American International University-Bangladesh (AIUB)

Department of Computer Science Faculty of Science & Technology (FST)

E-sports management software

Group – 5

Semester: Summer_21_22		**Section: B**
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PROJECT PROPOSAL

Background to the Problem

1. Write the background description that helps putting your project into the right context of a problem domain and gives everyone involved a common view of the project.

Ans: The e-sports management system mainly manages the whole system of an e-sports tournament. When a player or team wants to play a tournament, they can register throughout this system. The player can choose the tournament. a player can create a team with his friend. And the organizer's team maintain the tournament and ranking.

2. What is the root cause of this problem? Why this problem is so important to consider?

Ans: Nowadays the number of e-sports players in Bangladesh is gradually increasing. but there are no e-sports management systems. As there is no e-sports management system in our country our esports players are not getting good opportunities in the esports sector. And the esports industries did not grow up more. so, our players use the sports management system of other countries. as a result, they pay a huge amount of money as registration fees to those countries. We want to develop an e-sports management system so that our players can easily use this system, as well as our country, can profit from it. It also can increase the availability of our local players.

Solution to the Problem

1. Describe what is your project/thesis objective? What solutions are you going to provide to solve the above-mentioned problems?

Ans: our project objective is we develop an esports management software, throughout this software esports players get more opportunities in the esports industry. since our region is far behind in the esports sector. so, we think that through this software our esports industry will grow up more.
Our country's esports players are not getting good opportunities in the esports sector lacking a good esports management system. So, we are trying to develop an e-sports management system.

So, this problem matches with Category-B

2. What are the solutions you are going to propose to deal with the problem? why is this solution is particularly appropriate to solve the problem? Is the solution feasible to the meet the business objective?

Ans: esports Management software grants users the ability to organize and comprehensively manage eSports events. Tournament organizers use eSports management software to schedule and promote events, push branding, handle user registration, run competitions, facilitate prize pools, and more.

This system meets the busyness objective as we can keep the huge amount of money for our country. it can improve our economic system. It also can increase the popularity of our local players.

3. Describe the basic functionalities of your proposed solution that makes the best use of state-of-art technology and produced a significant result that is likely to have a major impact on societal, health, safety, legal and cultural issues. Provide a deep insight that demonstrate and preset a creative solution to the real-life problem.

Ans: We want to develop a esports management software

The esports player can play tournaments throughout this system. every esports game is mainly played by a group-wise, 6 members or 5 members team participates in a tournament. So fast all players must sign up for an account then he/she can register for the tournament. For the registration 1 player submit all group member information. That players pay the registration money. The registration procedure controls the registered team when the registered team confirms the team for the registration then the management team selects the team qualification-wise. Then the host management host the tournament. And the judging team monitors the game and ranks the players.

4. Describe the target group of users of your solution? And how they will be benefited by your proposed solution to the problem?

Ans: Online gamers are the main target of this system.

- As we don’t have any native system to manage e-sports, the e-sports industry is not growing as much as expected.
- It can enrich the e-sports community which can help the gamers community.

5. Describe the contribution of your project to the development of scientific results that is identified and well documented.

6. Provide a literature review on what are the other studies that have discussed the same topic of yours in the literature and explain how your study has utilized and extended the problems of existing studies.

Ans: E-sports is a new sector and other countries are already keeping pace with it. but our region is lagging behind in this sector. because our e-sports sector has not developed with others. as a result, our esports players are not getting good opportunities in the esports sector.

7. Provide a description of all the existing studies presented in the problem area. What are the existing software solutions (for project) are available to solve the aforementioned problems?

Ans: At present esports industry has grown a lot in others countries. But in our country esports did not grow up. Due to a lack of esports management system. Therefore, esports player are not getting such good opportunities. So, our esports industry are lagging behind.

that's why we need to developed an e-sports management software to solve the problems

8. What are the existing software solutions are available to solve the aforementioned problem? And how your proposed solution is going to extend them in providing more benefits to the users?

Ans: Since there is no e-sports management software developed before in our region. that's why we need to developed an e-sports management software to solve the problems mentioned earlier

Through our proposed solution, the e-sports industry will grow up more in our region and the huge number of e-sports players will get more opportunities to play more games. so, the e-sports player will be benefited from this software.

Requirement Analysis

Functional requirements:

1. Software Sign-up

- This software has 3 types of users sign up (Organizer, Player, Customer)
- For sign up the user must deliver a valid email, phone number, unique user name, 8-digit mixed password.
- Sending Link for verification to the given email address.
- When Normal users sign up, subscription option will show up. To complete the procedure, they must provide their credentials.

2. Software Log in

- When the organizer logs in with his/her user's name, password he/she will receive an OTP code on the given phone number.
- Normal Users and the players can log in just by providing their user's name and password.
- Then the system will match the provided information with the database and decide the user type.
- If the user provides a wrong password 3 times, the account will be blocked. User has to go through a verification procedure to regain the account.
- If the user forgets the password, there will be "forget password" option, through this option the system will use the users phone number and email id to verify the user and give him a chance to reset the password.

3. Player dash-board

- After log in a player, the player dash-board window pops up.
- Player dash-board have a notification option. which notifies the player the registered tournament schedule.

