Project Report

CASINO GAMING SYSTEM

A UML PROJECT REPORT

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Under the guidance of
Professor Abirami
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 "**CASINO GAMING SYSTEM**" is the bonafide work of "**SHASHWAT PRASAD [RA2111026010143] & ROSHAN PRIYADARSHI [RA2111026010139]"** 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.

SIGNATURE
Professor Abirami
GUIDE

SIGNATURE

HEAD OF THE DEPARTMENT

Signature of Internal Examiner

Signature of External Examiner

ABSTRACT

A casino is a place where a variety of games of chance are played and numerous types of gambling activities are carried out. Casino includes various gambling forms that range from online gaming casino, card room gaming, lotteries, race & sports wagering, and gaming such as bingo, raffles, and others. Casinos are built near to or are combined with hotels, restaurants, retail shopping, and cruise ships as a purpose of luxurious entertainment for people with high income.

The key factors that drive the growth of the market is changing lifestyle and rise in the demand for leisure time due to a hectic & busy lifestyle. Increase in tourism is another factor that propels the market growth. However, cyber-attacks during online gaming are a major restraint for the market growth. Irrespective of these challenges, the ease of gambling regulations globally has created numerous opportunities for gamblers to participate in casino gaming through online platforms.

The market segmentation is based on casino type, end user, and on game type. By casino type, it is divided into commercial, tribal, limited stakes, and i-gaming. By end user, it is classified into gambling enthusiasts, social exuberant, dabblers, lottery loyalists, and unengaged audience. By game type it is classified into poker, blackjack, slot machines, roulette, craps, and others. Geographically, it has been analyzed across North America, Europe, Asia-Pacific, and LAMEA.

Prominent players profiled in the report include Caesars Entertainment, Galaxy Entertainment, Las Vegas Sands, MGM Resorts, SJM Holdings, 888 Holdings, Betfair Online Casino Games, Boyd Gaming, City of Dreams Manila, and Delaware Park

ACKNOWLEDGEMENT

We would like to express our deepest gratitude to our guide, Professor Abirami for her valuable guidance, consistent encouragement, personal caring, timely help and providing me and my team with an excellent atmosphere for doing mini 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

With the emergence of the digital in these modern times, gaming system are used more often than ever. With the frequent use of these system comes the issue of frequently visiting casino or other gambling places which take quite some time.

To rectify this issue, we have made a uml diagrams of Casino Gaming System. This application allows you to perform all basic games online with a touch on your phone. It makes your daily life easier by providing a safe and secure portal. This makes your everyday struggle a bit easier and a lot less time consuming providing you with ample time for your other activities.

SOFTWARE REQUIREMENT SPECIFICATION

1. Introduction

1.1. Purpose: -

The purpose of this application is to synchronize the gaming system with your device and display various games like Sci bo, Teen Patti, Roulette and Slot.

1.2. Document Conventions: -

N/A

1.3. Indented Audience and Reading Suggestion: -

This document should be read by developers, users, project managers and testers. The developers should read every section to ensure that there is an understanding of the project. The main sections for the customers to review are section Project Scope, Assumptions and section Features.

1.4. Project Scope: -

The main aim of the project is to help the customer to manage their funds properly and make it easy for them to keep a check on their expenditure at frequent intervals. This helps the user to plan their expenses and keep track of it.

1.5. References: -

None

2. Overall Description

2.1. Product Perspective: -

The Casino Gaming System provides a simple mechanism for the user to synchronize their account and manage it on the go. The application does not require the user to sign in to their account every time when they need to check; once authenticated the software securely links your account to your device.

2.2. Product Functions: -

The Application includes a range of functions that enables the customer to manage their account and to keep track on their expenditures seamlessly. Games like Sic bo, Teen Patti, Slot and Roulette. Secure Online gaming system through Two-Step Verification via an Authenticator App. Ultra-Secure Personal Wallet System to bank super-fast without worrying much about logging into your bank account for every transaction you make. Smart Transaction History Analyser. Intelligent Background Transaction Fetcher to synchronise bank statement on a regular interval.

2.3. User Classes and Characteristics: -

Any adult who possesses a gaming system and a compatible smart phone will be comprise the user audience. Business people who constantly want to monitor fund and transact frequently will be the target demographic. Anybody who is conscious about their expenditure and wants to have proper track of it will be the general user audience

2.4. Operating Environment: -

The Application will operate in the following operating environment:

- Android OS
- IOS

2.5. Design and Implementation Constrains: -

C++ programming language and the Android APL. So, the Android variant is compatible with android devices running Android 4.1 or above with a minimum RAM of 1 GB. The Application's iOS variant is created using Objective C++ programming language and the iOS APL. So, the iOS variant is compatible with iOS devices running iOS 7 or above. For Language support expect, from the basic English language pack the user can download and enable the languish of their choice from the list of available languages within the application. For connection stream TCP/IP is used as it is the common gateway for internet applications.

2.6. User Documentation: -

There will be a basic tutorial document along with an in-app tutorial to aid users.

2.7. Assumptions and Dependencies: -

- The bank will provide full control for the app over the users' account.
- The app remains stable and compatible with Android 4.0 and greater.
- The app will be completely functional.

3. External Interface Requirement

3.1. User Interface: -

The look and feel must be simple and elegant for users to like it. The app will follow the colour code of the casino in which the user holds the account. The font size is appropriate and the clumsy symbols are synchronized.

3.2. Hardware Interface: -

The app primarily runs on smart phones. So, the interface through which the user interacts should be touch enabled for the communication purpose, the program needs these protocols to be installed: TCP for the client to connect to the server in online mode. Since the bank client runs behind a security system, the appropriate parts must be port forwarded or port triggered for customer to connect.

3.3. Software Interface: -

The software interface will be Android or iOS.

3.4. Communication Interface: -

Setting up the server into server mode requires that there will be open ports for accepting connections from the customer. The connection between the customer and the server uses Connection-oriented communication, via TCP/IP-Transfer Control Protocol/Internet Protocol, implements reliable delivery of messages Connection oriented communication makes programming easier because the protocol includes mechanisms for detecting and handling error and an acknowledgement mechanism between customer and server.

4. System Features

4.1. Customers: -

Basically, customer is the player who wants to play this game in their system. For customer they required to enter the name, phone number, age, email and address. In customer, there are two types: one the new user and the one is existing user.

