GAME MECHANICS-3

COMPUTER NETWORKING

Time: 60 mins

Introduction

In this class, the student/s will move the player pieces and color the current and finishing box in the game.

New Commands Introduced

- `canvas2.itemconfigure(dice, fill="red")` — Configures the die item on the canvas to red color dynamically
- `boxes[steps].configure(bg=color)` — Configures the background color for the boxes at the time of object creation
- `box.cget("bg")` — Retrieves the current value of the attribute

Vocabulary

- **Finishing box** is where a player's die roll lands its piece on the home box and the game is considered to be completed.

Learning Objectives

Student/s should be able to:

- ***Recall*** how to assign a random number on rolling a dice and print it.
- ***Explain*** how to configure the color for dice, player position and finishing box.
- ***Demonstrate*** the player movement.

Activities

1. **Class Narrative:** *(3 mins)*
    - Brief the student/s, that after creating a game board, the player pieces should move on rolling the die.
2. **Concept Introduction Activity:** *(4 mins)*

- Let the student/s undertake the explore-activity to observe the die color, player's current position and finishing box on reaching it changes to the color of the player.
- Using the slides, explain that the student/s will learn:
    - to print the value on die
    - to set the die and player color
    - to color the current and finishing box

3. **Activity 1: Print the value on Dice** *(14 mins)*

    Teacher Activity: *(7 mins)*

- Recall configuring the dice with a value on its value
- Explain storing the value of the dice face and print it on rolling the dice.

    Student Activity: *(7 mins)*

- Guide the student/s to roll the dice and print the value on the face of the dice.

4. **Activity 2: Set the Dice and Player Color** *(12 mins)*

    Teacher Activity: *(6 mins)* .

- Explain that on rolling a dice, dice and player position should display its respective color.
- Demonstrate how to update the player's position on the game board based on the dice value and the color assigned to a player for the left boxes.

    Student Activity: *(6 mins)*

- Guide the student/s to move and configure the dice and player color for the right boxes and player to yellow.

5. **Activity 3: Color the Current and Finishing Box** *(12 mins)*

    Teacher Activity: *(6 mins)*

- Let the student/s notice that all the boxes are colored from the start as the dice is rolled.
- Explain how the player piece can be moved ahead of the previous position by the number of steps based on value on the dice and then highlight it.
- Explain coloring the die, recoloring previous position and coloring the current position of the player.

- Explain how the player should move only when the index position is less than the length of the boxes or reaching the finishing box. Explain how to color the finishing box on reaching it.

  Student Activity: *(6 mins)*

- Guide the students to debug the code to move the player ahead of the previous index position.
- Guide the students to move the player only if it's before the finishing box and then color the finishing box.

6. **Introduce the Post class project:** *(2 min)*
   - Highlight the current player position.
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 assign the player's color to the starting boxes.
   - Encourage the student/s to color all the boxes covered by the player till the latest index position.
9. **State the Next Class Objective:** *(1 min)*
   - In the next class, student/s will add player labels and winning notification.

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	Game Mechanics-3	https://s3-whjr-curriculum-uploads.whjr.online/2e9fd136-ecb1-4b9c-8943-53550241c78e.html
Explore Activity	Game Mechanics-3	https://github.com/Tynker-Computer-Networks/TNK-M15-C115-SAS-BP
Teacher Activity 1	Print the Value on Dice	https://github.com/Tynker-Computer-Networks/TNK-M15-C115-TAS-BP
Teacher Reference: Teacher Activity 1 Solution	Print the Value on Dice	https://github.com/Tynker-Computer-Networks/TNK-M15-C115-TAS

Student Activity 1	Print the Value on Dice	https://github.com/Tynker-Computer-Networks/TNK-M15-C115-SAS-BP
Teacher Reference: Student Activity 1 Solution	Print the Value on Dice	https://github.com/Tynker-Computer-Networks/TNK-M15-C115-SAS
Teacher Activity 2	Set the Dice and Player Color	https://github.com/Tynker-Computer-Networks/TNK-M15-C115-TAS-BP
Teacher Reference: Teacher Activity 2 Solution	Set the Dice and Player Color	https://github.com/Tynker-Computer-Networks/TNK-M15-C115-TAS
Student Activity 2	Set the Dice and Player Color	https://github.com/Tynker-Computer-Networks/TNK-M15-C115-SAS-BP
Teacher Reference: Student Activity 2 Solution	Set the Dice and Player Color	https://github.com/Tynker-Computer-Networks/TNK-M15-C115-SAS
Student Activity 3.1	Color the Current and Finishing Box	https://github.com/Tynker-Computer-Networks/TNK-M15-C115-SAS-BP
Teacher Reference: Student Activity 3.1 Solution	Color the Current and Finishing Box	https://github.com/Tynker-Computer-Networks/TNK-M15-C115-SAS
Teacher Activity 3	Color the Current and Finishing Box	https://github.com/Tynker-Computer-Networks/TNK-M15-C115-TAS-BP
Teacher Reference: Teacher Activity 3 Solution	Color the Current and Finishing Box	https://github.com/Tynker-Computer-Networks/TNK-M15-C115-TAS
Student Activity 3.2	Color the Current and Finishing Box	https://github.com/Tynker-Computer-Networks/TNK-M15-C115-SAS-BP
Teacher Reference: Student Activity 3.2 Solution	Color the Current and Finishing Box	https://github.com/Tynker-Computer-Networks/TNK-M15-C115-SAS
Student's Additional Activity 1	Color the Starting Box	https://github.com/Tynker-Computer-Networks/TNK-M15-C115-SAS-BP
Teacher Reference: Student's Additional Activity 1 Solution	Color the Starting Box	https://github.com/Tynker-Computer-Networks/TNK-M15-C115-SAS
Student's Additional Activity 2	Color the Boxes Covered	https://github.com/Tynker-Computer-Networks/TNK-M15-C115-SAS-BP
Teacher Reference: Student's Additional Activity 2 Solution	Color the Boxes Covered	https://github.com/Tynker-Computer-Networks/TNK-M15-C115-SAS
Post Class Project	TAMBOLA STAGE - 3	https://github.com/Tynker-Computer-Ne

		tworks/TNK-M15-C115-PCP-BP
Teacher Reference: Post Class Project Solution	TAMBOLA STAGE - 3	https://github.com/Tynker-Computer-Networks/TNK-M15-C115-PCP