

Project Report

TELECOM MANAGEMENT SYSTEM

A UML PROJECT REPORT

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Under the guidance of

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In partial fulfillment for the award of the degree of

BACHELOR OF TECHNOLOGY

In

COMPUTER SCIENCE ENGINEERING

With specialization in Artificial Intelligence & Machine

Learning

Of

FACULTY OF ENGINEERING AND TECHNOLOGY



S.R.M. Nagar, Kattankulathur, Kancheepuram District

SRM UNIVERSITY

(Under Section 3 of UGC Act, 1956)

BONAFIDE CERTIFICATE

Certified that this project report titled “**TELECOM MANAGEMENT SYSTEM**” is the bonafide work of “**SARTHAK DWIVEDI [RA2111026010122] & SHIVAM [RA2111026010126]**” who carried out the UML project work under our supervision. Certified further, that to the best of our knowledge the work reported herein does not form any other project report or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

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Signature of Internal Examiner
Examiner

Signature of External

ABSTRACT

The project describes telecommunication management field, as the new point of view. It is described in detail, including the complete approach to the telecommunication management, focusing to the alarm management. The aim is to establish both strong and quality management platform, capable to implement the fuzzy-expert system, regardless the computer operation system, network protocol, kind of database, software program product, hardware structure, and type of network element. Satisfying the counted requests is followed by the quality exploitation of the telecommunication system and the joined services. This is the way how step-by-step to introduce the artificial intelligence into the telecommunication management system, aiming for both, a customer satisfaction and an operator benefit.

ACKNOWLEDGEMENT

We would like to express our deepest gratitude to our guide, Professor S. Amudha for her valuable guidance, consistent encouragement, personal caring, timely help and providing me and my team with an excellent atmosphere for doing uml project. All through the work, in spite of her busy schedule, she has extended cheerful and cordial support to us for completing this uml project work.

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PROBLEM DESCRIPTION

The project describes telecommunication management field, as the new point of view. It is described in detail, including the complete approach to the telecommunication management, focusing to the alarm management. The aim is to establish both strong and quality management platform, capable to implement the fuzzy-expert system, regardless the computer operation system, network protocol, kind of database, software program product, hardware structure, and type of network element. Satisfying the counted requests is followed by the quality exploitation of the telecommunication system and the joined services. This is the way how step-by-step to introduce the artificial intelligence into the telecommunication management system, aiming for both, a customer satisfaction and an operator benefit.

OBJECTIVE

The aim is to establish both strong and quality management platform, capable to implement the fuzzy-expert system, regardless the computer operation system, network protocol, kind of database, software program product, hardware structure, and type of network element. Satisfying the counted requests is followed by the quality exploitation of the telecommunication system and the joined services. This is the way how step-by-step to introduce the artificial intelligence into the telecommunication management system, aiming for both, a customer satisfaction and an operator benefit.

EXISTING SYSTEM: -

Lack of telecom infrastructure in semi-rural and rural areas could be one of the major hindrances in tapping the huge rural potential market going forward. The service providers have to incur a huge initial fixed cost to enter rural service areas. Further many rural areas in India lack basic infrastructure such as road and power, developing telecom infrastructure in these areas involve grater logistical risks and also extend the time taken to roll out telecom services. The lack of trained personnel in the rural area to operate and maintain the cellular infrastructure, especially passive infrastructure such as towers is also seen as a hurdle for extending telecom services to the under penetrated rural areas.