4.2. Cashier: -

Cashier is the part of the game where all the money are transition takes places. Basically, token is exchange with money. Here user have to enter the amount and token in wanted to used in the game. It can perform various function as withdraw money, add money and token selection.

4.3. Game Selection: -

Game selection is the most important part of the complete casino gaming system as it is basically connected to all parts of the system. In this you just have to selection the name of the game that's all. For this you have to selection games like sic bo, teen patti, slot and roulette.

4.4. Sic bo: -

Sic bo is the type of game in which you have to put token on specific number and if that resulting number and your number are same then you won the game and amount of token you have putted on that number is just doubled, but if you lose the game then the amount of token you put on the number is lost. Basically, this part of the game showcase instruction, token selection, number selection, random output and betting amount.

4.5. Teen Patti: -

Teen patti is the type of game in which you received teen random cards, then computer will generate teen random cards. Whom so cards value is larger he/she won the game. Basically, all the cards have it particular values. In this we showcase card distribution, betting amount, 3 random cards and value of cards.

4.6. Slot: -

Slot is the type of game in which you have to click the switch, then three random number comes, if that three numbers are 0, 5 and 9, you will win the game according to the game. In this we showcase triple number, triple 0, triple 5 and triple 9.

4.7. Roulette: -

Roulette is the type of game in which you have to selection number from 1 to 100 then computer will generate random number, if the selected number and computer are same you won the game else you lose the game. In this your token is basically double. In this we showcase random number and betting amount.

5. Other Non-Functional Requirements

5.1. Performance Requirements: -

Checking the fact that the system must perform as every user expects. So, in every action-response of the system, there is no immediate delay. In case of opening transaction windows, popping of error messages and savings the settings or sessions there is delay much below 2 seconds. Also, when connecting to the server the delay is based on the distance between the main bank server and the customer and the configuration between them, so there is high probability that there will be a successful connection in less than 20 seconds.

5.2. Safety Requirements: -

Checking the fact that all the customers must be attachable to one server, so there would be appropriate control of the test statistics and information. Also, in case of a potential loss of connection between the customer and the server, the customer's current transaction progress is lost. When the customer finishes its transaction (by pressing the submit button) then its progress is sent to the server and logged. In case of potential server breakdown only the so far finished transactions are saved to the log file.

5.3. Security Requirement: -

This application uses objected oriented mechanisms to protect its data using methods. It also uses industrial grade security protocols to protect its customer's data. Thus, the log files are encrypted and heavily protected.

5.4. Software Quality Attributes: -

Availability: Checking that the system always has something to function and always pop-up error messages in case of component failure. In that case the error messages appear when something goes wrong so to prevail availability problems.

Usability: Checking that the system is easy to handle and navigates in the most expected way with no delays. In that case the system program reacts accordingly and traverses quickly between its states.
Functionality: Checking that the system provides the right tools for managing the user bank records, carrying out secure transactions and allocating budget monthly based on the account holder's transaction history.

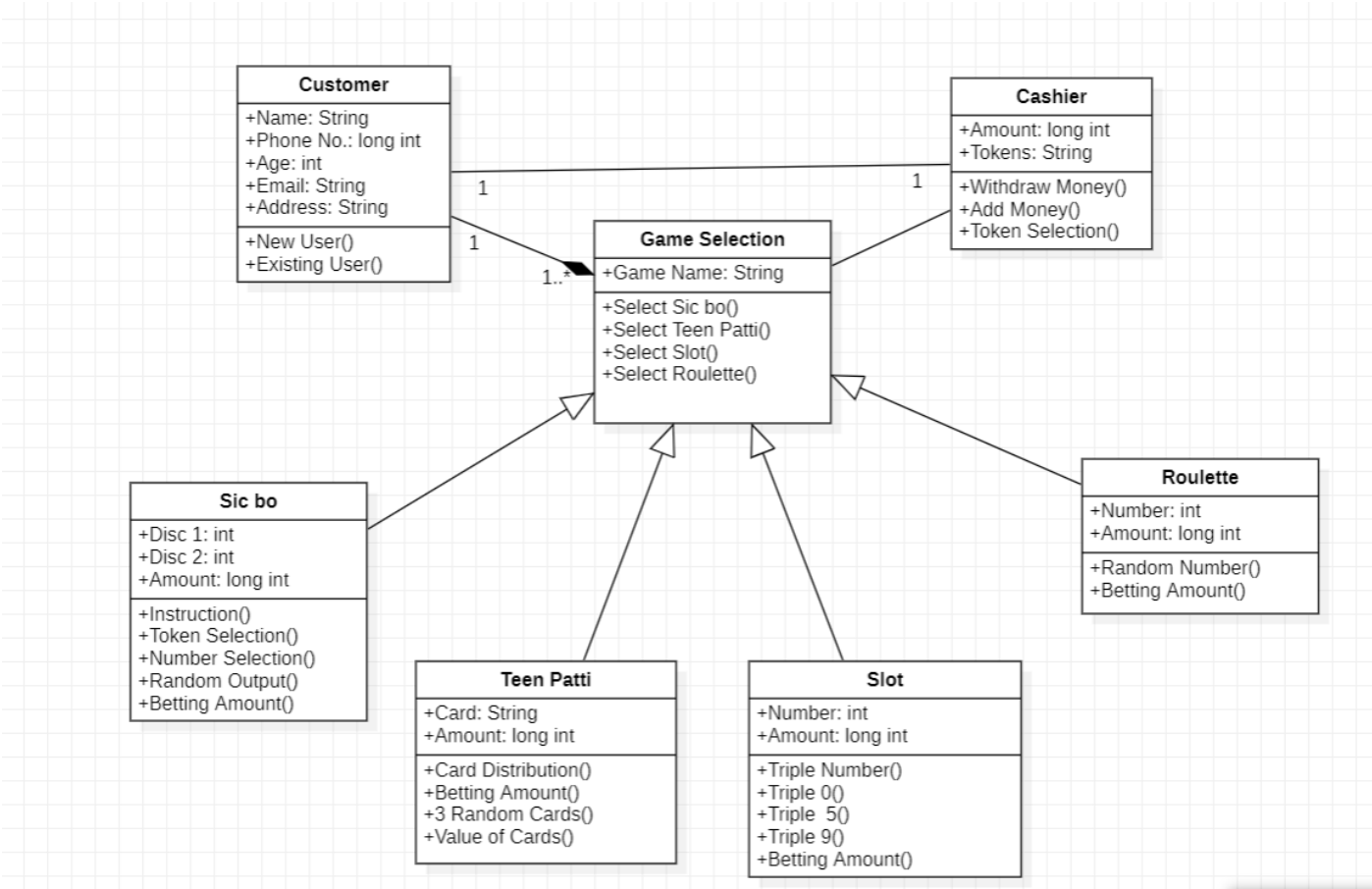
5.5. Business Rules: -

This includes: Only transaction below Rs. 50,000 can be done using the app. The app has a limit of amount that can be transacted by the user in one single day as laid down by the bank. If the customer is underaged, not all the features are available for them.

