



American International University-Bangladesh (AIUB)

**Department of Computer Science
Faculty of Science & Technology (FST)
Summer 19_20**

PROJECT

ONLINE MEDICINE REPOSITORY

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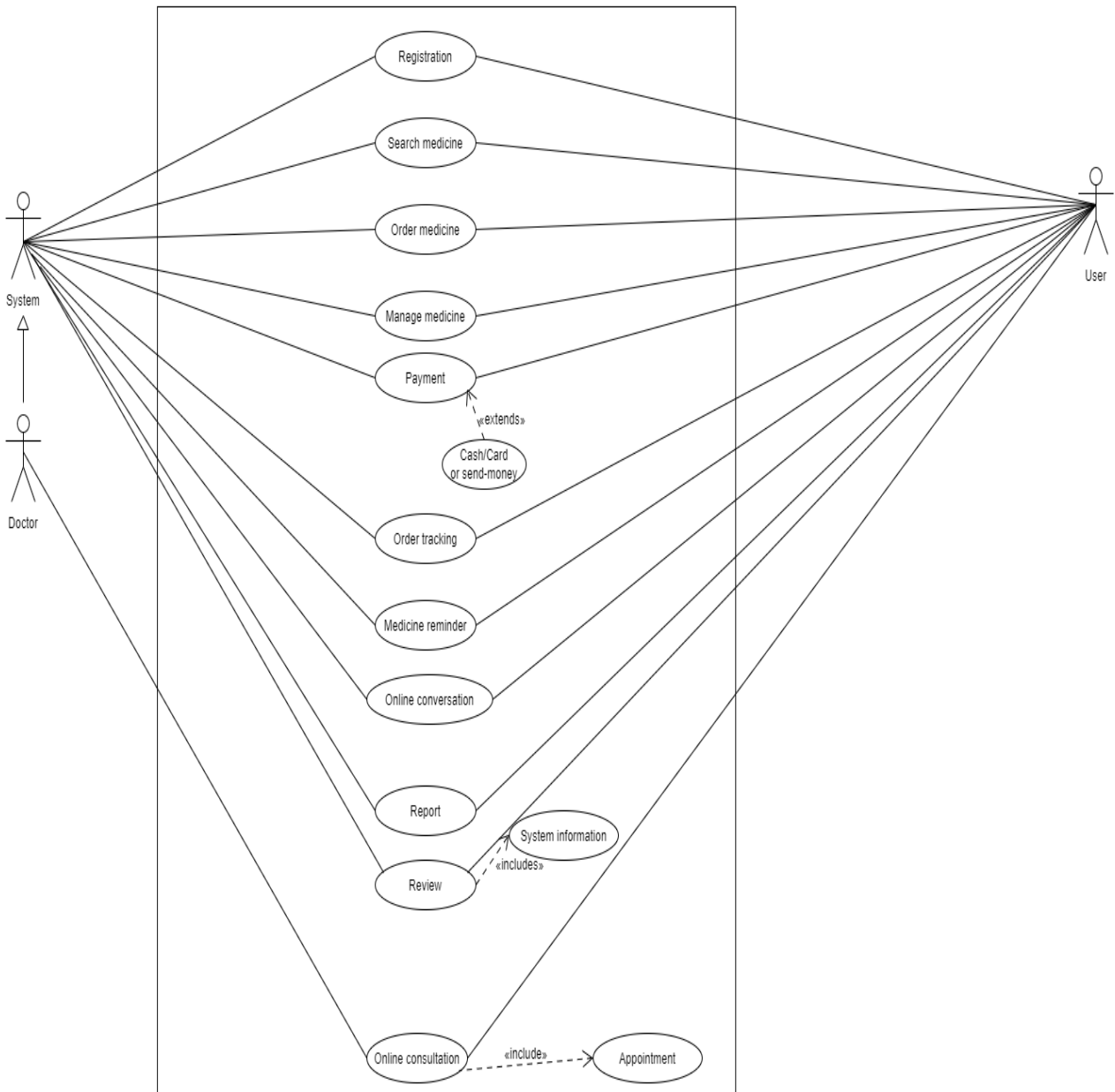
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USE CASE DIAGRAM DESCRIPTION:

Online medicine repository is maintained by its system interface, so that users can use it to do their registration on the site. User can Sign in here. As a result they get to know about everything in the website and also get specific facilities. User first need to go to our website page and then in that there is a search bar option to find out the necessary drugs of their need. After that they have to order those medicines to add them to the cart, so that system can prepare the bill. The system then controls the whole activity, firstly the order is confirmed and then made ready for delivery within 24hrs. Secondly, both the system and user can track the order when it will be handed over to customer. After the order completion the user have to complete the bill as there are options of payment either with card or cash and others. Overall, the system has to handle the whole activity along with the maintenance of the repository and the activities performed in the system. In the system there is also an option of reminder to notify users to take specific medicines in due time that is integrated within the system interface module. And last of all the system helps users to do reports and reviews on the basis of the system's performance to develop a better platform for the customers. They get to report and do other necessary things though online or live chat also which is within the system. And there will be new addition to conduct online appointment with doctors in the system interface.