PROPOSED IDEA: -

SPECIFICATIONS

Software Requirements: -

- Windows XP
- Apache Tomcat Web Server
- Oracle

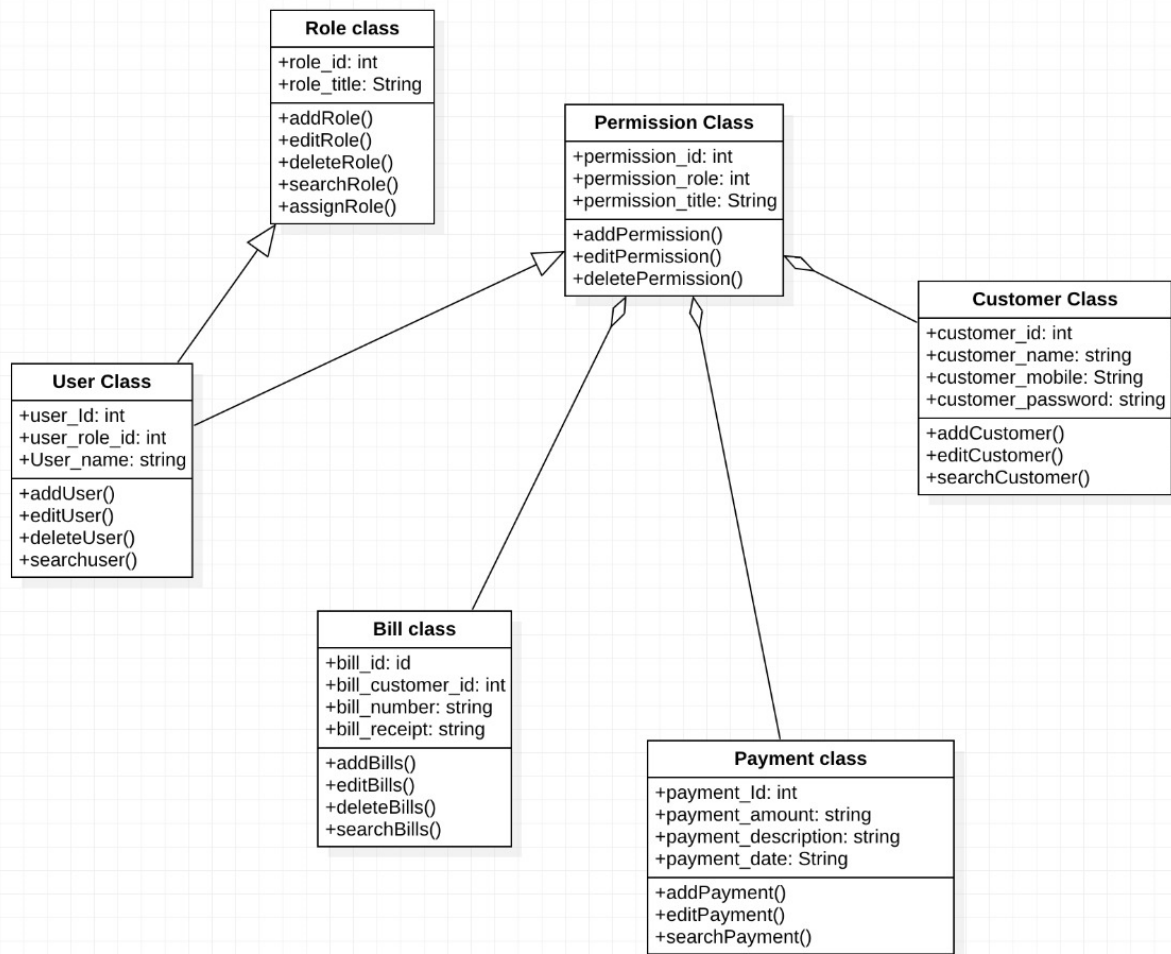
Technology Used: -

- Java
- J2EE

Hardware Requirements: -

- Hard Disk – 2 GB
- RAM – 1 GB
- Processor – Dual Core or Above
- Mouse
- Keyboard
- Monitor
- Printer

CLASS DIAGRAM



The UML Class diagram is a graphical notation used to construct and visualize object-oriented systems. A class diagram describes the structure of a system such as Classes and their attributes, operations (or methods) and the relationships among objects. A class diagram is used to show the existence of classes and their relationships in the logical view of a system.

Basic components: The standard class diagram is composed of three sections:
Upper section: Contains the name of the class. This section is always required, to know whether it represents the classifier or an object.

