Ludo Ladder Game

COMPUTER NETWORKING

Time: 60 mins

Introduction

In this class, we will complete the Ludo Ladder game and display the winner's name on the game board.

New Commands Introduced

- eval(): allows you to evaluate arbitrary Python expressions from a string-based input.
- sleep(): suspends execution of the current thread for a given number of seconds.

Vocabulary

- No new vocabulary

Learning Objectives

Student/s should be able to:

- ***Recall*** how to create a text label on the game canvas.
- ***Recall*** how to send and receive messages between server and client using socket programming.
- ***Demonstrate*** how to display the player names and winner on the game board.

Activities

1. **Class Narrative:** *(3 mins)*
    - Brief the student/s that they would complete the game mechanics and add the labels to show player names and the winner name on the game canvas.
2. **Concept Introduction Activity:** *(4 mins)*
    - Let the student/s undertake the explore-activity to observe the final game window of the ludo ladder game.
    - Using the slides, explain that the student/s will learn:
        - to add different color labels to the board
        - to display the player names in the label
        - to display the winning message

3. **Activity 1: Add Player Name Labels** *(14 mins)*

   Teacher Activity: *(7 mins)*

   - Recall the code that is used to add the game name text label using the quiz.
   - Explain how two labels of different colors will be used for displaying player names.
   - Demonstrate how to create the labels and set initial value to “player no: Joining:”.

   Student Activity: *(7 mins)*

   - Guide the student/s to create two labels and set their value to “Player1: Joining” and “Player2: Joining”.

4. **Activity 2: Display Player Names** *(12 mins)*

   Teacher Activity: *(6 mins)* .

   - Explain to the student(s) that to update the player names on the game board, the server should store the list of players joining the game and send it to the client.
   - Demonstrate how to send the player list to clients and display them on the game canvas.

   Student Activity: *(6 mins)*

   - Guide the student/s to store the list of players on the server, send it to clients, display them on the canvas.

5. **Activity 3: Display the Winner** *(12 mins)*

   Teacher Activity: *(6 mins)*

   - Explain to the student(s) the flow of information from the winner to all the clients.
   - Explain how to customize the color and text of the winning message basis which player has won the game.
   - Demonstrate how to add a winning text label and display the text in it when a player wins the game.

   Student Activity: *(6 mins)*

   - Guide the students to add the winning text label and display the winner on the game canvas.

6. **Introduce the Post class project:** *(2 min)*

   - Display the name of the winner in the tambola game.

7. **Test and Summarize the class learnings:** *(5 mins)*

- Check for understanding through quizzes and summarize learning after respective activities.
- Summarize the overall class learning towards the end of the class.

8. **Additional activities:**
    - Encourage the student/s to add the labels for displaying players' scores.
    - Encourage the student/s to add a restart button in the game.

9. **State the Next Class Objective:** *(1 min)*
    - In the next class, student/s will build a remote mouse controller using networking.

U.S. Standards:

CSTA: 2-AP-11, 2-AP-12, 2-AP-13, 2-AP-14, 2-AP-19

Links Table		
Activity	**Activity Name**	**Link**
Class Presentation	Ludo Ladder Game	https://s3-whjr-curriculum-uploads.whjr.online/ea0cbf11-2a6f-414c-8e85-08bc07043069.html
Explore Activity	Ludo Ladder Game	https://github.com/Tynker-Computer-Networks/TNK-M15-C116-SAS-BP
Teacher Activity 1	Add Player Name Labels	https://github.com/Tynker-Computer-Networks/TNK-M15-C116-TAS-BP
Teacher Reference: Teacher Activity 1 Solution	Add Player Name Labels	https://github.com/Tynker-Computer-Networks/TNK-M15-C116-TAS
Student Activity 1	Add Player Name Labels	https://github.com/Tynker-Computer-Networks/TNK-M15-C116-SAS-BP
Teacher Reference: Student Activity 1 Solution	Add Player Name Labels	https://github.com/Tynker-Computer-Networks/TNK-M15-C116-SAS
Teacher Activity 2	Display Player Names	https://github.com/Tynker-Computer-Networks/TNK-M15-C116-TAS-BP
Teacher Reference: Teacher Activity 2 Solution	Display Player Names	https://github.com/Tynker-Computer-Networks/TNK-M15-C116-TAS
Student Activity 2	Display Player Names	https://github.com/Tynker-Computer-Networks/TNK-M15-C116-SAS-BP
Teacher Reference: Student Activity 2 Solution	Display Player Names	https://github.com/Tynker-Computer-Networks/TNK-M15-C116-SAS

Teacher Activity 3	Display the Winner	https://github.com/Tynker-Computer-Networks/TNK-M15-C116-TAS-BP
Teacher Reference: Teacher Activity 3 Solution	Display the Winner	https://github.com/Tynker-Computer-Networks/TNK-M15-C116-TAS
Student Activity 3	Display the Winner	https://github.com/Tynker-Computer-Networks/TNK-M15-C116-SAS-BP
Teacher Reference: Student Activity 3 Solution	Display the Winner	https://github.com/Tynker-Computer-Networks/TNK-M15-C116-SAS
Student's Additional Activity 1	Add Players' Scores	https://github.com/Tynker-Computer-Networks/TNK-M15-C116-SAS-BP
Teacher Reference: Student's Additional Activity 1 Solution	Add Players' Scores	https://github.com/Tynker-Computer-Networks/TNK-M15-C116-SAS
Student's Additional Activity 2	Add the Reset Button	https://github.com/Tynker-Computer-Networks/TNK-M15-C116-SAS-BP
Teacher Reference: Student's Additional Activity 2 Solution	Add the Reset Button	https://github.com/Tynker-Computer-Networks/TNK-M15-C116-SAS
Post Class Project	Tambola Game	https://github.com/Tynker-Computer-Networks/TNK-M15-C116-PCP-BP
Teacher Reference: Post Class Project Solution	Tambola Game	https://github.com/Tynker-Computer-Networks/TNK-M15-C116-PCP