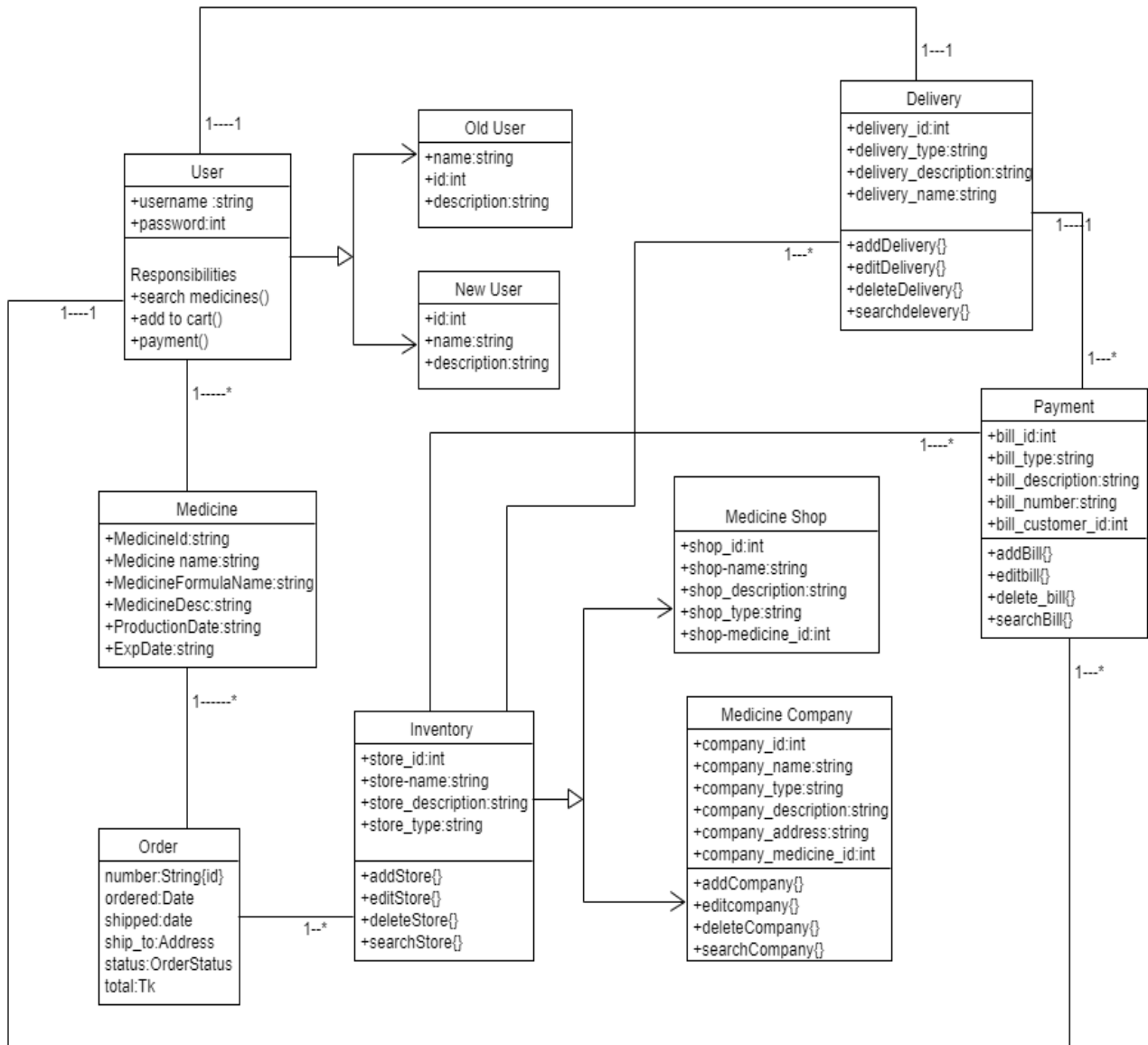
USE CASE DIAGRAM OF ONLINE MEDICINE REPOSITORY:



CLASS DIAGRAM DESCRIPTION:

Online Medicine Repository is maintained by its system. Here we have User class where customer can add their name and password in public type attribute. In this class customer can easily search a product, add them into cart and easily make payment. User class has two types of classes: old and new user type class. Both of them have string type name and description, int type user_id where all of them are public type attribute. Then user enters in product section. In this class we have string type Medicine_ID, Medicine_Name, Medicine_Formula_name, Medicine_Desc, Production_date and Exp_date. All of them are public attribute. Relation between User and Medicine class is 1 to many, User and Payment class is 1 to many, User and Delivery class is 1 to 1. Then user makes the order so we have Order class where we have string type name and address, date type order_date and shipping_date and lastly we have total cost(TK.). All are public. Placing order we go to the Inventory class. Here we have string type Store_name, Store_Descs, Store_Type and int type Store_ID. All are in public. Inventory class has two types of classes: Medicine Shop and Medicine Company. Inventory class has 1 to many relation with Order class, 1 to many relation with Payment class and Delivery class. In Medical shop section we have int type Shop_ID, Shop_Medicine_ID and string type Shop_name, Shop_Desc, Shop_type. All are in public. Medicine company class has int type Company_id, Company_medicine and String type Company_name, Company_type, Company_desc, Company_Address. All in public. Its responsibility is adding, editing, delete or search a company for the website's inventory. When order is placed in the Inventory class it goes directly to the Delivery class and Payment class. In delivery class we have int type Delivery_Id and string type Delivery_type, Delivery_Desc, Delivery_name. All are in public. Relation between Delivery to Customer class is 1 to 1 and Delivery to Payment class is 1 to 1. Then we have Bill class we have int type Bill_id, Bill_customer_Id and string type Bill_type, bill_desc, Bill_number. All are in public. This bill class has 1 to many relation with User class and one to many relation with the Delivery class.

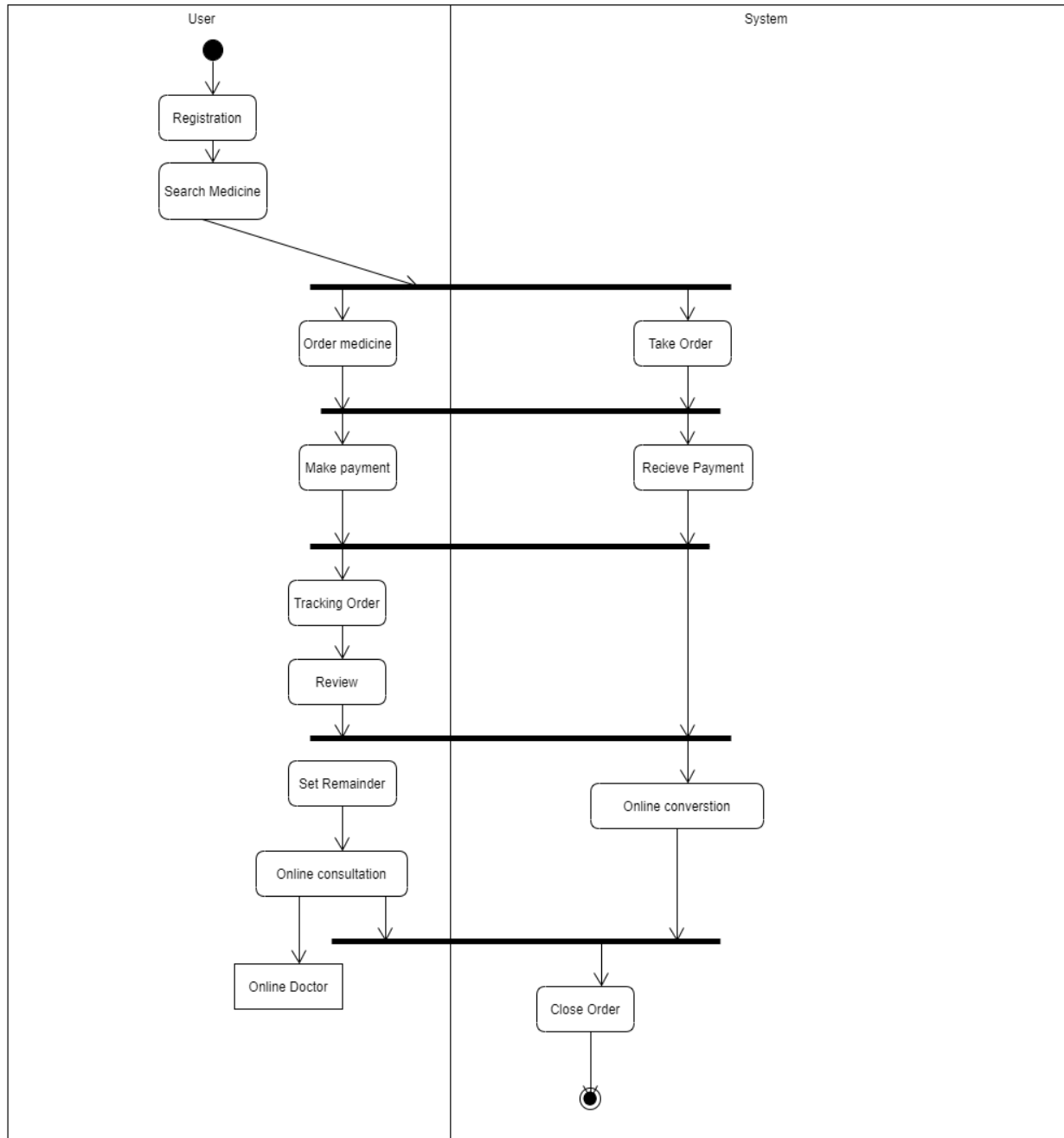
CLASS DIAGRAM OF ONLINE MEDICINE REPOSITORY:



ACTIVITY DIAGRAM DESCRIPTION:

The activity diagram describes the flow of control in a system. So, it consists of activities and links. The flow can be sequential, concurrent, or branched. Activities are nothing but the functions of a system. Numbers of activity diagrams are prepared to capture the entire flow in a system. Activity diagrams are used to visualize the flow of controls in a system. This is prepared to have an idea of how the system will work when executed. In our activity diagram, users can register, search medicine, order medicine, make a payment, track order, and review products. The user can set a reminder, online consultation to the online doctor, then close order and get the final process. The system takes charge from customers and receives payment; the system can also make online conversation then complete the order.

ACTIVITY DIAGRAM OF ONLINE MEDICINE REPOSITORY:



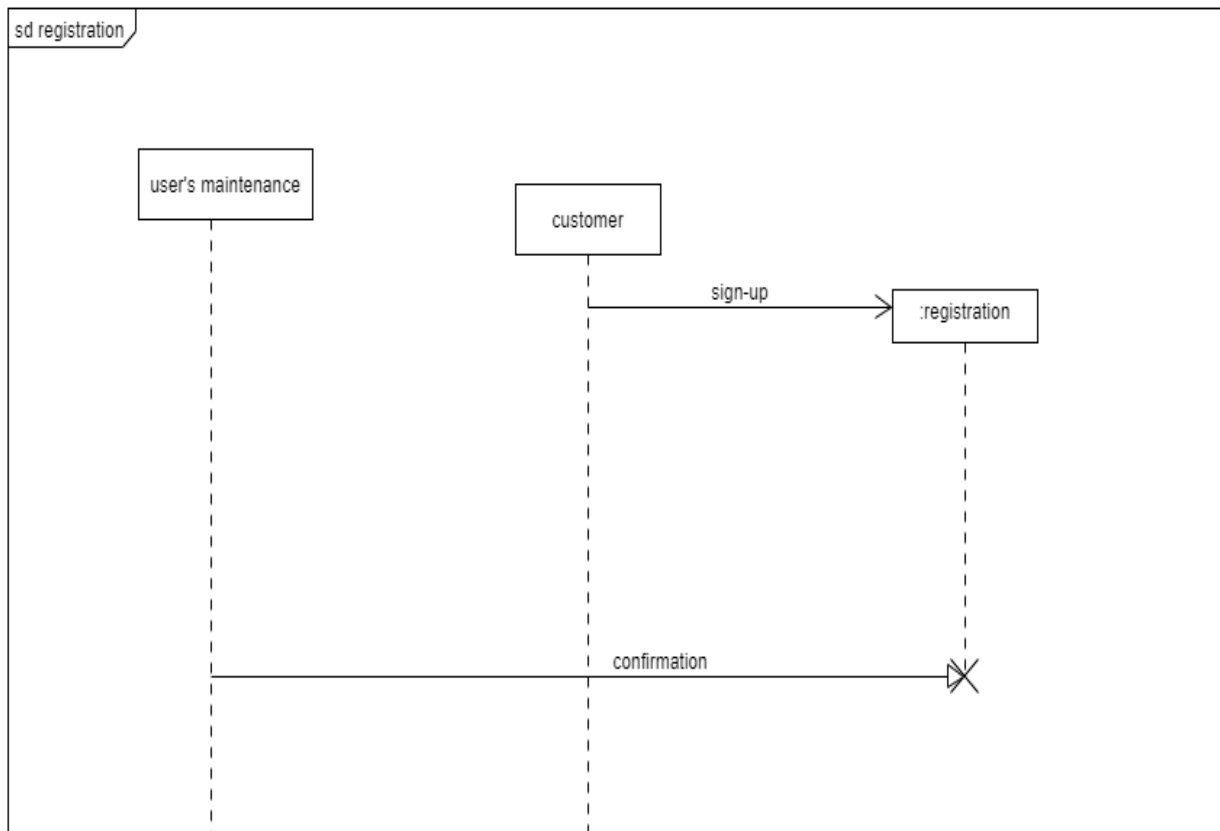
SEQUENCE DIAGRAM DESCRIPTION:

Sequence diagram is a design of some group of tasks to perform an activity. In Online Medicine Repository there is a set of activities which includes registration of the users for more activities. There is medicine order option which includes a set of tasks like searching medicines which is necessary for the customers, it also gives the clear update of the drug's inventory to users and the maintenance system and lastly paying their bills through various process. Customers can track their order online side by side the system so that they can get their drugs on time in hand. Actually the system has an activity online for reminding users to take their medicines on time which is set by users in the system so that the system can alert the user to take the specific medicine time-to-time. Users can also have online interaction to the system to report and review it, they can also discuss other topics likely as development of the betterment of system for them, also consult doctors online through the website. With these set of activities the system will run 24/7 for the care of people.