6. Other Requirements

N/A

CLASS DIAGRAM


Customer
+Name: String
+Phone No.: long int
+Age: int
+Email: String
+Address: String
+New User()
+Existing User()
Cashier
+Amount: long int
+Tokens: String
+Withdraw Money()
+Add Money()
+Token Selection()
Game Selection
+Game Name: String
+Select Sic bo()
+Select Teen Patti()
+Select Slot()
+Select Roulette()
Sic bo
+Disc 1: int
+Disc 2: int
+Amount: long int
+Instruction()
+Token Selection()
+Number Selection()
+Random Output()
+Betting Amount()
Teen Patti
+Card: String
+Amount: long int
+Card Distribution()
+Betting Amount()
+3 Random Cards()
+Value of Cards()
Slot
+Number: int
+Amount: long int
+Triple Number()
+Triple 0()
+Triple 5()
+Triple 9()
+Betting Amount()
Roulette
+Number: int
+Amount: long int
+Random Number()
+Betting Amount()
1
1
1
1..*

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}

Our casino gaming system is basically used for playing casino games through an online platform for giving the users an online experience of the casino games. It consists of 8 classes having different functions as customer login, cashier counter for money transfer and tokens, game selection, and the different types of games such as Sic bo, Teen patti, Slot, Roulette.

Our program starts with the customer class used for the login purpose of the customers. Attributes present in this class are Name (string types), Phone no (long int type), Age (int type), Email (String type), Address (string type). Operations performed in this class are registering new users and signing in of existing user.

Then the programs control goes to the cashier class, it consists Amount (long int type) and Tokens (String type) as its attributes. Methods to be performed

through this class are as follows: - withdrawal of money, Addition of money for playing games by buying the tokens of the casino and token selection for selecting the tokens for playing games such as 100,200,500 rupees token etc…

Then the program control goes to the game selection class for selecting the games, the purpose this class is to select games from Sic bo, Teen Patti, Slot, Roulette. User just has to enter the name of the game he/she wants to play in the casino.

Then the programs go to the selected game's class as given bellow:

Sic bo

It has three attributes Disc 1(int), Disc 2(int) and Amount (long int). In this game you have to select number provided by the computer, after selecting the number computer will generate one random number if that number is same as selected number, you won the game else you lost the game.

Teen Patti

It has two attributes as Card (String) and Amount (Long int). In this game the card is distributed to the player and the betting amount is being asked by the user as to how much he/she has to put in the game. Then Three random cards are being generated by the computer for comparing. Then the value of all the cards is being compared and the player having the highest valued cards wins the game.