Middle section: Contains the attributes of the class. Use this section to describe the qualities of the class. This is only required when describing a specific instance of a class.

Bottom section: Includes class operations (methods). Displayed in list format, each operation takes up its own line. The operations describe how a class interacts with data.

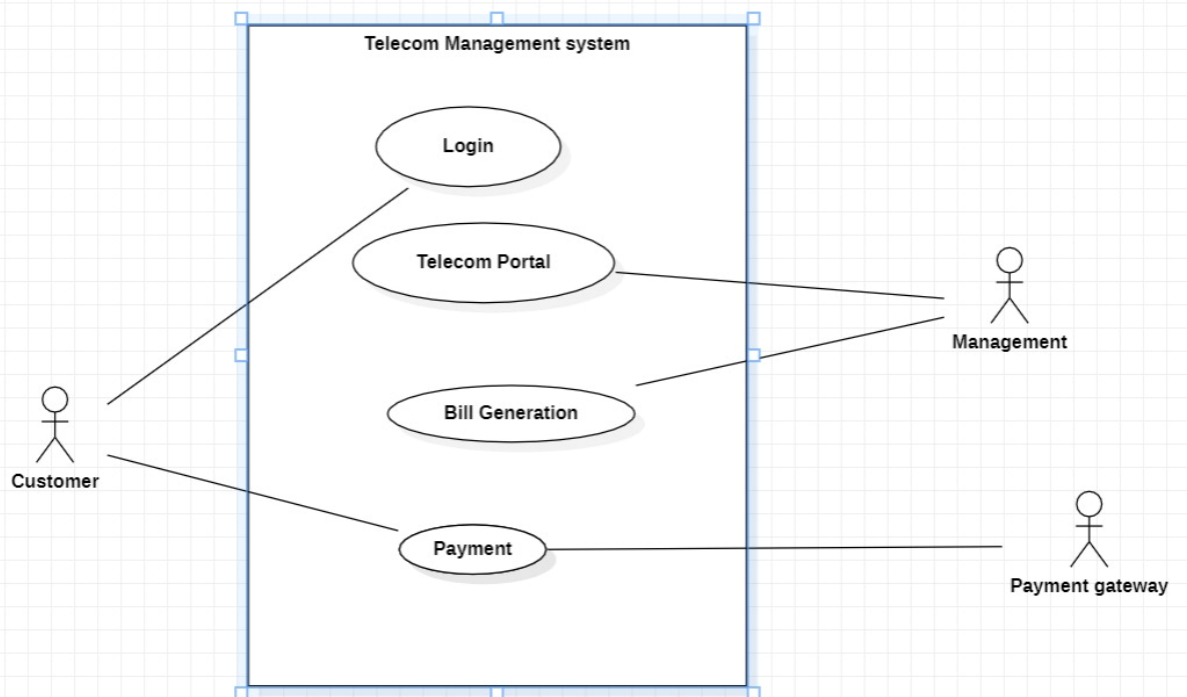
Rules: Class name must be unique to its enclosing namespace. The class name begins in uppercase and the space between multiple words is omitted. The first letter of the attribute and operation names is lowercase with subsequent words starting in uppercase and spaces are omitted. Since the class is the namespace for its attributes and operations an attribute name must be unambiguous in the context of the class. Attribute specification format: visibility attributeName: Type [multiplicity] = DefaultValue {property string}. Operation specification format: visibility operationName (parameterName: Type): ReturnType {property string}

Classes - it's attributes & entities: -

- Class User: Attributes – user_id, usr_role_id, user_name
Entities – addUser, editUser, deleteUser, searchUser
- Class Role: Attributes – role_id, role_title
Entities – addRole, editRole, deleteRole, searchRole, assignRole
- Class Permission: Attributes – permission_id, permission_role, permission_title
Entities – addPermission, editPermission, deletePermission