SEQUENCE DIAGRAM OF ONLINE MEDICINE REPOSITORY:

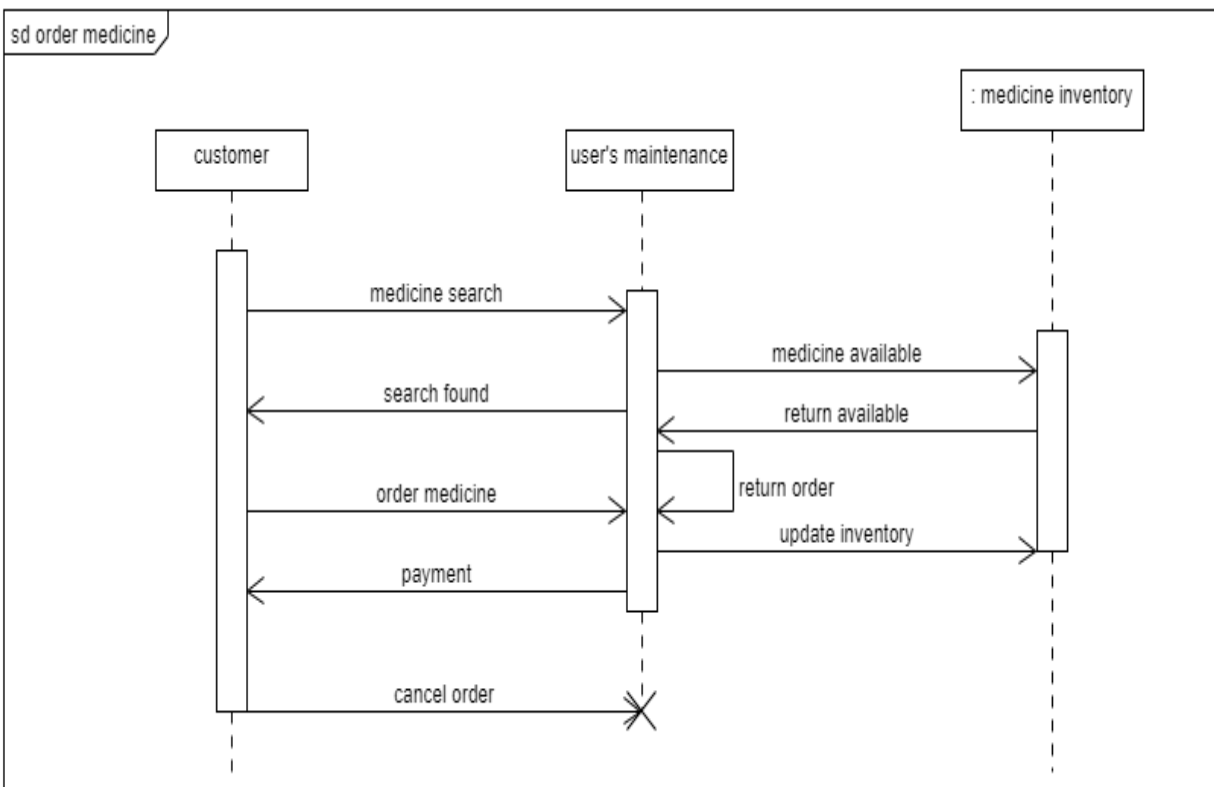
Sequence Diagram for Registration:

In this sequence we have the registration action to perform for the users of the website. They can use the system freely, also with a sign-up they can have many facilities as they become the permanent users of the system's website.



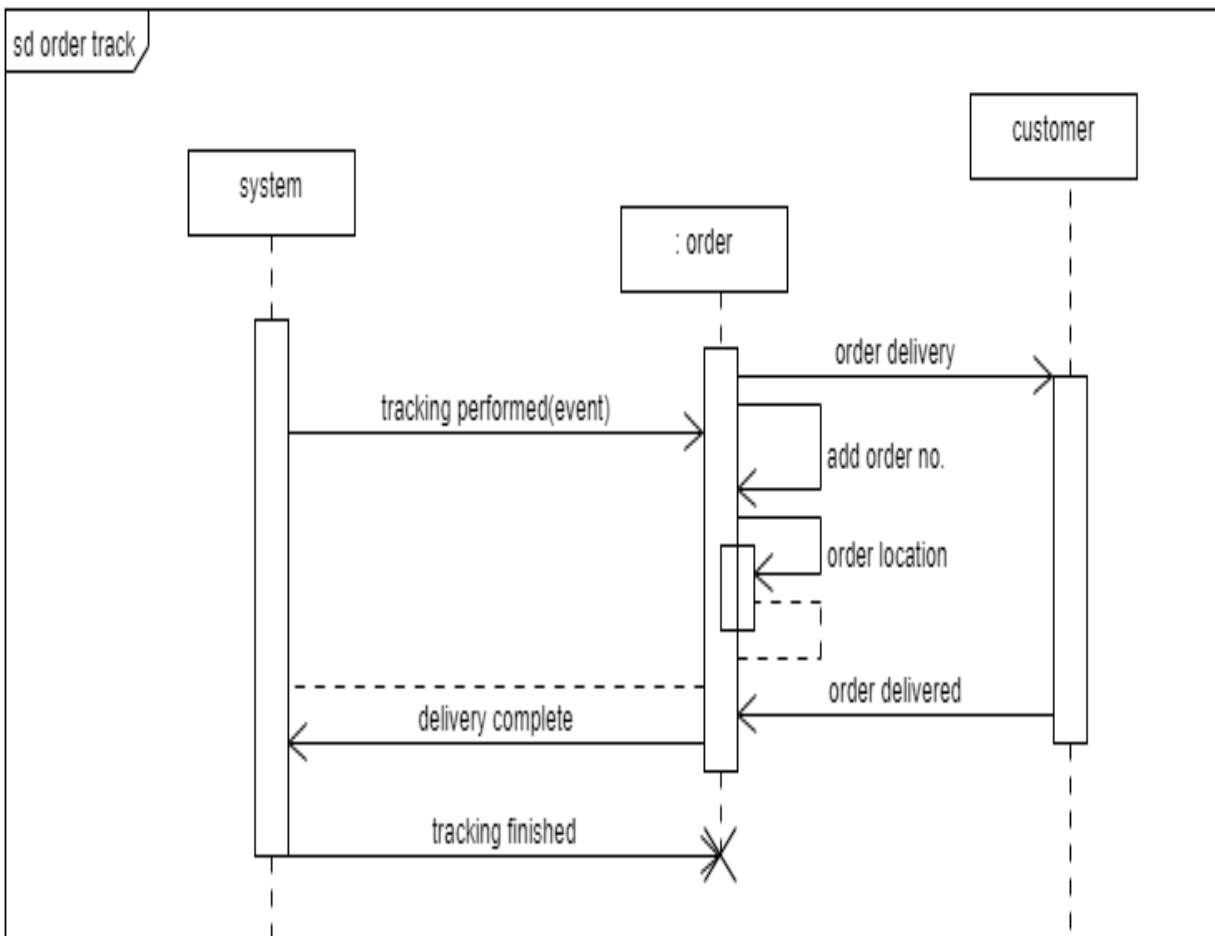
Sequence Diagram for Order Medicine:

In this action sequence user and system has involvement and a set of activities are performed to complete the action. Users search their necessary medicines and the system performs the full activity to meet up the demand of the users.



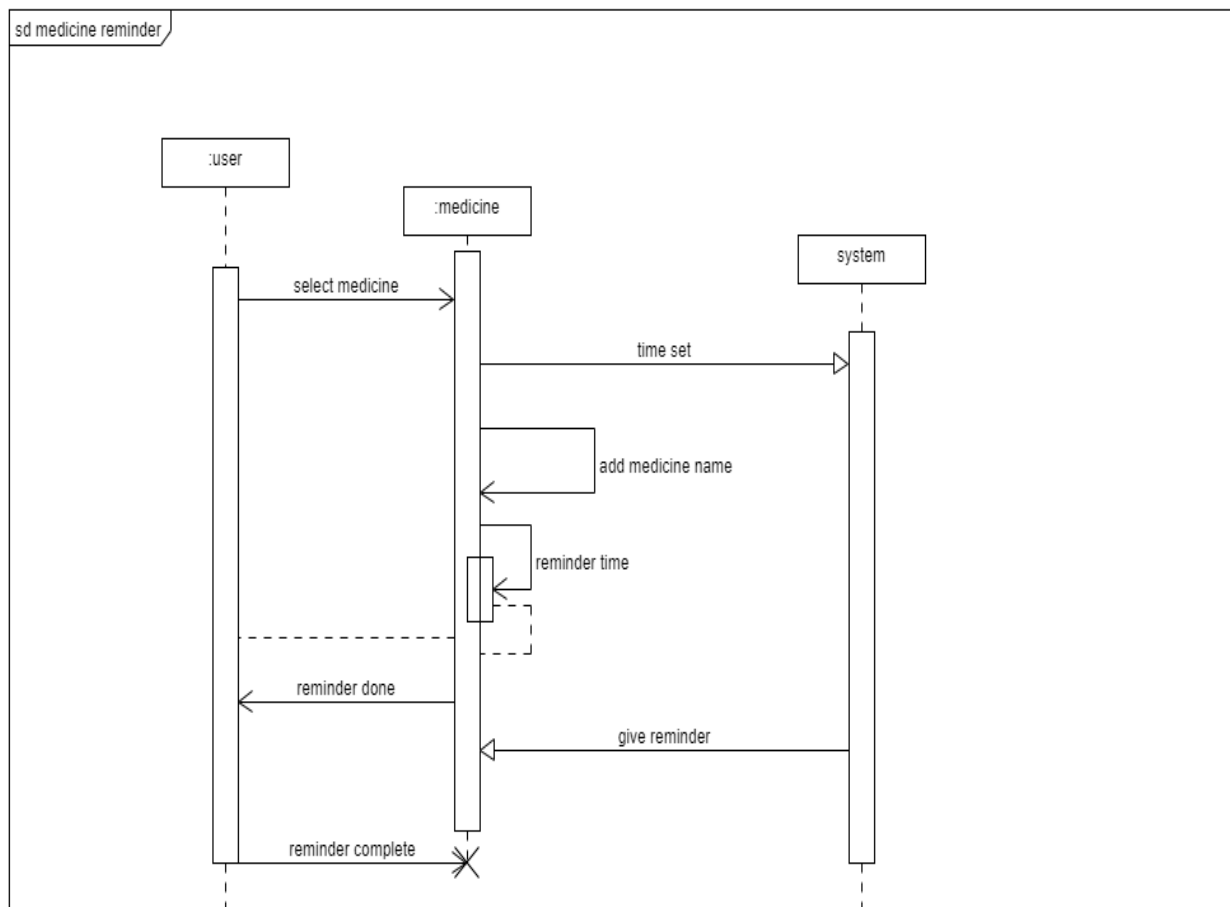
Sequence Diagram for Order Track:

This sequence mainly performs the tracking action of the order given by the customers. Both users and the system are involved constantly in this activity.



