

Tournament System Design

Registration Process

- **Groups** of five register, filling out a form with their information.
- Initially, the **status** is "unchecked," indicating they are in the queue.
- The system accommodates a set number of groups (e.g., 10 groups).
- Once the limit is reached, the system stops accepting registrations (**overflow**).

Check-in and Matching

- After registration, the **status** updates to "check-in" automatically.
- Players can view this status in their profile.
- The system **auto-sorts** and matches players for competitions (e.g., 5 vs. 5).
- Matching is done to achieve a balanced competition.

Competition and Results

- Groups compete, and the system records the **outcome** (win or lose).
- The system updates the **status** to reflect the results of the first match.

Flowchart Design

- The process starts with **sign-up/registration**.
- Followed by **check-in**.
- Then progresses to the **tournament**.
- Ultimately displaying the **results**, including top rankings and history.

Admin vs. Player Perspective

- Both players and admins can use the system.
- Admins can perform tasks like removing/replacing players, handling **early bird** registrations, and managing **last-minute check-ins**.
- The system handles player registrations, ensuring tournament readiness.

Database Considerations

- **Sign-up**: Admins manage early bird registrations.
- **Check-in**: Admins can view and sort check-ins.
- Admins need access to all player information, ensuring no attributes are ignored.
- Data is temporarily stored in a queue before being written to a CSV file.

Data Management

- Admins can remove or replace entries in the queue.
- The queue acts as a temporary cache before data is moved to the CSV file.
- **Player ID** should be auto-generated.
- Include a **group ID** to identify which group a player belongs to.

Table Design

- Design a database table to link all relevant information (tournament records, etc.).
- Data should be accessible in multiple ways, including through Excel.

Additional Admin Controls

- Admins set the **time** for check-in.
- Admins define **tournament requirements**, such as group size (e.g., 3 vs. 3, 4 members per group).
- All settings and records are stored in an admin-specific file.

Tournament Type Selection

- The system could allow choosing the **type of tournament**.
- Currently, the focus is on implementing a **group ID** and randomizing **player IDs**.

System Overview

- Roles: [Player](#), [Audience](#), [Admin](#).
- Define the actions each role can perform within the system.

System Overview and Task Management

When designing the system, it's essential to consider the [overall flow](#) and how different components interact.

- The lecture uses a tournament as a metaphor for an entire system. Every part of the tournament must connect until the end. This system may include extras such as adding a ticket for the audience.
- Focus on achieving the four main tasks first. Additional features can be considered if time permits, but ensure the core functionality is smooth and complete.
- When creating a [flowchart](#), visualize the entire system to see the overview and determine the necessary Excel sheets.
- Individual flowcharts for each task can be created and combined.

Tournament Structure

Choose a tournament structure that balances complexity and control.

Binary Tree Tournament

- When thinking of a tournament with a binary tree, think of binary search.
- Teams are organized in groups.
- Determine how teams advance (e.g., top one, top two, top three).

Round Robin Tournament

In a round robin tournament, each team plays against every other team.

- [Complication](#): Round robin can become complicated, especially with a large number of teams.
- [Wins](#): The winner is determined by the number of wins.
- [Recording](#): It's necessary to record wins, losses, and ties for each group.
- [Adding Teams](#): In an open round robin, new teams can be added continuously.
- [Control](#): A round robin requires that the number of players is restricted.

Point System in Round Robin

- Points are awarded for wins.
- After each game, the team is added to a list of competitions until every team is finished.
- After a team loses, they cannot reach the maximum points.
- With the point system, there will be only one team with the most points.

Restricting the Number of Players

- Restricting the number of players is preferable.
- Limit the total number of teams to simplify the system.

Data Recording

- The system should primarily record data.
- Focus on making the system work with fake data and recording everything.
There is no need to show how the tournament progresses.