- Class Bill: Attributes – bill_id, bill_customer, bill_number, bill_receipt
Entities – addBills, editBills, deleteBills, searchBills
- Class Payment: Attributes – payment_id, payment_amount,
payment_description, payment_date
Entities – addpayment, editpayment, searchpayment
- Class Customer: Attributes – customer_id, customer_name,
customer_moblie, customer_password
Entities – addCustomer, editCustomer, searchCustomer

USE CASE DIAGRAM



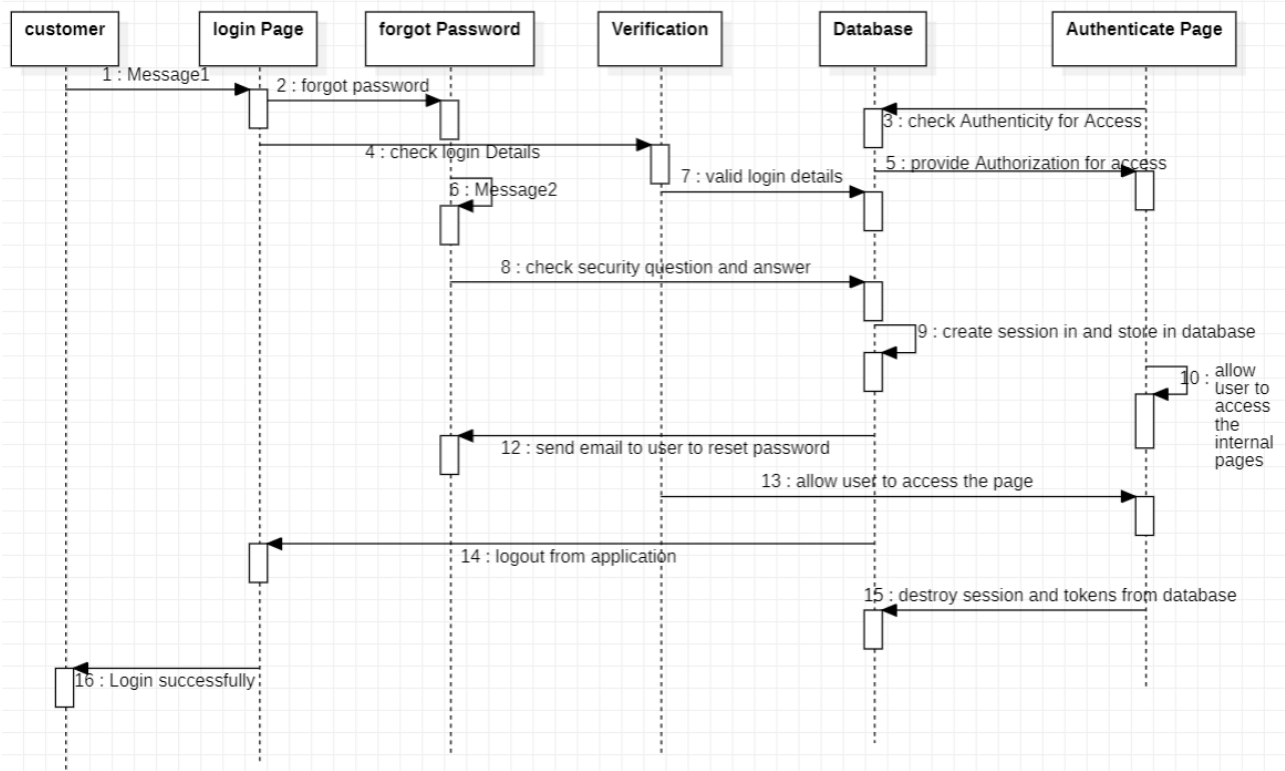
Use case diagrams give us that capability. Use case diagrams are used to depict the context of the system to be built and the functionality provided by that system. They depict who (or what) interacts with the system. They show what the outside world wants the system to do.

Notation: Actors are entities that interface with the system. They can be people or other systems. Actors, which are external to the system they are using, are depicted as stylized stick figures.

Actor: -

- Customer
- Management
- Payment gateway

SEQUENTIAL DIAGRAM



A sequence diagram simply depicts interaction between objects in a sequential order i.e., the order in which these interactions take place.