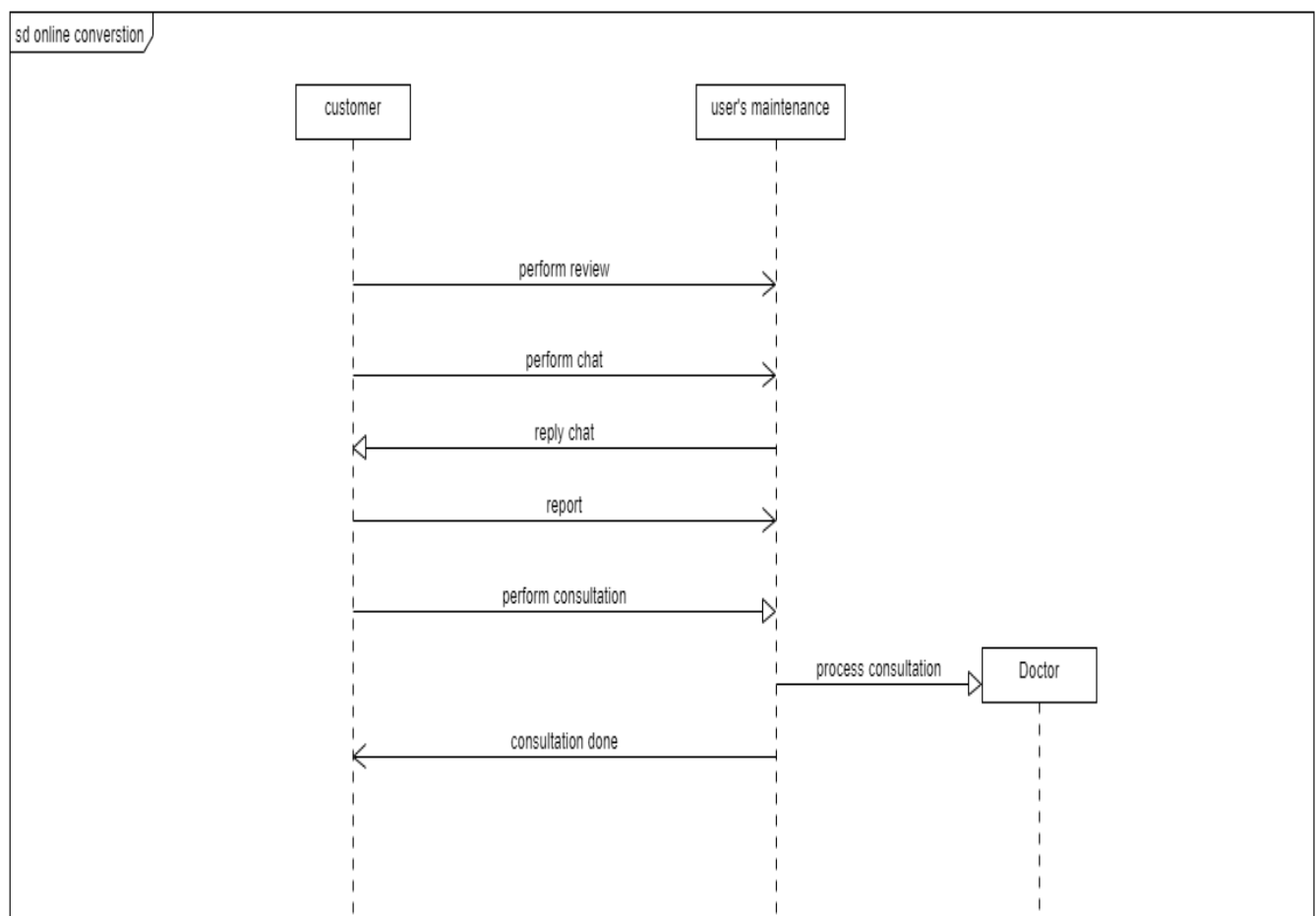
Sequence Diagram for Medicine Reminder:

In this activity user can set reminder in the system to take their medicines time-to-time. System alerts the user according to their set time. And this option is only available for the users who signed-up in the system.



Sequence Diagram for Online Conversation:

In this sequence users are open to express opinions and deliver messages to the system. They can report, review and also have live chat with the system for different opinions. And, lastly they can have virtual consultation with doctors through our system.



Project Test Planning

Project Name: Online Medicine Repository		Test Designed by: DATA ENGINEERS		
Test Case ID: OMR_1		Test Designed date: 10-09-2020		
Test Priority (Low, Medium, High): High		Test Executed by:		
Module Name: User registration		Test Execution date:		
Test Title: Verify registration with name, valid mobile number and email address				
Description: Test website registration page whether the user is successfully registered into the application or not				
Precondition (If any): User must have a valid mobile number and an email address				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website 2. Enter name 3. Enter mobile number 4. Enter email address 5. Click register	Name: DATA ENGINEERS Mobile: 01969124225 Email: snazmus112@gmail.com	User should register into the website		
Post Condition: User is valid member with necessary database and successfully registered into the web application. The account details are stored in the database.				

Project Name: Online Medicine Repository			Test Designed by: DATA ENGINEERS	
Test Case ID: OMR_2			Test Designed date: 10-09-2020	
Test Priority (Low, Medium, High): High			Test Executed by:	
Module Name: Search medicine			Test Execution date:	
Test Title: Search medicine in search bar with proper name				
Description: Test search bar in website home-page whether the user is successfully able to find the required medicine				
Precondition (If any): User must have valid name of medicine				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website 2. Click search bar 3. Enter medicine name 4. Click search	Search medicine: Paracetamol	User should search medicine with valid name		
Post Condition: N/A				

Project Name: Online Medicine Repository			Test Designed by: DATA ENGINEERS	
Test Case ID: OMR_2.1			Test Designed date: 10-09-2020	
Test Priority (Low, Medium, High): High			Test Executed by:	
Module Name: Order medicine			Test Execution date:	
Test Title: Verify medicine name and add to cart				
Description: Test website cart option whether user gets required medicine and orders when they click add to cart				
Precondition (If any): User must search a medicine to order				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website 2. Type medicine name in search bar 3. Click search 4. Click on the searched medicine 5. Click add to cart	Medicine name: Penicillin	User should click on the searched medicine to order		
Post Condition: User should add necessary information to place the order.				

Project Name: Online Medicine Repository		Test Designed by: DATA ENGINEERS		
Test Case ID: OMR_3		Test Designed date: 10-09-2020		
Test Priority (Low, Medium, High): High		Test Executed by:		
Module Name: User Management		Test Execution date:		
Test Title: Verify all data constantly modified				
Description: Test website database and change data if necessary				
Precondition (If any): There should be some change of data in user’s account and inventory				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website 2. Go to database 3. Check edit access	Previous Ratings : Update necessary data	Only system manager can update any data		
Post Condition: User will be only informed if any changes made in his/her account and will get to know about inventory update.				

Project Name: Online Medicine Repository		Test Designed by: DATA ENGINEERS		
Test Case ID: OMR_4		Test Designed date: 10-09-2020		
Test Priority (Low, Medium, High): High		Test Executed by:		
Module Name: Payment		Test Execution date:		
Test Title: Verify sending verification code				
Description: Test website Payment page				
Precondition (If any): User must choose any of the payment options first				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website 2. Place order 3. Proceed to payment 4. Choose payment options	Payment amount: Tk.200 Payment option: Bkash/Rocket, Credit card, Cash	A verification code should be sent to user or card info should be asked from user for payment		
Post Condition: User have to pay either cash-on-delivery or online after the order is placed.				

Project Name: Online Medicine Repository		Test Designed by: DATA ENGINEERS		
Test Case ID: OMR_5		Test Designed date: 10-09-2020		
Test Priority (Low, Medium, High): High		Test Executed by:		
Module Name: Order Track		Test Execution date:		
Test Title: Test how fast the interfaces work in medicine delivery				
Description: Test website Order details page				
Precondition (If any): User must place a order first to track				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website 2. Go to order details interface 3. Check order location	Location: Uttara	A static/moving location is sent to user		
Post Condition: N/A.				