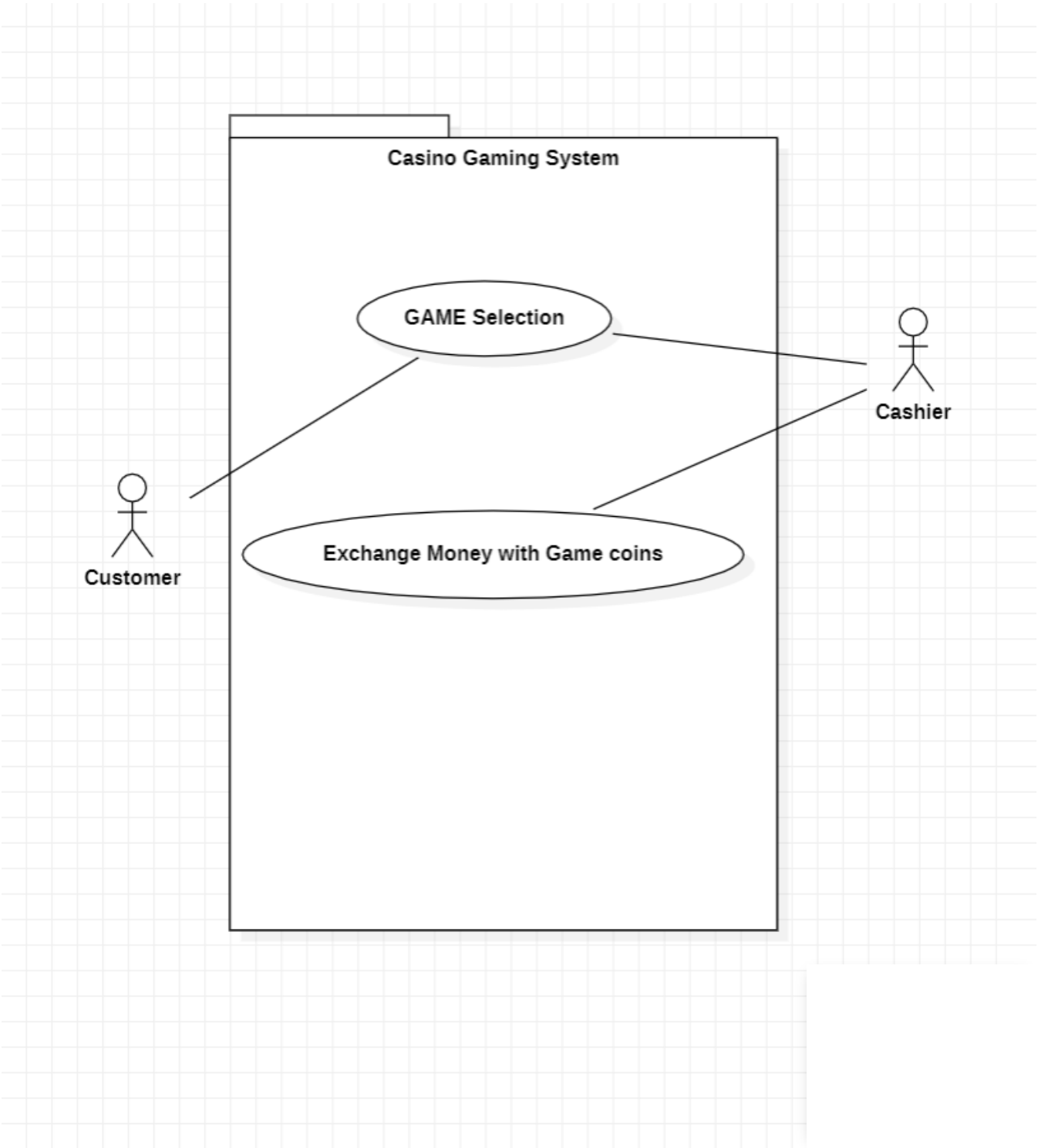
Slot

It consists of two attributes Number(int) and amount(int). In this game the betting amount is being asked by the user then three numbers are being generated between 0 to 9 (inclusive), if the numbers are 000 or 999 then the betting amount is being doubled, if the numbers are 555 then the betting amount is increased by 50%.

Roulette

It consists of two attributes Number(int), Amount (long int). In this game the betting amount is being entered by the user then a number is being selected by the user. Then a random number is being generated by the computer. The two numbers by the user and the computer are being compared is the both matches then the player wins the game or else he/she loses the game.

USE CASE DIAGRAM

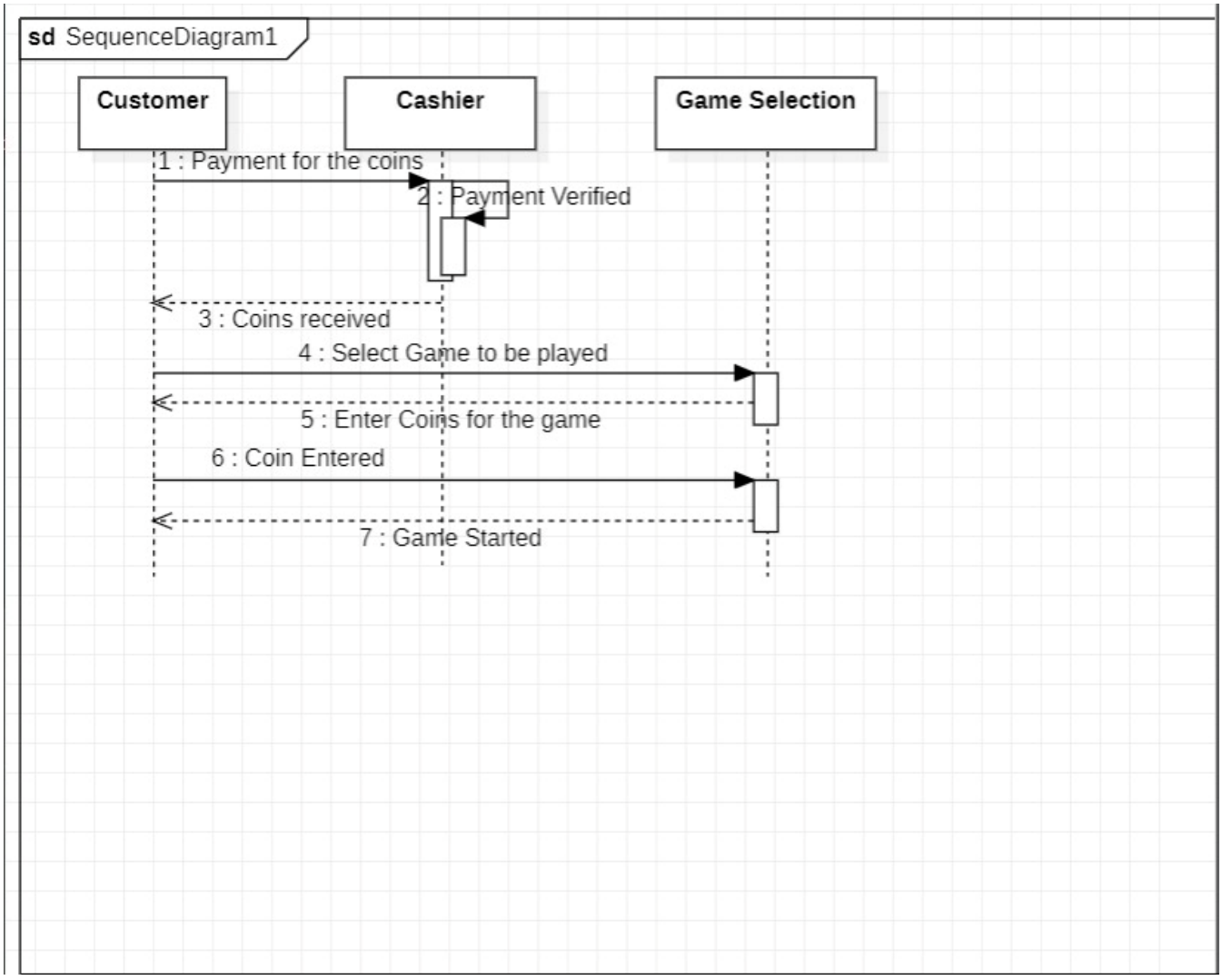

Casino Gaming System
GAME Selection
Cashier
Customer
Exchange Money with Game coins

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.

In the casino gaming system, the customer has to select the particular game he wants to play in the casino then he has to exchange his money with the casino game coins from the cashier for playing the games. Then he is allowed to play the games.