Actor: -

An actor in a UML diagram represents a type of role where it interacts with the system and its objects.

- Customer
- Login Page
- Forget Password
- Verification
- Database
- Authenticate Page

Synchronous message: -

A synchronous message waits for a reply before the interaction can move forward. The sender waits until the receiver has completed the processing of the message. The caller continues only when it knows that the receiver has processed the previous message i.e., it receives a reply message. A large number of calls in object-oriented programming are synchronous. We use a solid arrow head to represent a synchronous message

Asynchronous Message: -

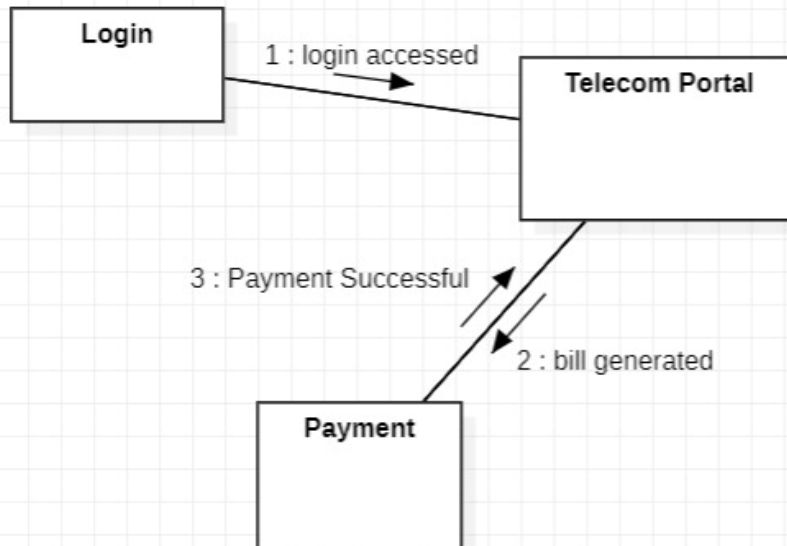
An asynchronous message does not wait for a reply from the receiver. The interaction moves forward irrespective of the receiver processing the previous message or not. We use a lined arrow head to represent an asynchronous message

Self-Message: -

A message an object sends to itself, usually shown as a U-shaped arrow pointing back to itself.

COLLABORATION DIAGRAM

sd CommunicationDiagram1



Collaboration Diagram depicts the relationships and interactions among software objects. They are used to understand the object architecture within a system rather than the flow of a message as in a sequence diagram. They are also known as “Communication Diagrams.” In the collaboration diagram, the method call sequence is indicated by some numbering technique. The number indicates how the methods are called one after another.