4. Home page

- There will be a game list option on the top bar.
- By clicking the game list option, a new window will show up. Their users will be able select a game.
- After selecting the game, the ranking list of the players of our server and details of the selected game will show up.
- And the home page will also contain the upcoming schedule of tournaments and news related to current e-sports community.
- While scrolling down the home page, advertisement of the sponsors will pop up.

5. Accounts

- The accounting department receives the registration fee.
- An account gives clearance to a team by checking their payment status.
- And the accounts department sends an email to the team leader for payment is done.

6. Sponsor

- The home page has a section for a sponsor. Where any sponsored can show their advertisement.

7. Management and judge panel

- Judges can see all the player's lists in a tournament.
- The judges are monitoring the running tournaments.
- The judge and management team can be ranking the players.

8. Notice Board

- The notice board noticed the upcoming tournament and the esports-related news.
- The admin can post notice.
- Other users only read the notice.
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9. Score-board

- And the rank of the top player rank is shown on the scoreboard.
- Anyone can search by the name of a player on score-board
- From time to time update the score-board.

Non-functional requirements:

1. Security

- If there are no activities for 5 minutes, the user account will automatically log out of the system.
- Every time the organizer logs in to the system, an OTP will be sent to the given number to verify the user.

2. Maintenance

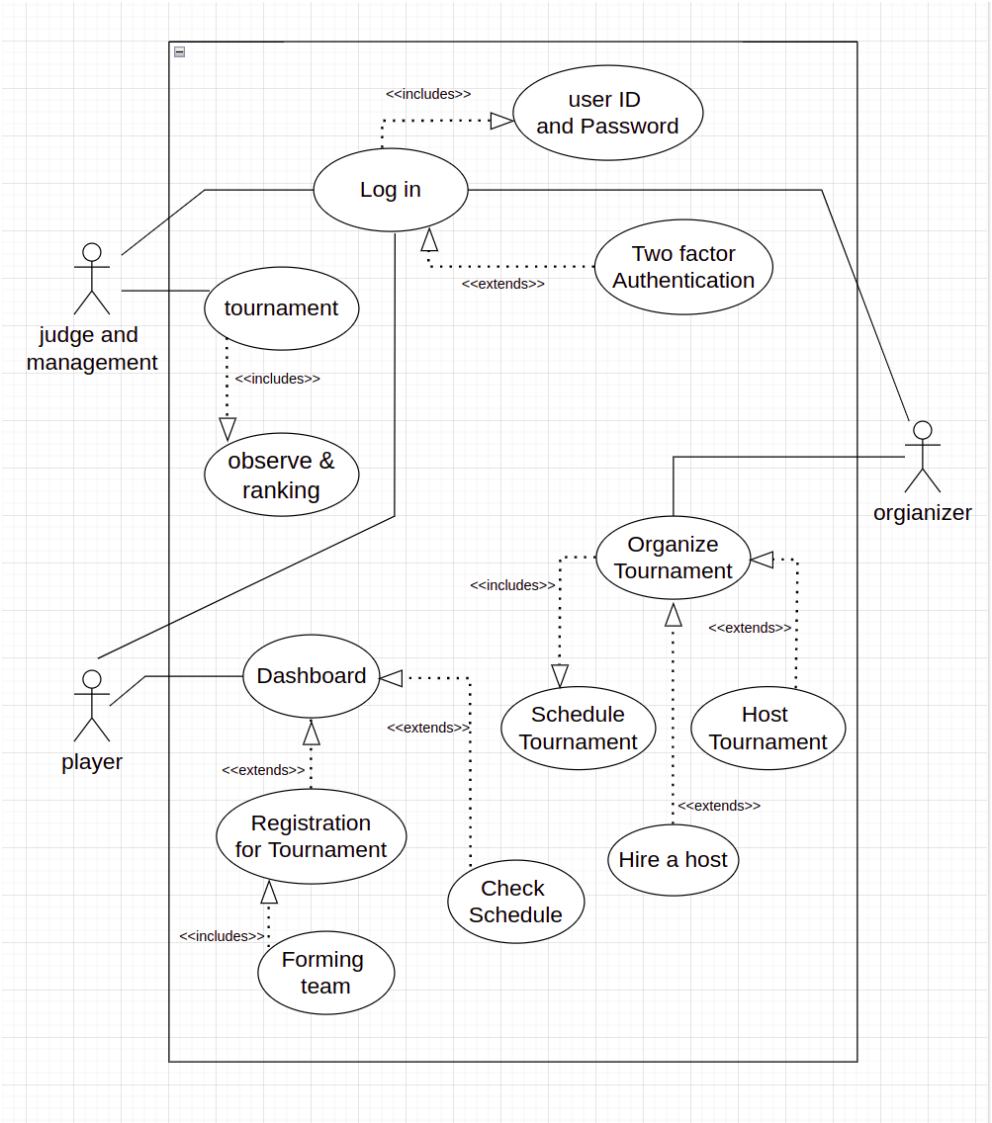
- The users must submit a survey every month for developers to better understand the system and develop it further.