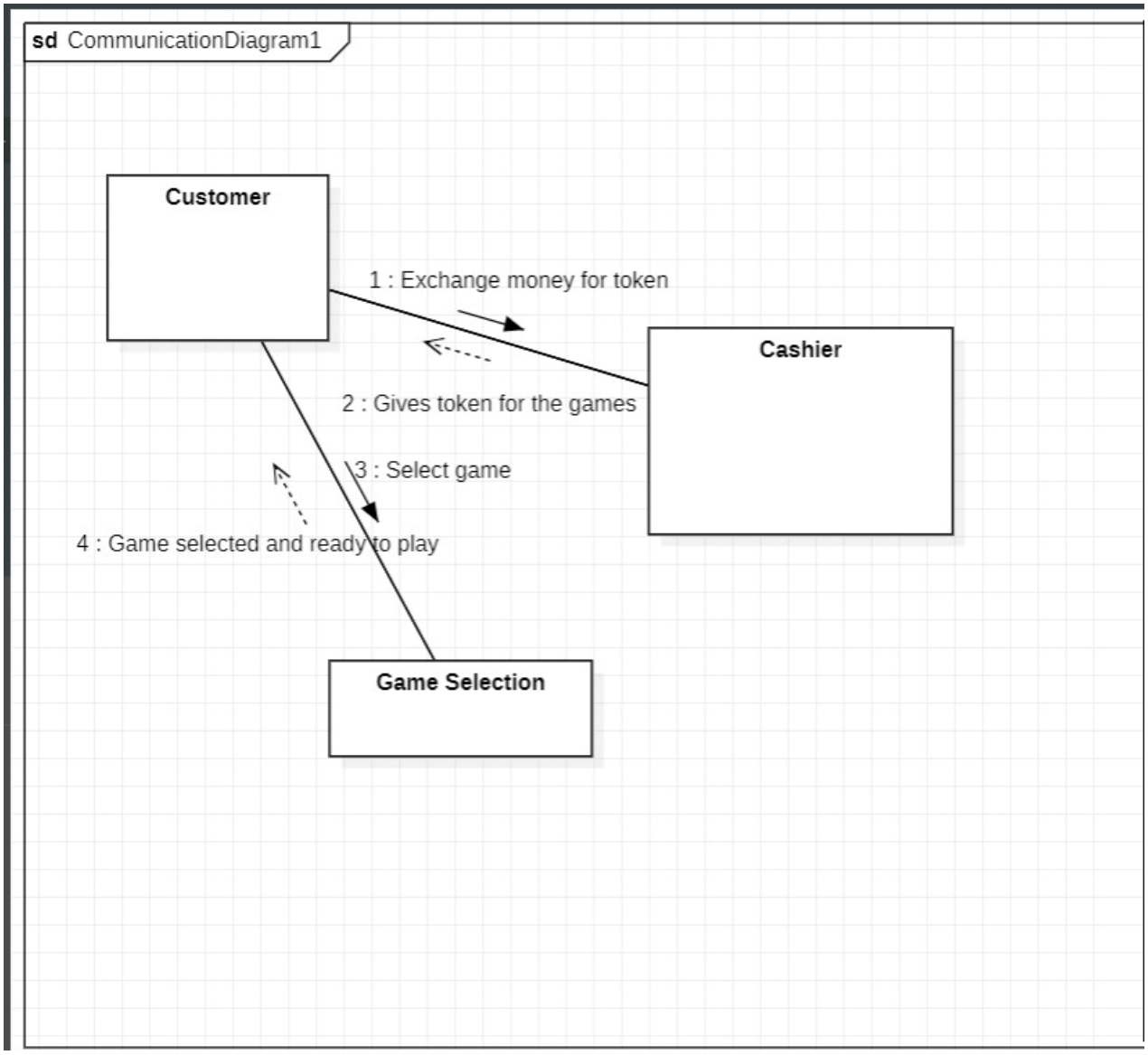
SEQUENTIAL DIAGRAM


sd SequenceDiagram1
Customer
Cashier
Game Selection
1 : Payment for the coins
2 : Payment Verified
3 : Coins received
4 : Select Game to be played
5 : Enter Coins for the game
6 : Coin Entered
7 : Game Started

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

Firstly, the customer is singing in or creating new id in the casino. then the payment is. Done by the customer of the coins of the casino in the cashier counter. The payment is verified by the cashier then the coins are being received by the customer. The customer then selects the game he wants to play in the casino. Then the user is being asked to enter the coins he wants to put in the game he/she has selected to play. Then the game begins and the user is allowed to play.

