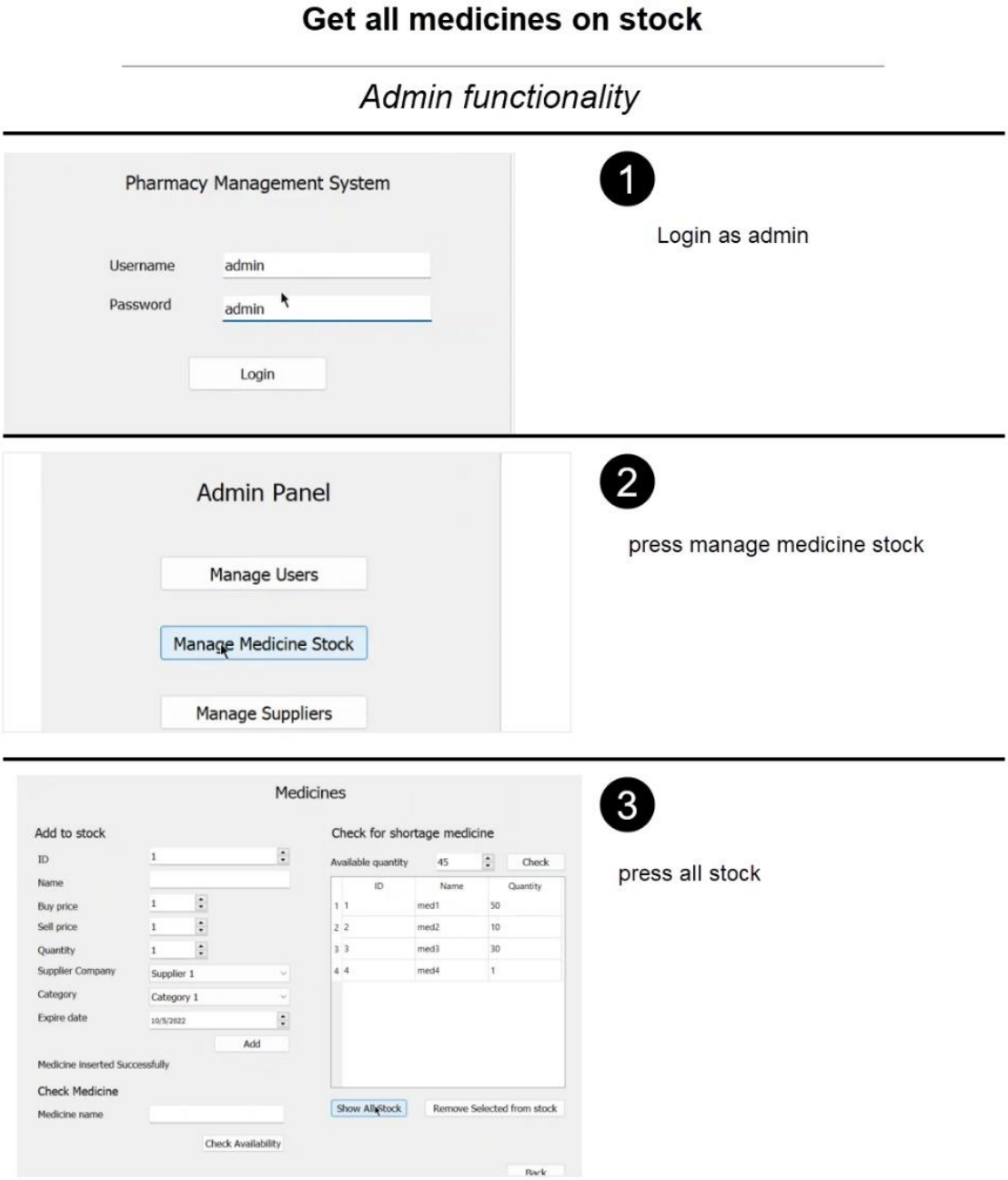
press manage medicine stock



3

enter medicine name then press check availability

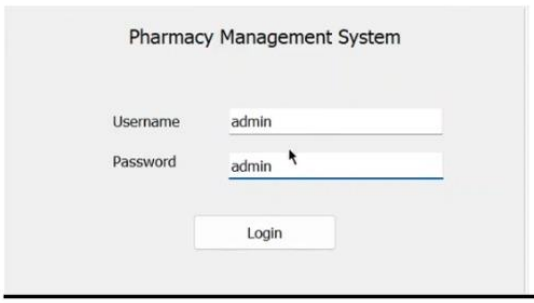
4.8) Get all medicines on stock



4.9) Remove medicines from stock

remove medicines from stock

Admin functionality

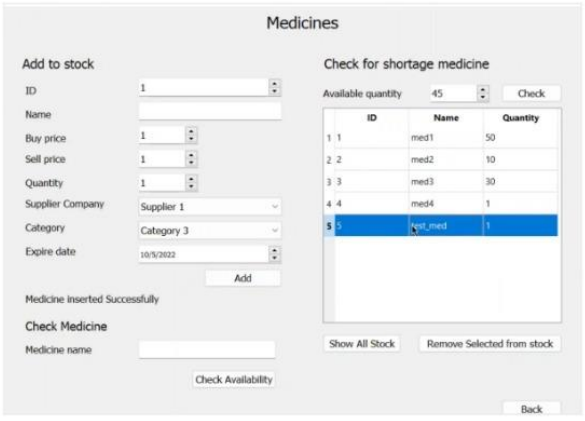


1

Login as admin

2

press manage medicine stock



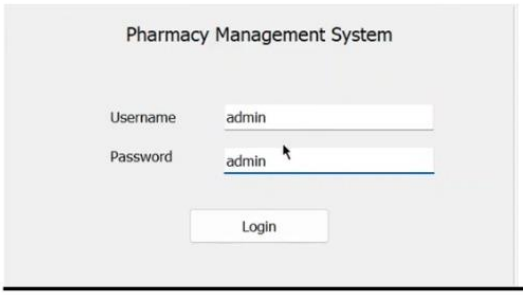
3

selected specific item then press remove selected from stock

4.10) Get limited quantities of medicines