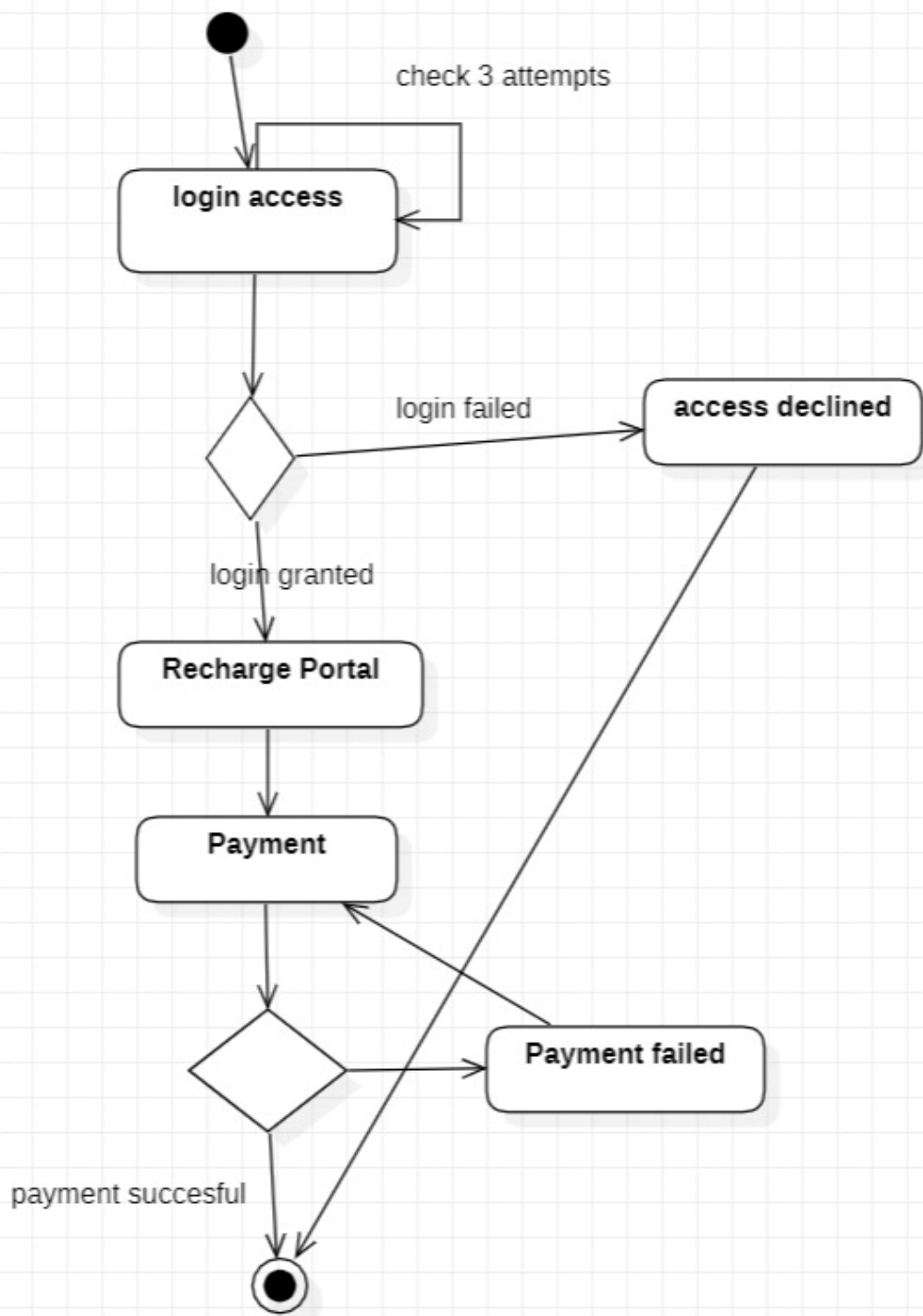
It is also called as a communication diagram. It emphasizes the structural aspects of an interaction diagram - how lifeline connects.

Its syntax is similar to that of sequence diagram except that lifeline don't have tails. Messages passed over sequencing is indicated by numbering each message hierarchically. Compared to the sequence diagram communication diagram is semantically weak. Object diagrams are special case of communication diagram. It allows you to focus on the elements rather than focusing on the message flow as described in the sequence diagram. Sequence diagrams can be easily converted into a collaboration diagram as collaboration diagrams are not very expressive.

Object: -

- Login
- Telecom Portal
- Payment

STATE CHANGE DIAGRAM



A state diagram is used to represent the condition of the system or part of the system at finite instances of time. It's a behavioural diagram and it represents the behaviour using finite state transitions. State diagrams are also referred to as State machines and state-chart Diagrams.