3. Usability

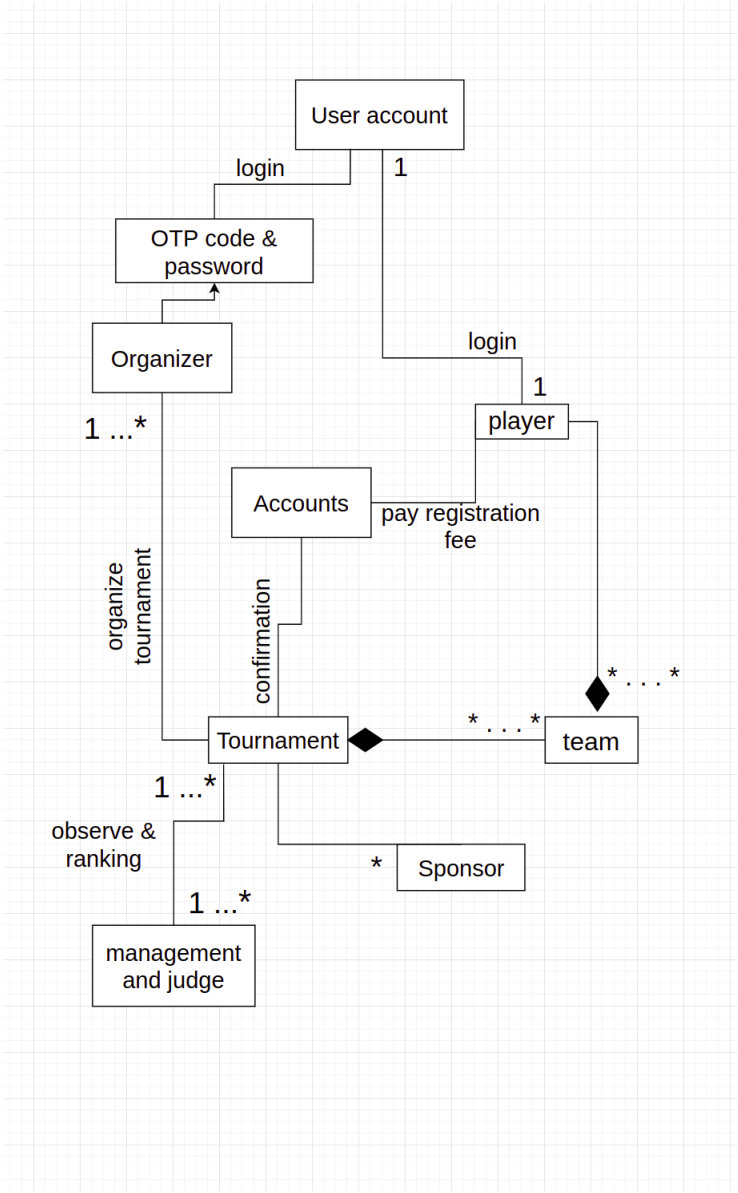
- As an e-sports management software, this has a huge variety of functionality, which makes it complex to the users. So, we have to make sure to make the user interface easy to increase usability.
- We should develop the ui , ux and optimize it perfectly for the user.

Software Design

Use case diagram:

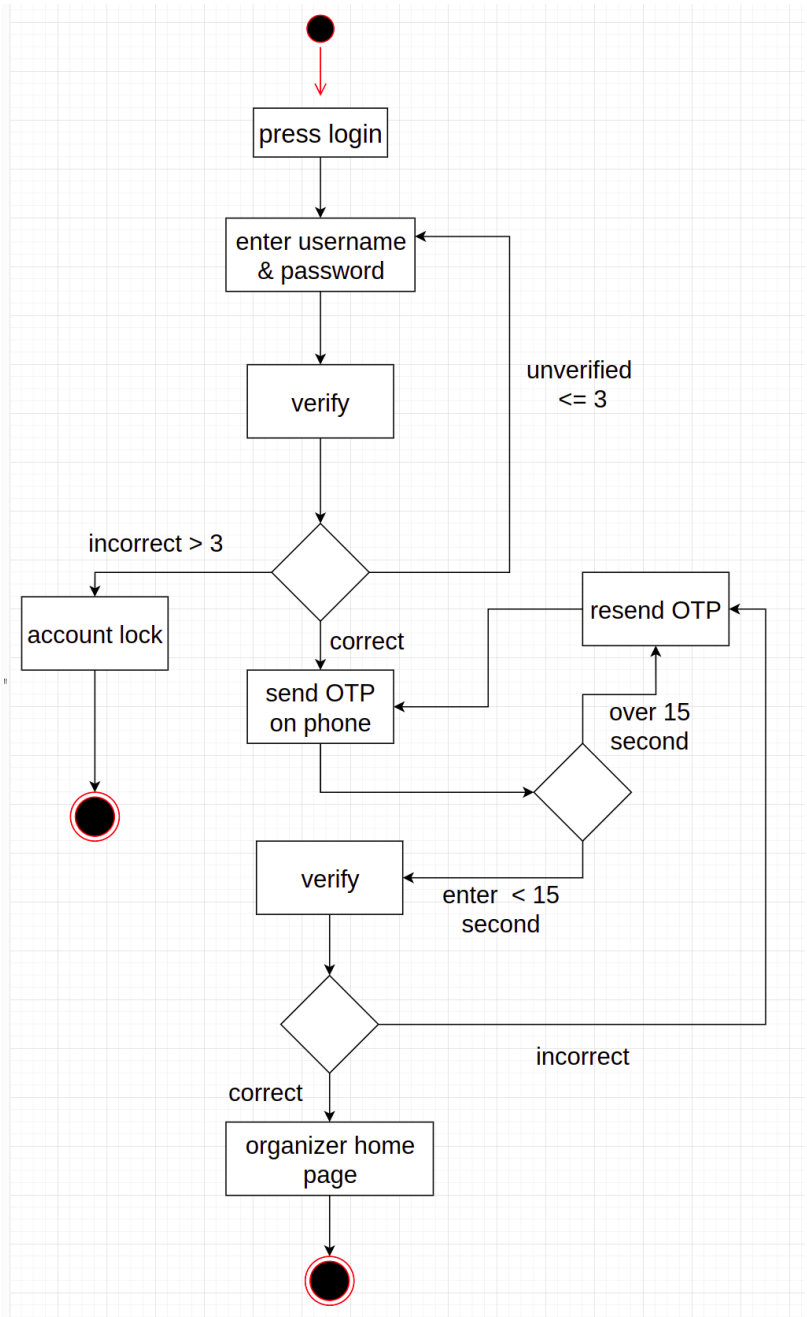


Class diagram:

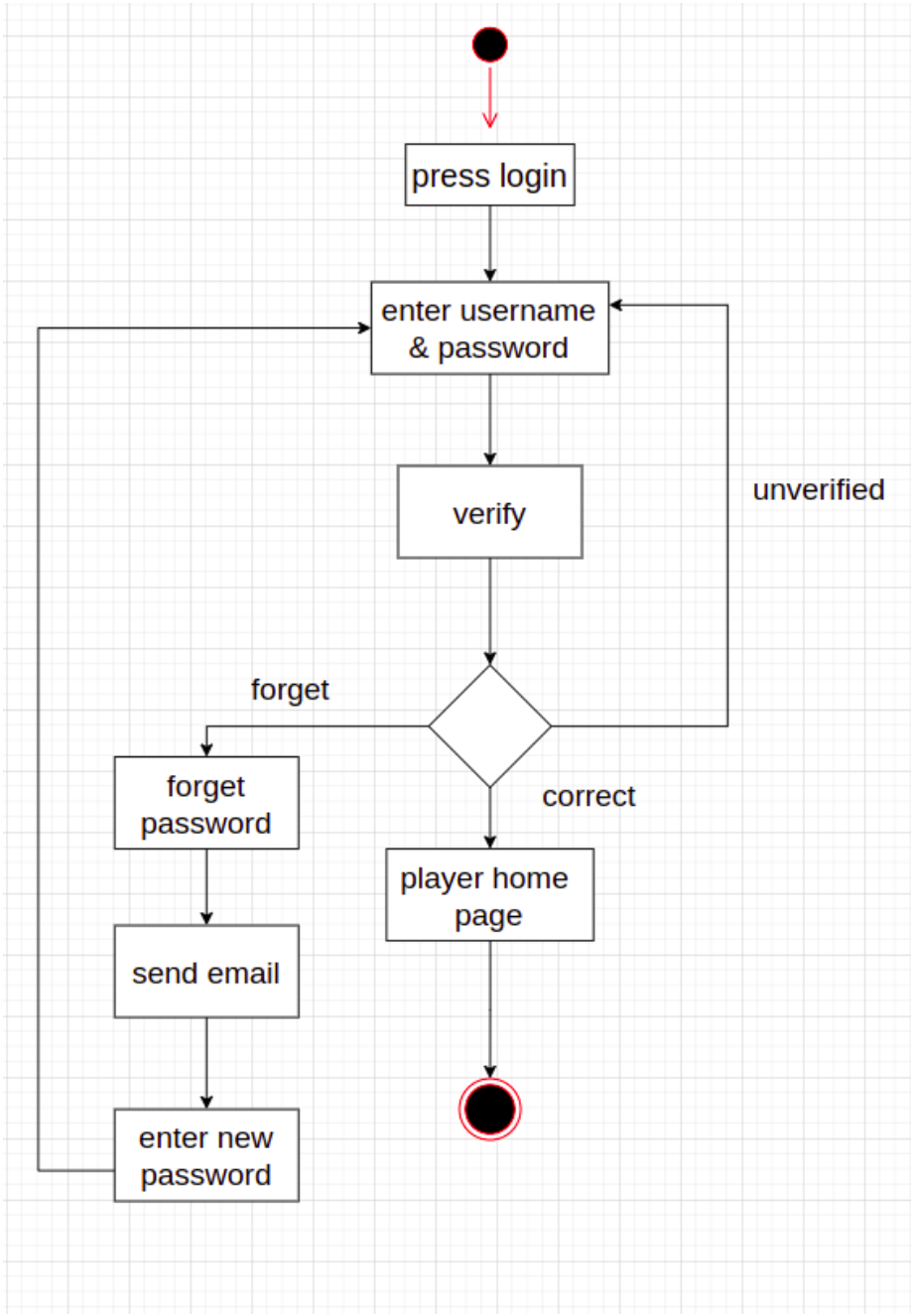


Activity diagram:

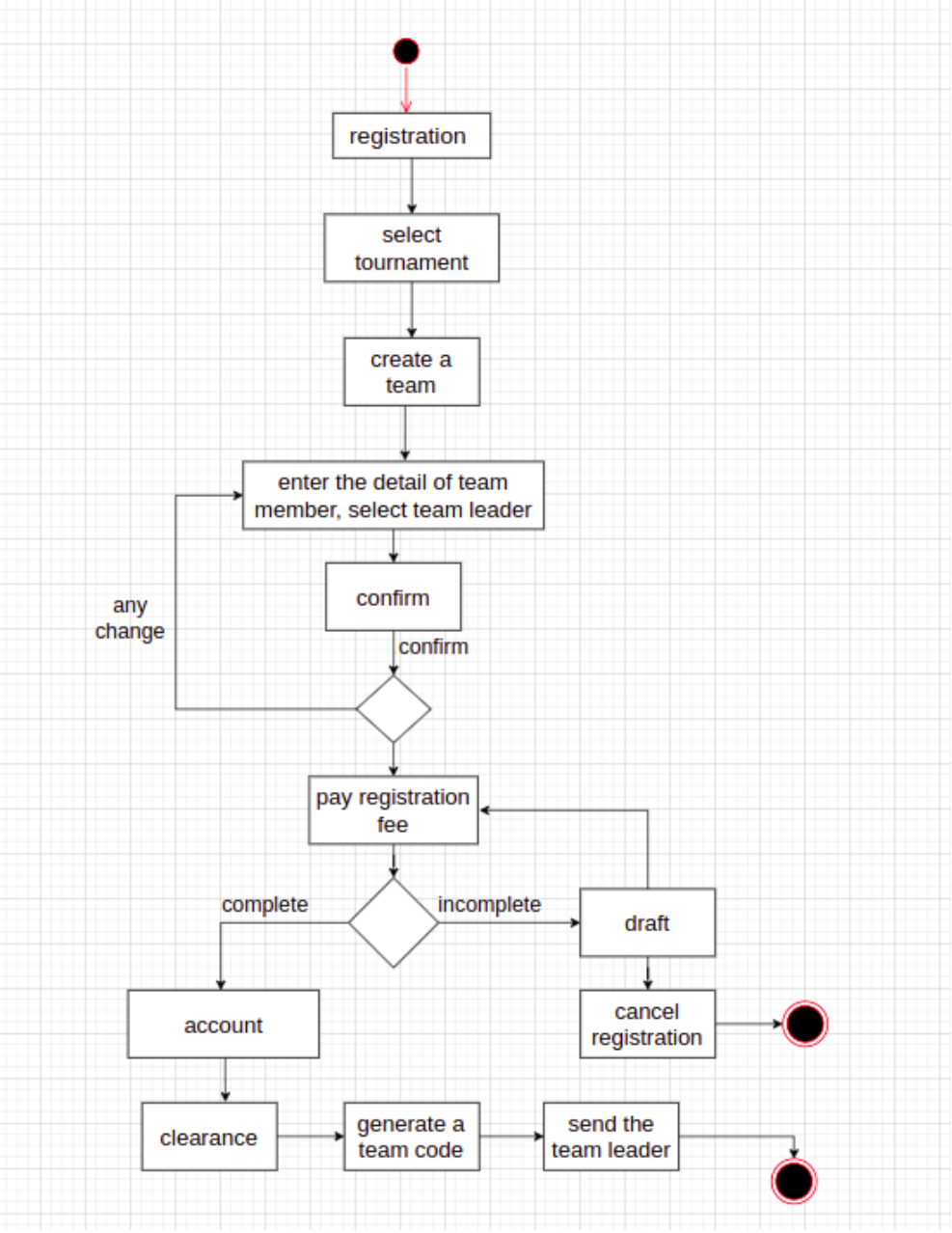
management login



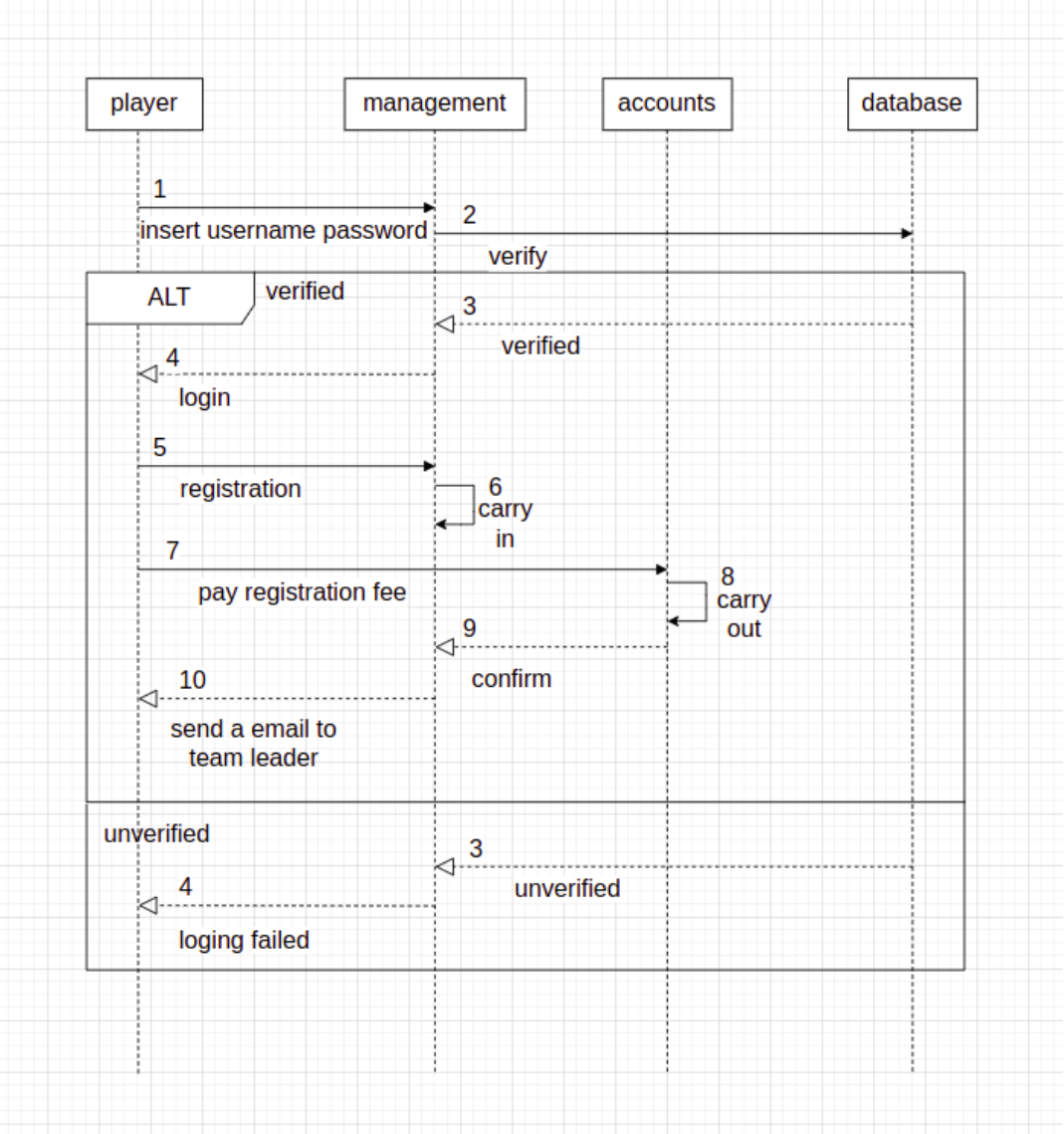
player login



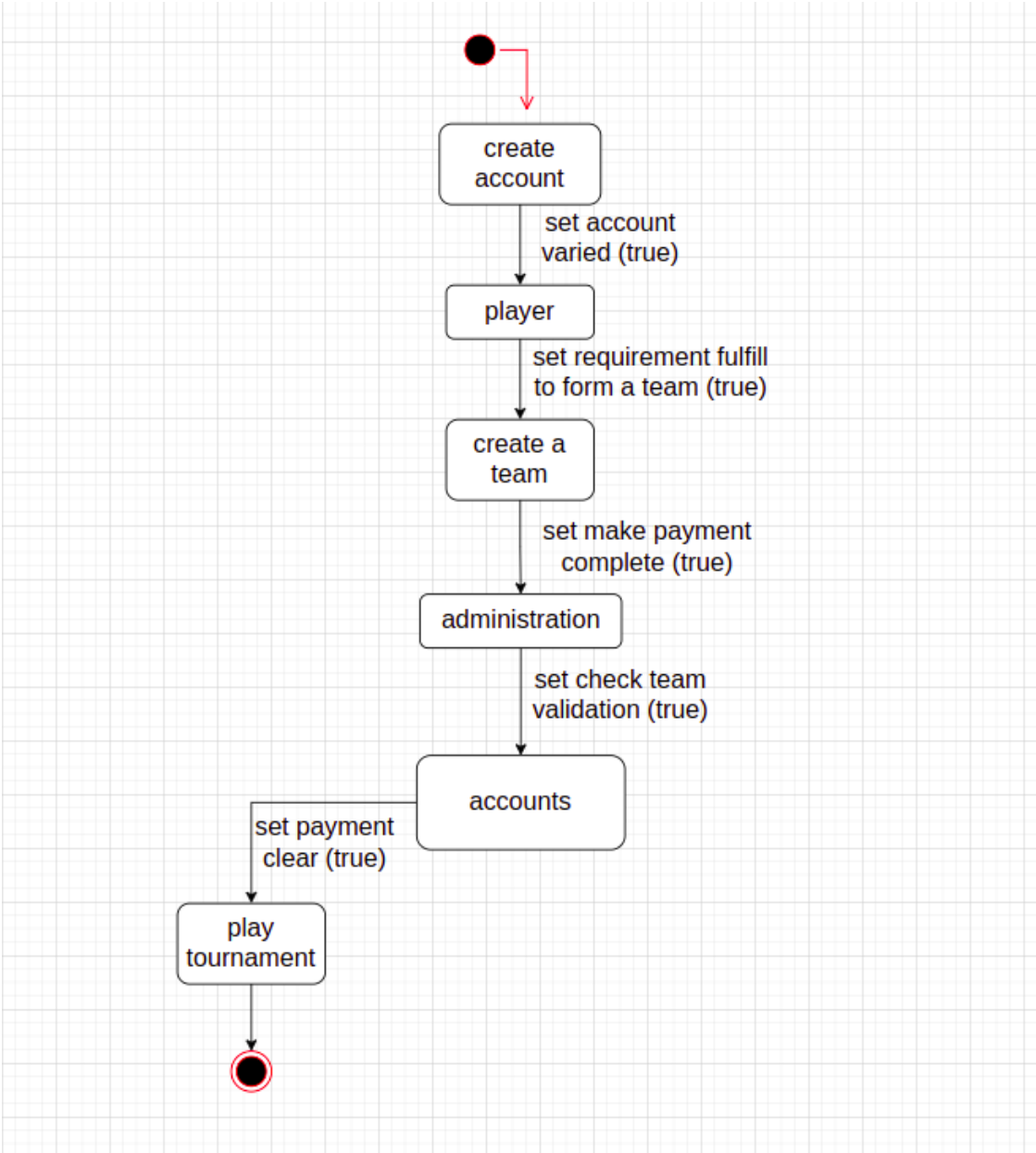
Registration

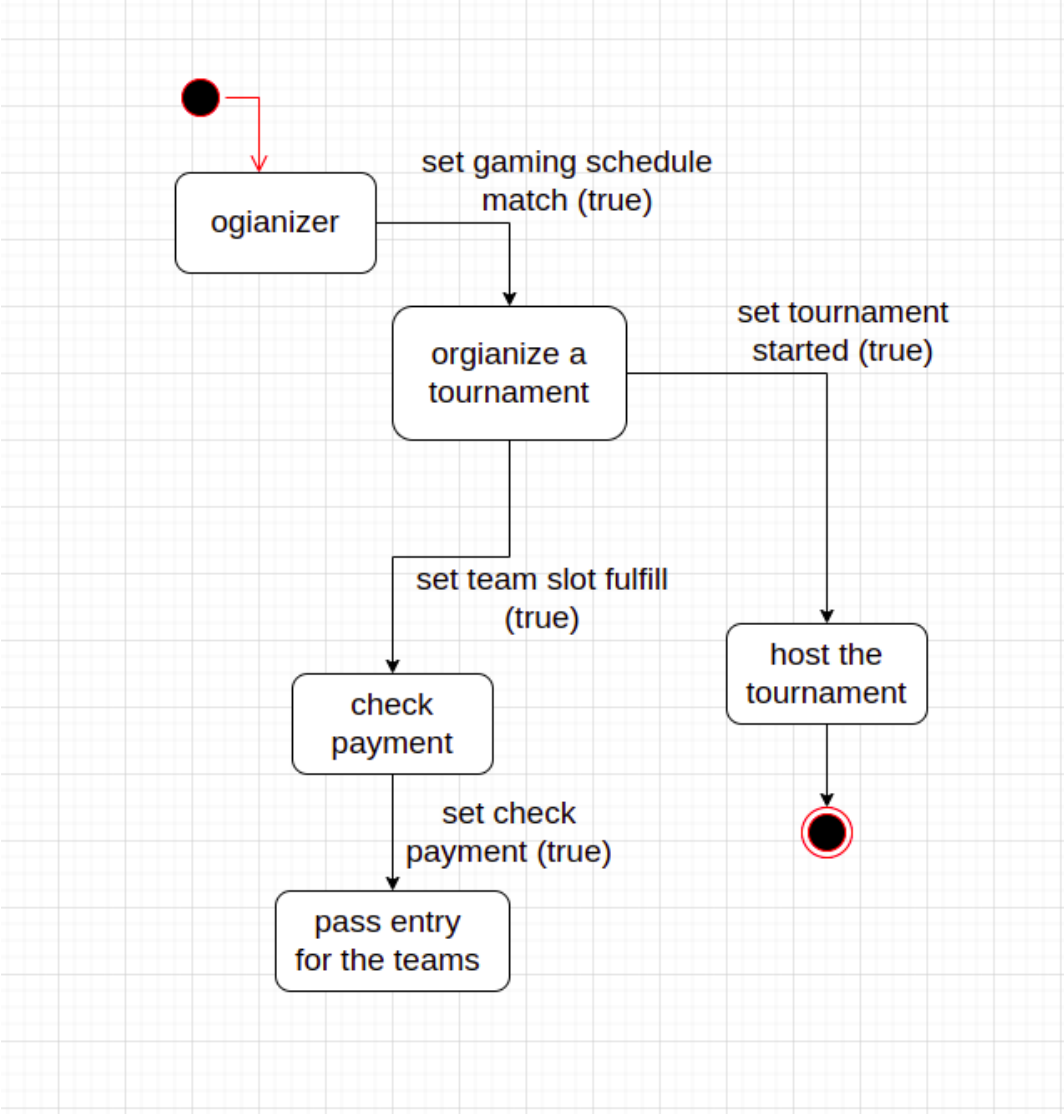


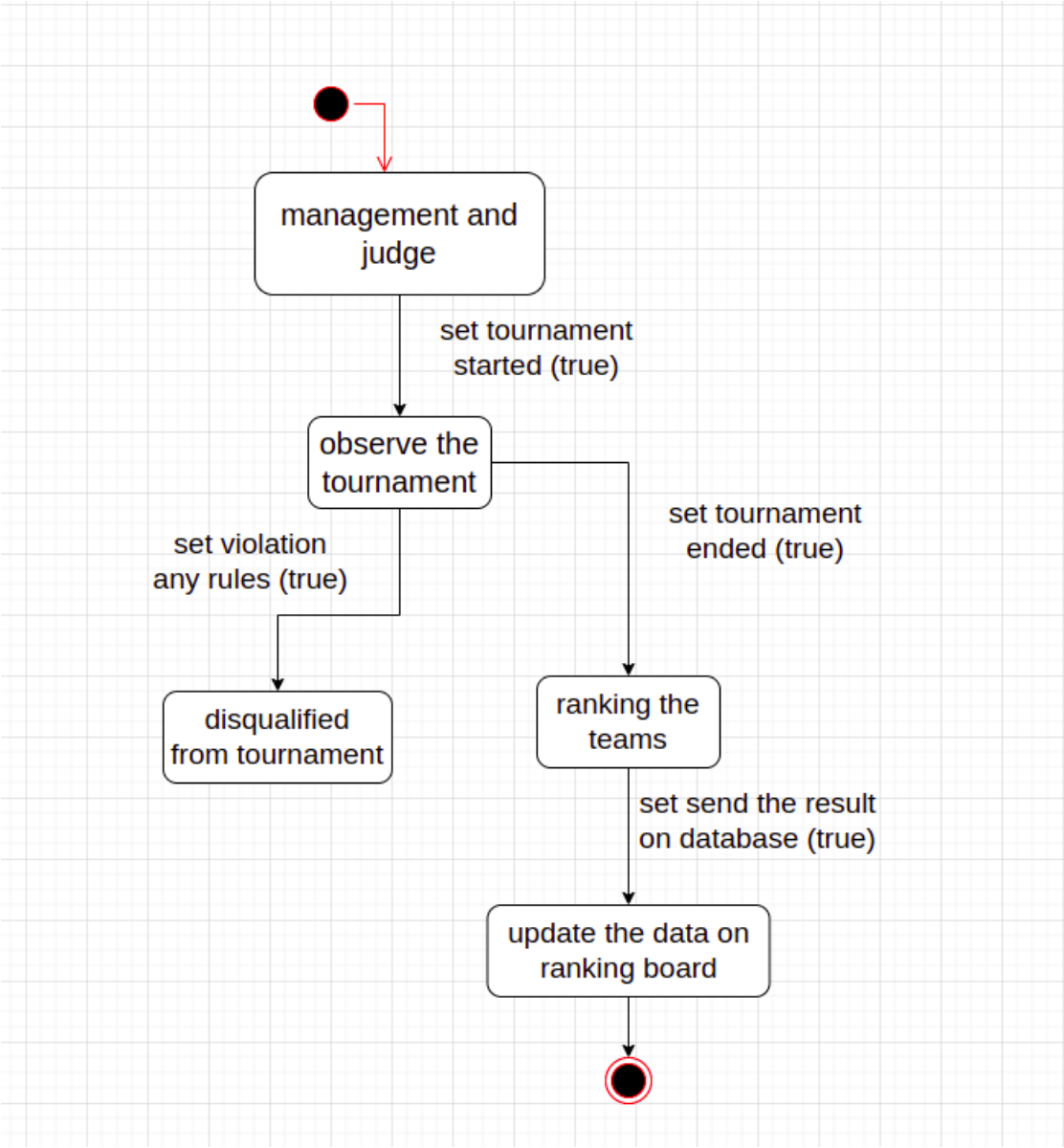
Sequence diagram:



State diagram:




ogianizer
set gaming schedule
match (true)
orgianize a
tournament
set tournament
started (true)
set team slot fulfill
(true)
check
payment
host the
tournament
set check
payment (true)
pass entry
for the teams


management and judge
set tournament started (true)
observe the tournament
set violation any rules (true)
set tournament ended (true)
disqualified from tournament
ranking the teams
set send the result on database (true)
update the data on ranking board

Process model

1. what process model we choose