Get limited quantities of medicines

Admin functionality

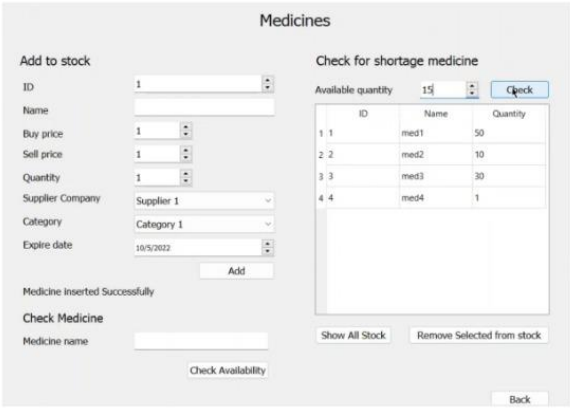


1

Login as admin

2

press manage medicine stock



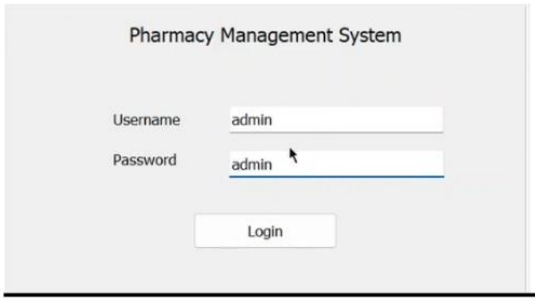
3

enter quantity number then press check

4.11) Add new medicine to stock

add new medicines to stock

Admin functionality

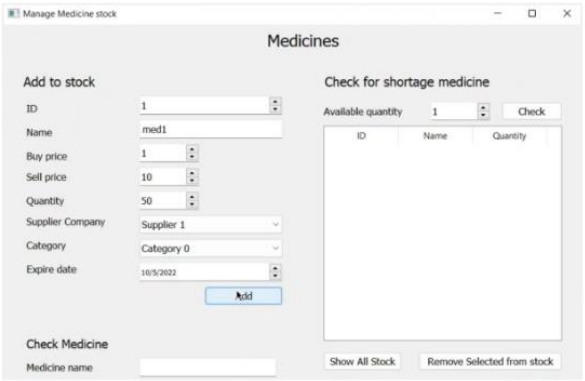


1

Login as admin

2

press manage medicine stock



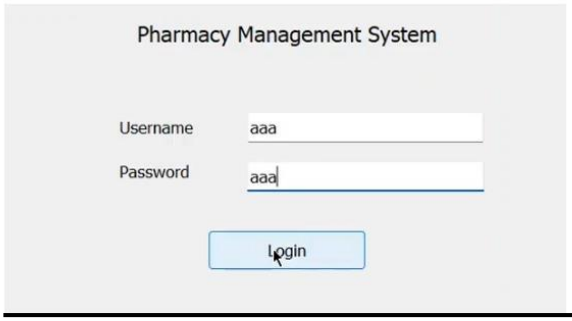
3

enter needed data then press add

4.12) Get medicine alternative