COLLABORATION DIAGRAM

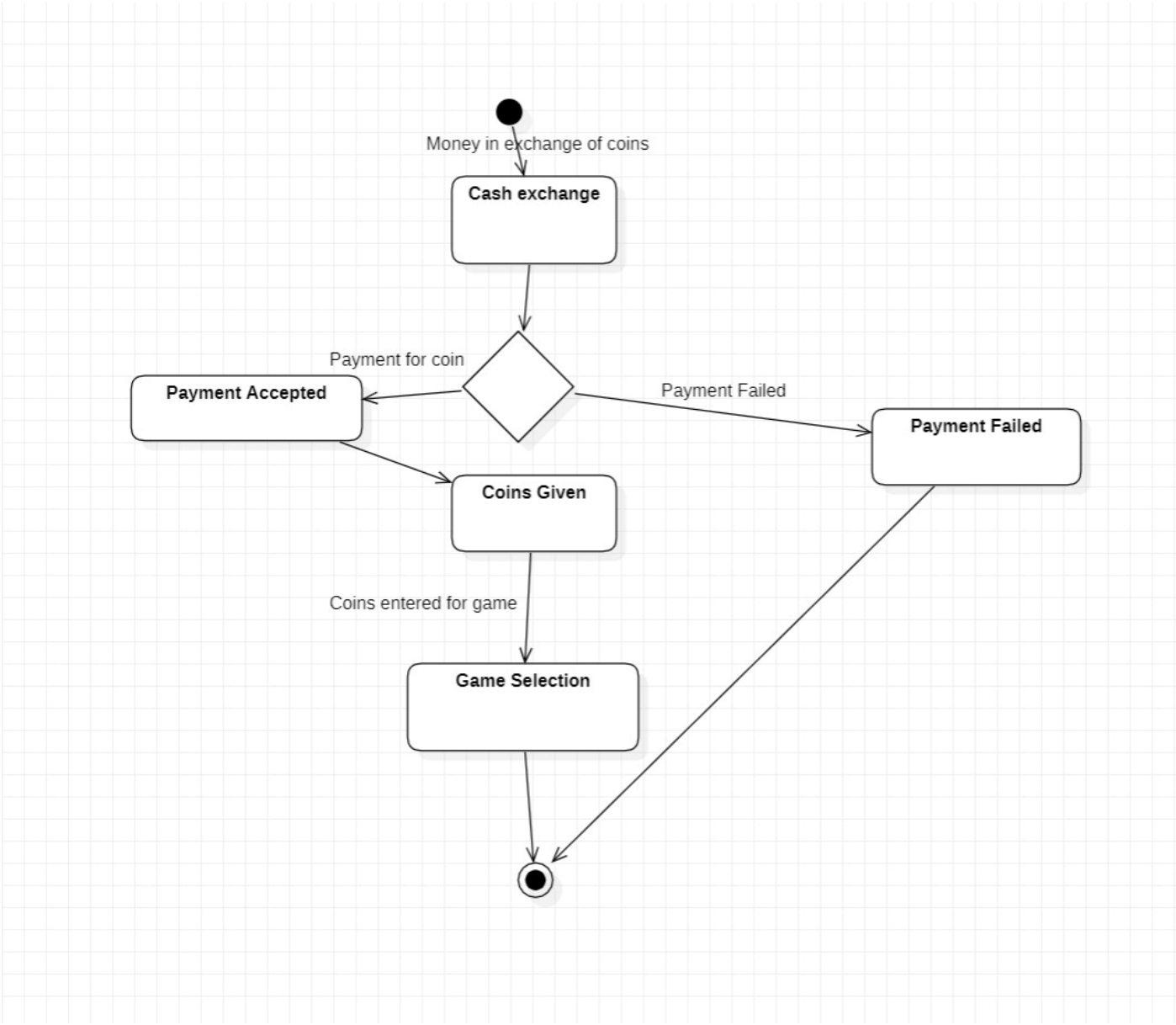

sd CommunicationDiagram1
Customer
1 : Exchange money for token
Cashier
2 : Gives token for the games
3 : Select game
4 : Game selected and ready to play
Game Selection

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.

Firstly, the customer has to login or sign up in the casino. Then the money is being exchanged with the tokens of the casino in cashier counter. The tokens are received by the user for playing the games of the casino. Now the user has to select the games from the games present in the casino which he/she wants to play. Then the user is ready to play the game.

STATE CHANGE DIAGRAM

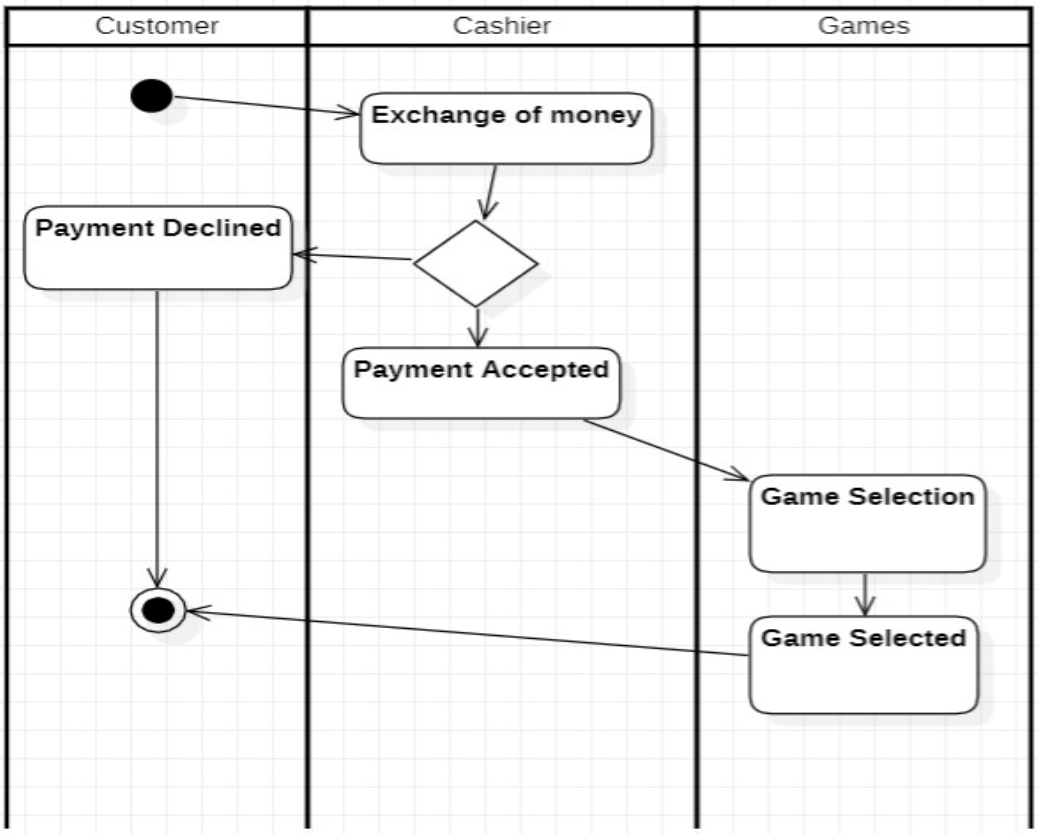

Money in exchange of coins
Cash exchange
Payment for coin
Payment Accepted
Payment Failed
Payment Failed
Coins Given
Coins entered for game
Game Selection

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. densify the events.

Firstly, the customer is singing in or creating new id in the casino. then the payment is. Done by the customer of the coins of the casino in the cashier counter. The payment is verified by the cashier then the coins are being received by the customer. The customer then selects the game he wants to play in the casino. Then the user is being asked to enter the coins he wants to put in the game he/she has selected to play. Then the game begins and the user is allowed to play.

ACTIVITY DIAGRAM


Customer
Cashier
Games
Exchange of money
Payment Declined
Payment Accepted
Game Selection
Game Selected

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.