We choose DSDM process model for our project. DSDM (Dynamic system development method) process model allows us to complete the project faster than the other process models. One of the main features of DSDM is flexibility. To develop our project, we chose DSDM because it fits our project requirement. Our project is e-sports management system. So, our project is needed to be updated time to time. DSDM process model allows us to deliver faster (4-6 months). We want to complete our project in 4-5 months. DSDM also allows us to form a project team around 5 members. Project completion percentage of DSDM is also high. We may need to add some new requirements in the development phase's DSDM allows us to do that.

2. Why we cannot choose other process model

There are many other software development process models except DSDM. such as: waterfall, V model, FDD, SCRUM. Waterfall Model: We did not choose waterfall model as we cannot backtrack in this model. As a result, we cannot add new requirements in development time.

FDD: FDD is used to developed large software like banking related software or simulation base software like Matlab, Multisim. But our proposed project not a large project so we can't choose FDD.

SCRUM: no more items and issues can be found nor can any new ones be invented in the post-game phase of scrum. That's why, we did not choose scrum process model.

3. Chosen process model Techniques

We choose DSDM process model. In DSDM process model Functional/requirement varies. Time & resources are fixed.

Some DSDM model techniques are

Flexibility: In "traditional" development practice, a lot of time is spent in getting from the 80% solution to the total solution, with the assumption that no step ever needs to be revisited. The result is either projects that are delivered late and over budget or projects that fail to meet the business needs since time is not spent reworking the requirements.

DSDM assumes that all previous steps can be revisited as part of its iterative approach. Therefore, the current step need be completed only enough to move to the next step, since it can be finished in a later iteration.

Timeboxing: Time between start and end of an activity. DSDM uses nested timeboxes, giving a series of fixed deadlines. Ideally 2 - 4 weeks in length. Objective is to have easiest 80% produced in each timebox. Remaining 20% potentially carried forward subsequent timeboxes. It Focus on the essentials. Helps in estimating and providing resources

Prototyping: Prototypes are necessary in DSDM because. Speeds up the development process and increases confidence that the right solution will be delivered. Prototypes provide the mechanism through which users can ensure that the detail of the requirements is correct