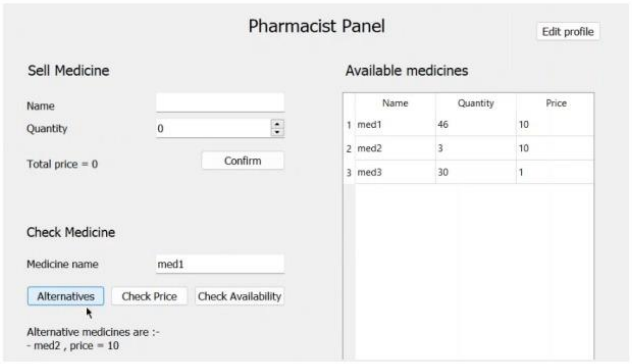
get medicine alternatives

Pharmacist functionality



1

Login as Pharmacist



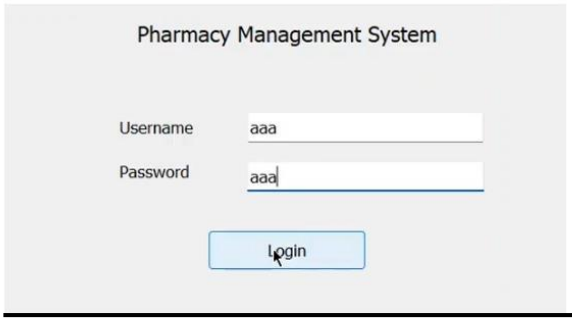
2

enter medicine name then press alternatives

4.13) Sell medicine

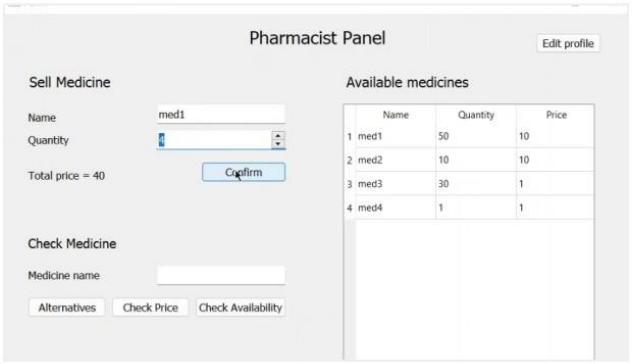
Sell medicine

Pharmacist functionality



1

Login as Pharmacist



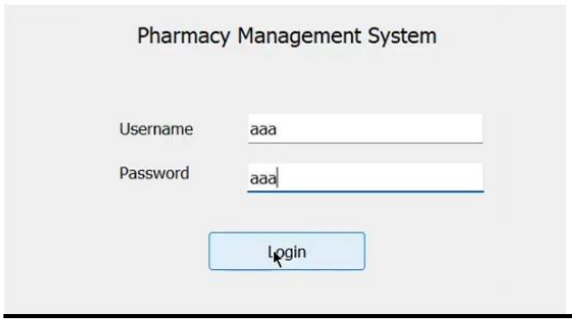
2

enter medicine name and quantity then press confirm

4.14) Get medicine price

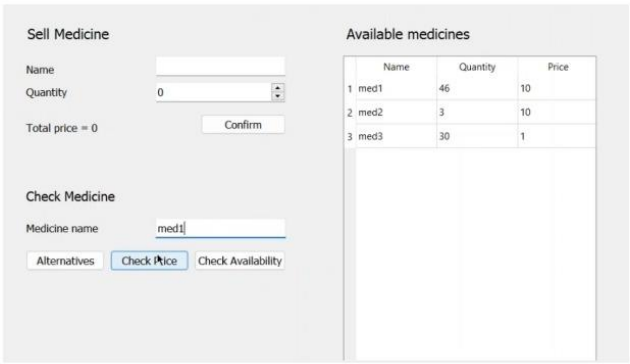
get medicine price