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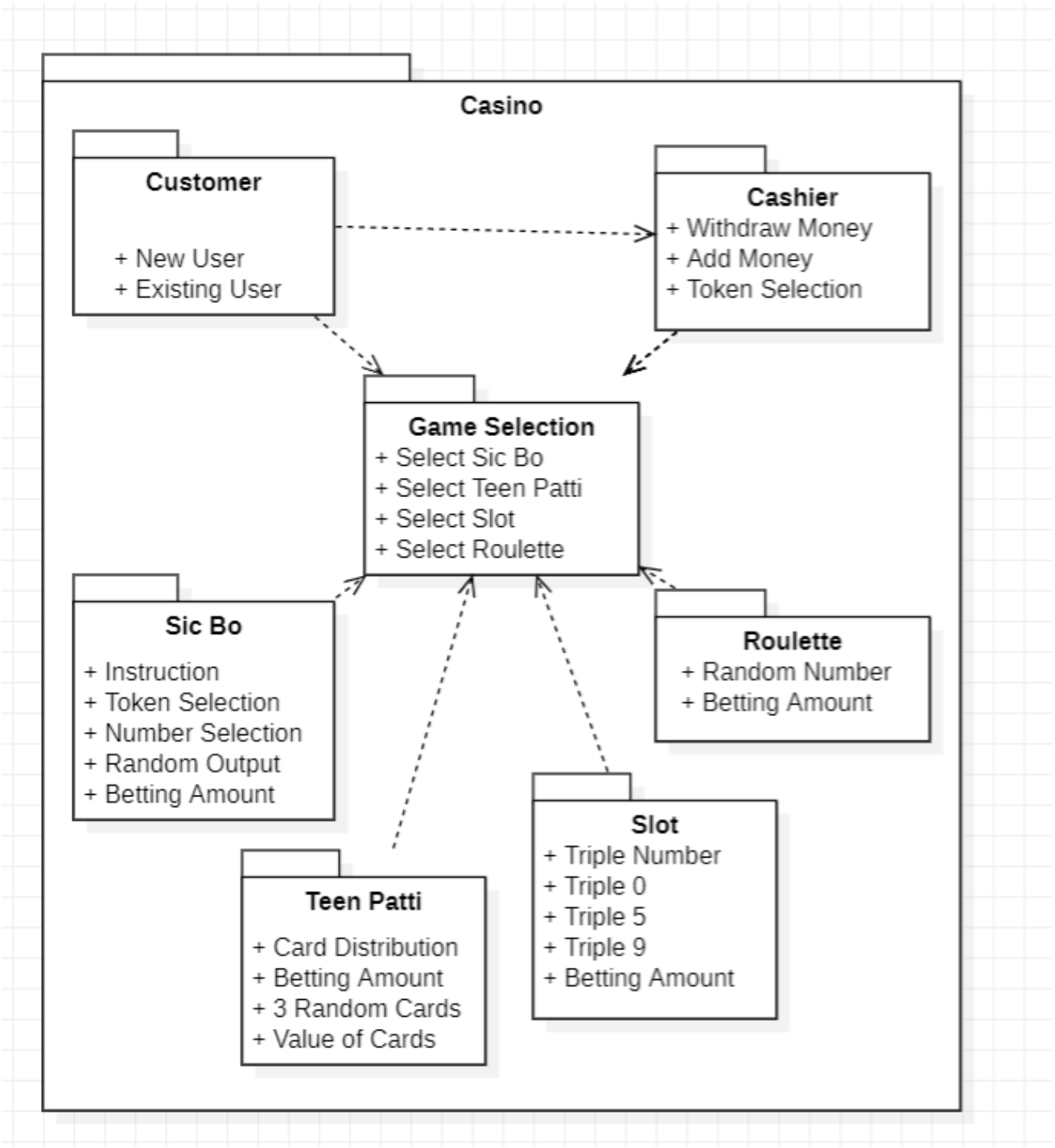
PACKAGE DIAGRAM


Casino
Customer
+ New User
+ Existing User
Cashier
+ Withdraw Money
+ Add Money
+ Token Selection
Game Selection
+ Select Sic Bo
+ Select Teen Patti
+ Select Slot
+ Select Roulette
Sic Bo
+ Instruction
+ Token Selection
+ Number Selection
+ Random Output
+ Betting Amount
Roulette
+ Random Number
+ Betting Amount
Slot
+ Triple Number
+ Triple 0
+ Triple 5
+ Triple 9
+ Betting Amount
Teen Patti
+ Card Distribution
+ Betting Amount
+ 3 Random Cards
+ Value of Cards

All the interrelated classes and interfaces of the system when grouped together form a package. To represent all these interrelated classes and interface UML provides package diagram. Package diagram helps in representing the various packages of a software system and the dependencies between them. It also gives a high-level impression of use case and class diagram.

Purposes: -

- To provide static models of modules, their parts and their relationships
- To present the architectural modelling of the system
- To group any UML elements
- To specify the logical distribution of classes
- To emphasize the logical structure of the system
- To offer the logical distribution of classes which is inferred from the logical architecture of the system

Uses: -

- To illustrate the functionality of a software system.
- To illustrate the layered architecture of a software system.
- The dependencies between these packages can be adorned with labels / stereotypes to indicate the communication mechanism between the layers.