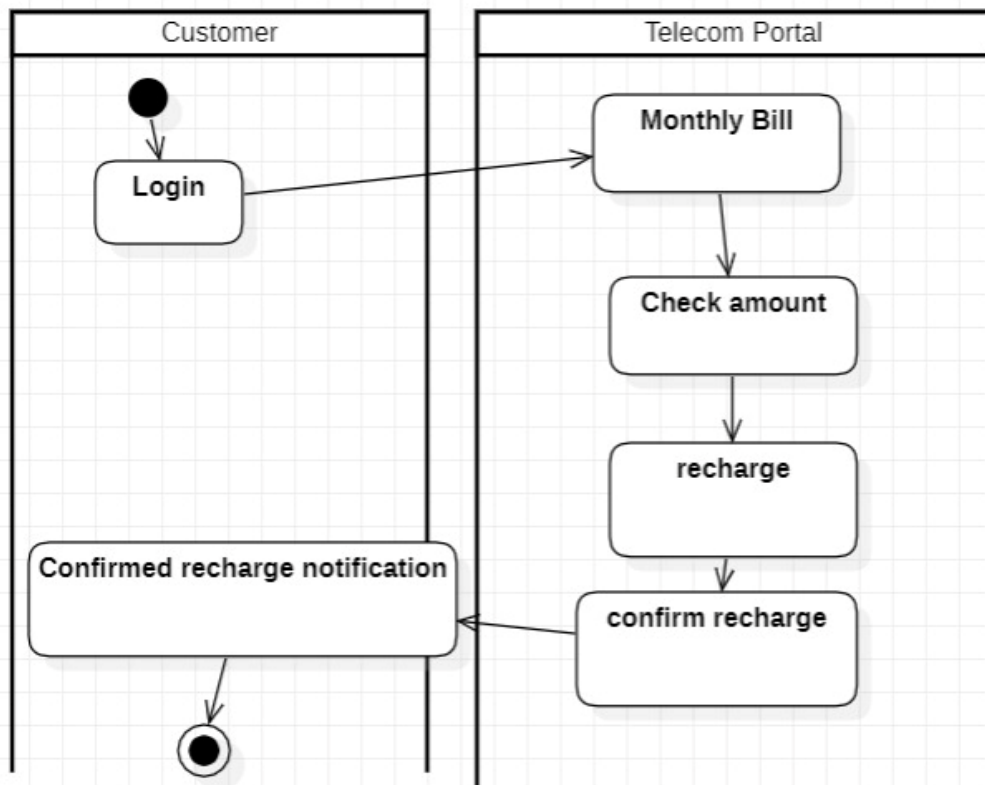
So, the main usages can be described as:

- To model object states of a system.
- To model reactive system. Reactive system consists of reactive objects.
- To identify events responsible for state changes.
- Forward and reverse engineering.
- Before drawing a state chart diagram, we must have clarified the following points: Identify important objects to be analysed. Identify the states. Identify the events.

Classes: -

- Login access
- Access declined
- Recharge Portal
- Payment
- Payment failed

ACTIVITY DIAGRAM



Activity diagram is UML behaviour diagram which emphasis on the sequence and conditions of the flow: -

- It shows a sequence of actions or flow of control in a system.
- It is like to a flowchart or a flow diagram.
- It is frequently used in business process modelling. They can also describe the steps in a use case diagram.
- The modelled Activities are either sequential or concurrent.

Benefits: -

- It illustrates the logic of an algorithm.
- It describes the functions performed in use cases.
- Illustrate a business process or workflow between users and the system.
- It Simplifies and improves any process by descriptive complex use cases.
- Model software architecture elements, such as method, function, and operation.

Activity: -

- Login
- Monthly bill
- Check amount
- Recharge
- Confirm recharge
- Confirmed recharge notification

Swinline and Partition: -

- Customer
- Telecom Portal

CONCLUSION

In conclusion, wireless communications globally are something that people can expect as technology advances. Wireless communications have a lot of benefits and can make the world a lot more efficient. It does have concerns though as with every other new advancement that is made in today's world. The issues with security regarding access to a person's personal information or the negative impact that it may seem to have on society are a few things that are holding back the progress that wireless technology could be making. With more research and experiments conducted, the problems associated with wireless communications can be reduced and make it a more significant part of the world. Wireless technology will be very important in the near future where the need for wires connecting individual devices seems to be coming to an end.

REFERENCE

- [Google](#)
- [JavaTpoint](#)
- [GeeksforGeeks](#)
- [Programmiz](#)
- [Slideshows](#)

THANK
YOU