Pharmacist functionality



1

Login as Pharmacist



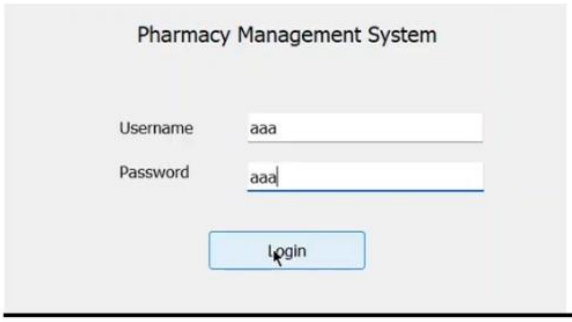
2

enter medicine name then press check price

4.15) Edit pharmacist profile data

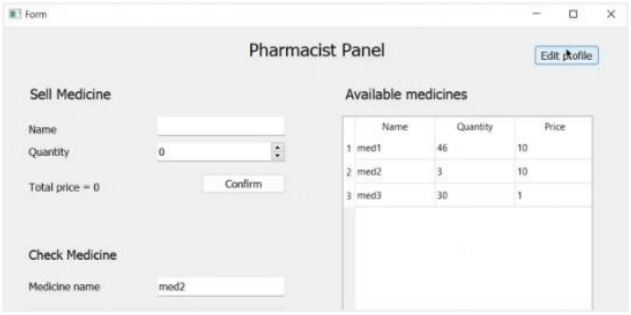
edit Pharmacist profile data

Pharmacist functionality



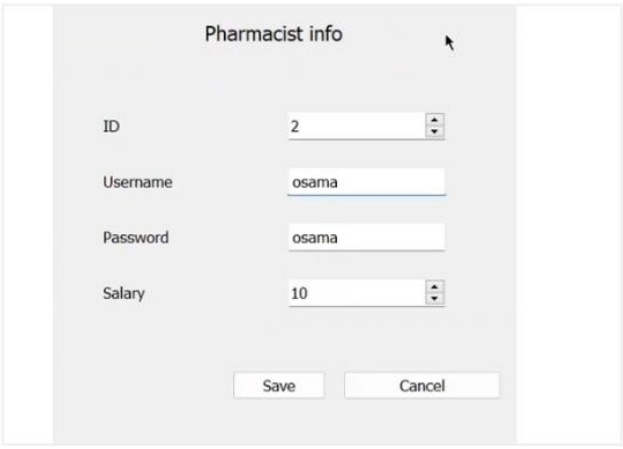
1

Login as *Pharmacist*



2

press *edit profile*



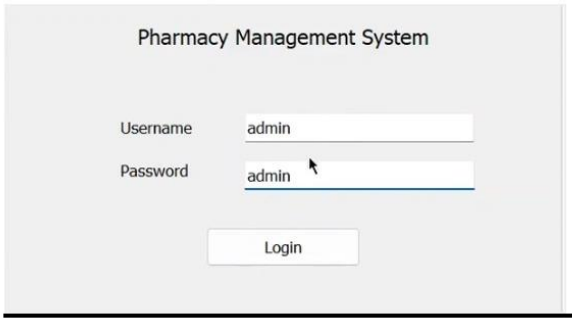
3

enter your new data then press save or cancel

4.16) Logout

Logout

Admin functionality



1

Login as admin

2

press logout