Project Name: Online Medicine Repository		Test Designed by: DATA ENGINEERS		
Test Case ID: OMR_6		Test Designed date: 10-09-2020		
Test Priority (Low, Medium, High): High		Test Executed by:		
Module Name: Medicine reminder		Test Execution date:		
Test Title: Verify getting successful message after Payment				
Description: Test website payment page				
Precondition (If any): User must payment some money first				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the app 2. Go to payment interface 3. Payment money	Payment amount: 1000	User should get a digital text receipt via email and get a confirmation message		
Post Condition: N/A				

Project Name: Online Medicine Repository		Test Designed by: DATA ENGINEERS		
Test Case ID: OMR_7		Test Designed date: 10-09-2020		
Test Priority (Low, Medium, High): High		Test Executed by:		
Module Name: Online consultation		Test Execution date:		
Test Title: Take appointment from doctor				
Description: Test website online consultation option from homepage so that the user can get connected with the doctor.				
Precondition (If any): User must take an appointment.				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1.Go to website 2.Chat with customer care 3.Take appointment 4. Do audio/video call consultation	Audio/video call			
Post Condition: User should take an online prescription soft copy if necessary.				

Project Name: Online Medicine Repository		Test Designed by: DATA ENGINEERS		
Test Case ID: OMR_7.1		Test Designed date: 11-09-2020		
Test Priority (Low, Medium, High): High		Test Executed by:		
Module Name: Online conversation		Test Execution date:		
Test Title: Perform chat with the doctor or if required do audio or video call				
Description: Test the chat box and call option.				
Precondition (If any): User must start conversation by sending texts.				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1.Go to website 2. Click Chat online option 3. Start chat with messages 4. Do audio/video call if necessary	Chat, audio/video call	User gets reply back of their texts and gets through online call if necessary		
Post Condition: N/A				

Project Name: Online Medicine Repository			Test Designed by: DATA ENGINEERS	
Test Case ID: OMR_8			Test Designed date: 11-09-2020	
Test Priority (Low, Medium, High): High			Test Executed by:	
Module Name: Report			Test Execution date:	
Test Title: Report system if necessary				
Description: Test report interface whether user can give the report successfully				
Precondition (If any): User must use the website				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to website 2. Take service 3. Give a report	Wrong medicine suggestion, late delivery	System thanks user for opinion		
Post Condition: N/A				

Project Name: Online Medicine Repository		Test Designed by: DATA ENGINEERS		
Test Case ID: OMR_8.1		Test Designed date:	11-09-2020	
Test Priority (Low, Medium, High): High		Test Executed by:		
Module Name: Review		Test Execution date:		
Test Title: Give star rating or write review				
Description: Test if the user can give the star rating or write a review on the website review option				
Precondition (If any): User must purchase medicine or consult with doctor				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to website 2. Go to order section 3. Write review or give star rating	Review our website: Give rate ***** Write comment	System interface thanks user for support		
Post Condition: N/A				

Project Scheduling

1.1 Process Model

The best and suitable method for the development of our software is the **Agile** method. Agile is a category and it is the ability to create and respond to change in order to profit in a turbulent business environment. Agile works under iterative methods. Each iterative method has time and scope. Time determines the relevant time needed to complete the iterations and scope determines the amount of work needed to be done in each iteration. Each of the iterations must be completed within 30 days at most.

Now the arguments based on our analysis about why we selected Agile method is the best choice among all other methods to develop your proposed software is explained below:

Agile is a dynamic category where changes can happen anytime regarding the environment of the project and requirements. By choosing this method the chance of delaying the project is reduced as it works under iteration method and each of the iteration does not exceed 30 days. There are different types of agile methods. We have basically focused on the Scrum method. It is performed under 3 phases. 1. Pre-Game 2. Development (Game-phase) 3. Post-Game

Different types meetings are being held in scrum method. They are:

Sprint planning Meeting, Daily Scrum Meeting, Sprint Review Meeting.

1.2 Project Roll Identification and Responsibilities

As described above, the method we will be using during the software development phase will be an agile method named SCRUM. In SCRUM method, each of the project member will be performing different iteration task with in a specific time period and scope. Where each of the project member of the iterations will get 3-4 weeks (30 days) to perform an iteration.

- **Scrum Master** is responsible for ensuring that the project is carried through according to the practices, values, and rules of Scrum and that it progresses as planned.
- **Product Owner** is officially responsible for the project, managing, controlling, and making visible the Product Backlog list. He is selected by the Scrum Master, the customer, and the management, he makes the final decisions of the tasks related to product Backlog.
- **Scrum Team** is the project team that has the authority to decide on the necessary actions and to organize itself in order to achieve the goals of each Sprint.
- **Management** oversees final decision making, along with the agreements, standards, and conventions to be followed in the project.

1.3 Project Estimation :

The Constructive Cost Model (COCOMO) is an algorithmic software cost estimation model. The software project type that we will be using is organic. It is a software project that must be developed within a strongly coupled to hardware environment.

- **Effort = PM (person-months needed for project (labor working hours))**

$$= \text{Coefficient}_{\langle \text{Effort Factor} \rangle} * (\text{SLOC}/1000)^P$$

$$= 2.4 * (10000/1000)^{1.05} \text{ [here SLOC = 10000, organic co- efficient effort factor is 2.4 and P(project complexity which is 1.05)]}$$