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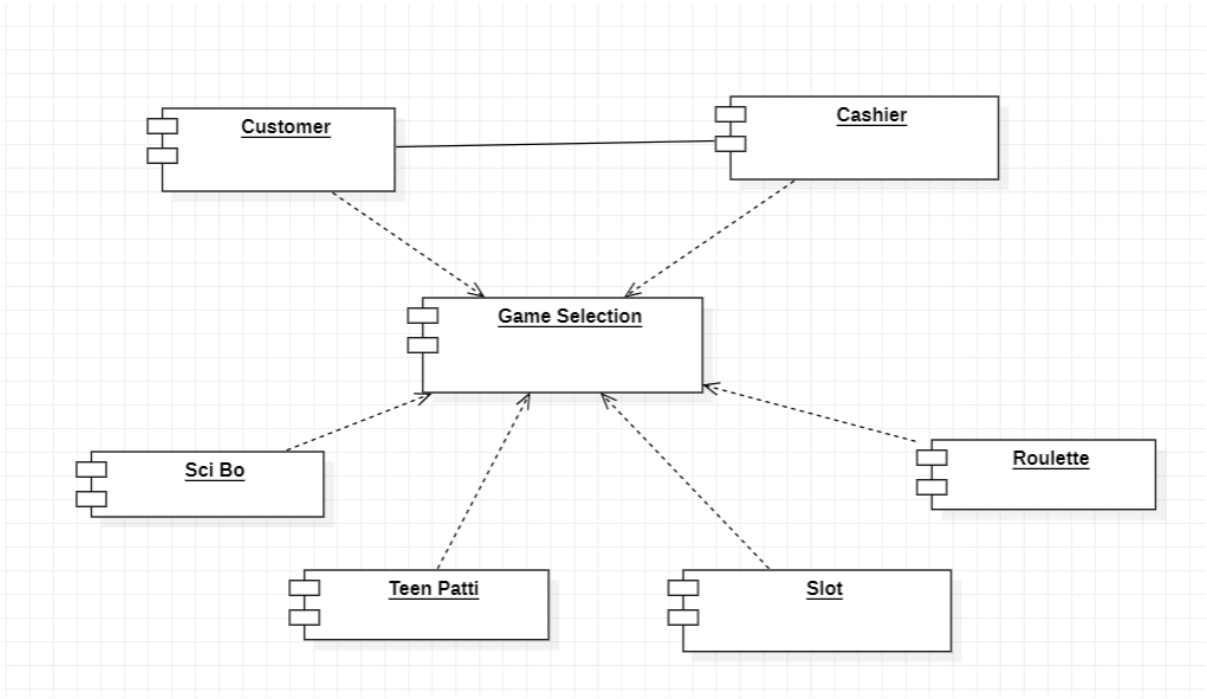
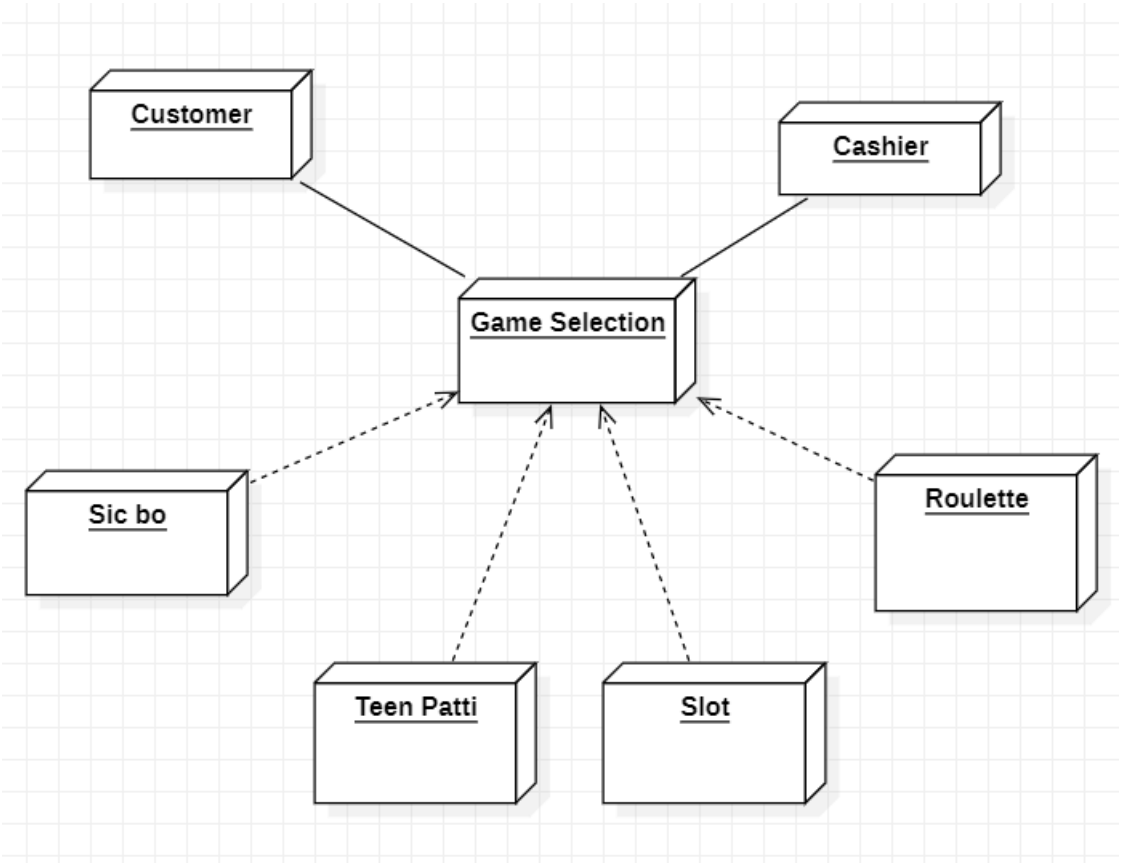
COMPONENT DIAGRAM


Customer
Cashier
Game Selection
Sci Bo
Roulette
Teen Patti
Slot

Based on the analysis of the problem description of the system, identify the major subsystem. Group the individual packages and other logical entities in the system to provide as separate components. Then identify the interfaces needed for components interaction. If needed, identify the subprograms which are part of each of the components and draw them along with their associated components. Use appropriate notations to draw the complete component diagram.

Firstly, customer logins or sign up as new user then the works of cashier is executed then the game is being selected by the user. After selecting the game, the user is allowed to play the selected game by the coins of the casino.

DEPLOYMENT DIAGRAM


Customer
Cashier
Game Selection
Sic bo
Roulette
Teen Patti
Slot

Identify the hardware components and processing units in the target system. Analyse the software and find out the subsystem, parallel execution of modules, server-side components, client-side components, business logic components, backend database servers and software and hardware mapping mechanism to map the software components to be mapped with appropriate hardware devices. Draw the hardware components and show the software components inside them and also show the connectivity between them.

Application: -

- To model the network and hardware topology of a system
- To model the distributed networks and systems
- Implement forwarding and reverse engineering processes
- To model the hardware details for a client/server system
- For modelling the embedded system

Firstly, the customer is singing in or creating new id in the casino. then the payment is. Done by the customer of the coins of the casino in the cashier counter. The payment is verified by the cashier then the coins are being received by the customer. The customer then selects the game he wants to play in the casino. Then the user is being asked to enter the coins he wants to put in the game he/she has selected to play. Then the game begins and the user is allowed to play.

CONCLUSION

In the report, we will introduce a brief about casinos gaming system, and then, the current state of casino gaming and internal description of casinos will be shown. The advantage and disadvantage of casinos will be discussed in the surrounding community.

There is no double that gambling is one of the most popular games in the world. Generally speaking, casino can be found in anywhere in the world. Therefore, casino is not only an entertainment place for people but also relevant to the hospitality industry and it is as well as a significant aspect contained by the national finance and economics.

Moreover, with the development science and technology, improve the management has become more important to casino to create more entertainment facilities to meet the needs of the people, to stimulate the economy development. However, the industry is also a potential risk (social problems, crime). In order to prevent negative, the government should pay more attention on casino management and restrictions to seek better ways to adjust entertainment and gain enormous profit.

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THANK

YOU