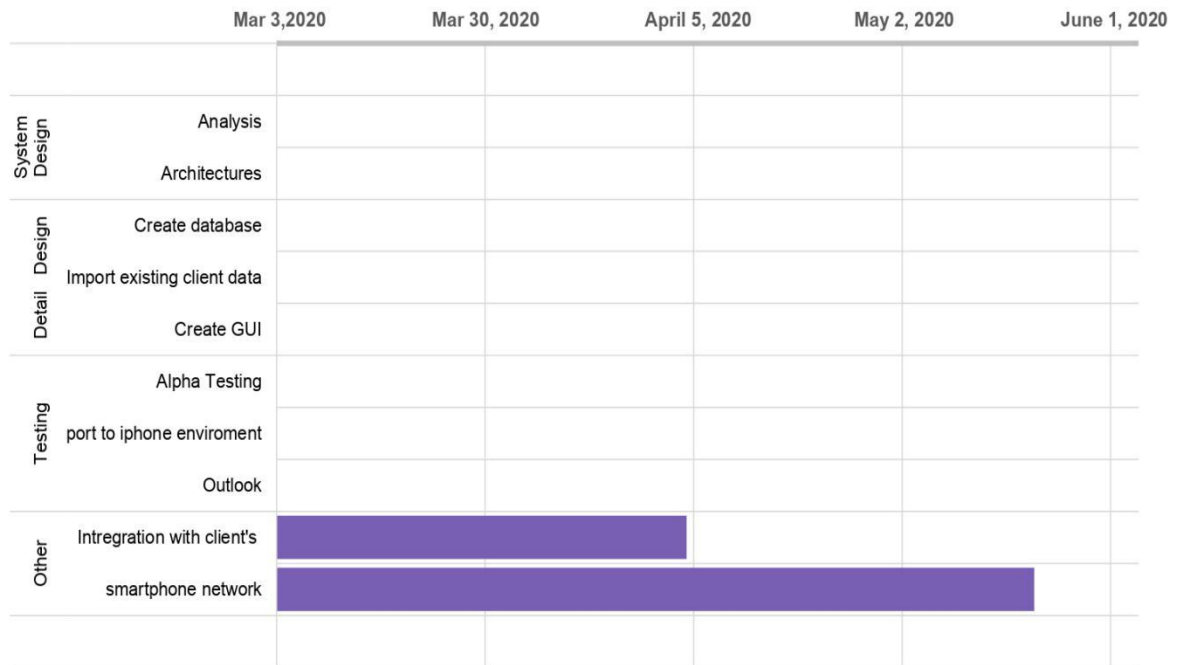
$$= 26.928 \text{ labor working hours}$$
- **Development Time, DM= 2.50*(PM)^T**

$$= 2.50 * (26.928)^{0.38} \quad \text{[here T for organic is 0.38]} = 8.73 \text{ months}$$
- **Required Number of People, ST (average staffing necessary)**

$$= \text{PM}/\text{DM}$$

$$= 26.928/8.73 = 3.08$$

PROJECT TIMELINE



Project Start 7-9-20 *columns used to create the chart*

CATEGORY	TASK	START	END	COLOR	Start	Blue	Red	Green	Brown	Orange	Purple
System Design	Analysis	7-7-20	7-13-20	Blue	7-7-20	100	0	0	0	0	0
	Architectures	7/14/20	7/28/20	Blue	7/13/20	100	0	0	0	0	0
Detail Design	Create database	7/29/20	5-8-20	Green	7/28/20	0	0	0	0	0	0
	Import existing client data	4-10-20	11-8-20	Green	4-8-20	0	0	215	0	0	0
	Create GUI	11-12-20	8/18/20	Green	11-8-20	0	0	215	0	0	0
Testing	Alpha Testing	10-19-20	9/23/20	Brown	10-9-20	0	0	0	1283	0	0
	port to iphone enviroment	8-14-20		Brown	8-9-20	0	0	0	2252	0	0

	Outlook	8/21/20	4-20-20	Brown	8/18/20	0	0	0	####	0	0
Other	Intregation with client's	1-4-20	2-28-20	Purple	1-1-17	0	0	0	0	0	59
	smartphone network	1-6-20	4-19-20	Purple	1-1-17	0	0	0	0	0	109
Insert new rows above this one											

MILESTONE LABEL	DATE	Margin Bottom	Margin Top
Milestone 1	7-10-20	50%	95%
Milestone 2	7/30/20	25%	95%
Milestone 3	8/25/20	10%	95%
Milestone 4	9/27/20	30%	95%

Risk Management Strategy

Risk analysis and management are intended to help a software team understand and manage uncertainty during the development process. Risk management means risk containment and mitigation. First, we've got to identify and plan. Then be ready to act when a risk arises, drawing upon the experience and knowledge of the entire team to minimize the impact to the project.

Risk management includes:

Identify risks and their triggers

Classify and prioritize all risks

Craft a plan that links each risk to a mitigation

Monitor for risk triggers during the project

Implement the mitigating action if any risk materializes

Communicate risk status throughout project

There square measure 3 main classes of risks that may have an effect on a computer code project:

Project Risks:

Project risks concern varies sorts of monetary fund, schedule, personnel, resource, and customer-related issues. a vital project risk is schedule slippage. Since computer code is intangible, it's terribly tough to observe and management a computer code project. it's terribly tough to manage one thing that can not be seen. For any producing project, like producing cars, the project manager will see the merchandise taking form.

Technical Risks:

Technical risks concern potential style, implementation, interfacing, testing, and maintenance issues. Technical risks conjointly embody ambiguous specifications, incomplete specification, dynamic specification, technical uncertainty, and technical degeneration. Most technical risks occur thanks to the event team's lean information concerning the project.

Business Risks:

This type of risk embodies the risks of building a superb product that nobody needs, losing monetary fund or personal commitments, etc.

For most software development projects, we can define five main risk impact areas:

New, unproven technologies

User and functional requirements

Application and system architecture

Performance

Organizational

Most software engineering projects are inherently risky because of the variety potential problems that might arise. Experience from other software engineering projects can help managers classify risk. The importance here is not the elegance or range of classification, but rather to precisely identify and describe all of the real threats to project success. A simple but effective classification scheme is to arrange risks according to the areas of impact. Use of checklists – usually based on the experience of past projects. Some risk are generic risk, they are relevant to all software projects. A standard checklist can be used to identify the risks changing technology. Brainstorming – getting knowledgeable stakeholders together to pool concerns Causal mapping – identifying possible chains of cause and effect. For example, illness of a team member is a risk that might put the project completion date at risk and result in the late delivery of the product.

Risks can be deal with by:

Risk prevention – a project can, for example, be protected from the risk of overrunning the schedule by increasing duration estimates or reducing functionality. Risk reduction – some risk, while they cannot be prevented, can have their likelihoods reduced by prior planning. The risk of late changes to a requirements specification can, for example, be reduced by prototyping but will not eliminate the risk of late changes. Risk transfer – the impact of some risk can be transferred away from the project, by, for example, contracting out or taking out insurance.

Discussion & Contribution

This course will make huge impact in our advance courses. This will help us to do our software related course like software testing and software management. In this course we learn software design, software development method, software testing, risk management and software milestone. Also this course will help us to develop software in professional life. We also learn how to develop and design a software in a team. We divide our project equally with our team members and finally we get a good output. All of our team members are so friendly. They contribute their level best to complete our project. Some times we face so many problem in this project. But using of internet and experts help makes easier to our software engineering journey.

