Topic	GAME STATE AND TWO PLAYER GAME	
Class Description	**Students learn to store the state(mode) of a game in a variable. Students assign different behaviour to the objects in the game depending on the state of the game.**	
Class	**PRO-C6**	
Class time	**45 mins**	
Goal	• Store the state(mode) of a game in a variable. • Display different information on the screen according to the state of the game. • Use conditional programming and logical operators to assign different behaviors to the objects in the game depending on the state (mode) of the game.	

Resources Required	• Teacher Resources
	  ○ Code.org login
	  ○ Laptop with internet connectivity
	  ○ Earphones with mic
	  ○ Notebook and pen
	• Student Resources
	  ○ Code.org login
	  ○ Laptop with internet connectivity
	  ○ Earphones with mic
	  ○ Notebook and pen	

Class structure	**Warm Up - Slide show option** **Teacher-Led Activity** **Student-Led Activity** **Wrap Up - Slide show option**	**15 Mins** **8 Mins** **30 Mins** **5 Mins**
WARM UP SESSION - 15mins		

© 2019 - WhiteHat Education Technology Private Limited.
Note: This document is the original copyright of WhiteHat Education Technology Private Limited.
Please don't share, download or copy this file without permission.

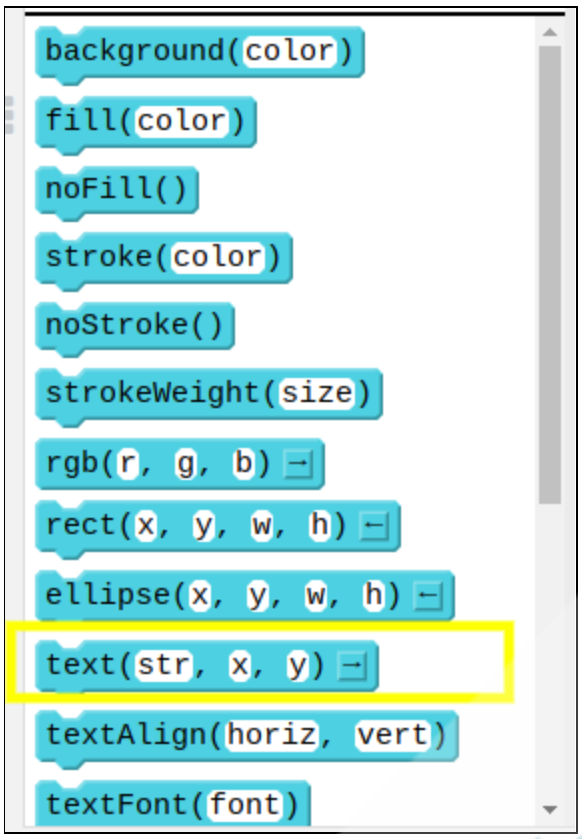
Teacher starts slideshow  from slides 1 to 11 Refer to speaker notes and follow the instructions on each slide.	
Activity details	**Solution/Guidelines**
Hey <student name>. How are you? Nice to see you! Let's learn something new today, but before we start, do you remember what we are going to learn today? **Run the presentation from slide 1 to slide 7** **Following are the warm up session deliverables:** • Connecting students to the previous class. • Explain the state of a game through different example games. • Relate the concept of game state as a variable used to control different stages of the game.	**ESR**: Hi, thanks, yes! *Student recalls from the last class what the teacher mentioned regarding what will be covered in the upcoming session.* Click on the slide show tab and present the slides.
QnA Session	
Question	**Answer**
Which operator means 'or'? A. && B. != C. || D. @=	**C.**
Continue the warm up session	
Activity details	**Solution/Guidelines**
Run the presentation from slide 8 to slide 11 to set the problem statement.	Narrate the story by using hand gestures and voice modulation methods to bring

© 2019 - WhiteHat Education Technology Private Limited.
Note: This document is the original copyright of WhiteHat Education Technology Private Limited.
Please don't share, download or copy this file without permission.

Following are the warm up session deliverables: ● Explain the transition from serve to play states involved in the beginning of the game.	in more interest in students.
Teacher ends slideshow 	
TEACHER-LED ACTIVITY - 8mins	
Teacher Initiates Screen Share	
CHALLENGE	

Activity details		**Solution/Guidelines**
Step 2: Teacher-led Activity (15 min)	Let's open the game we created in the last class. *Teacher opens Teacher Activity Link 1 (Pong Stage 2.5)* We press 'space' here to start the game. Do you think we should put this information on the screen somewhere so that the player knows what to do? How do we do that? What instruction do we use?	**ESR:** "Yes!" **ESR:** text() instruction?

© 2019 - WhiteHat Education Technology Private Limited.
Note: This document is the original copyright of WhiteHat Education Technology Private Limited.
Please don't share, download or copy this file without permission.

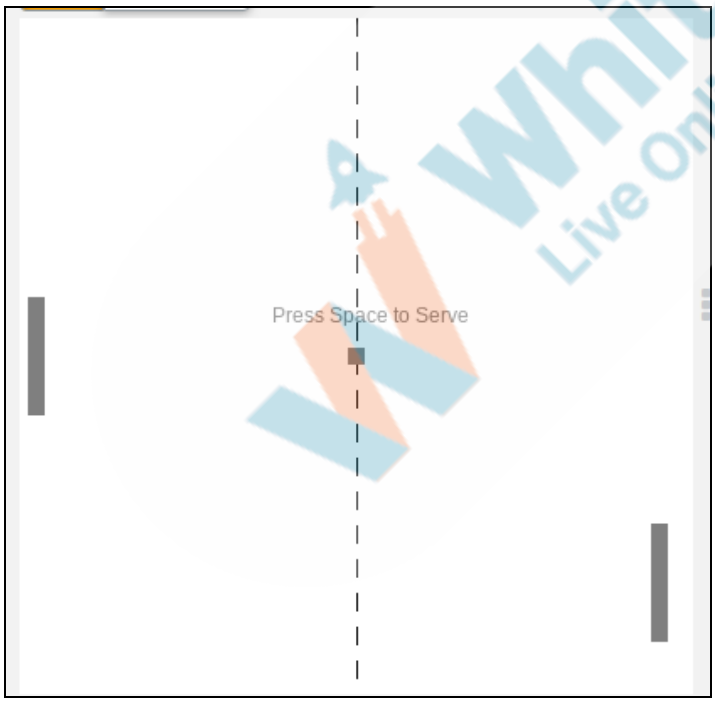


	Let's do that. Let's add a text() instruction near the center which says "Press Space to serve the ball" *Teacher writes code to place a text in the center and runs the code.*	*The student observes and learns.*

© 2019 - WhiteHat Education Technology Private Limited.
Note: This document is the original copyright of WhiteHat Education Technology Private Limited.
Please don't share, download or copy this file without permission.

```
1  //create the ball, playerPaddle and computerPaddle as sprite o
2  var ball = createSprite(200,200,10,10);
3  var playerPaddle = createSprite(380,200,10,70);
4  var computerPaddle = createSprite(10,200,10,70);
5
6
7  function draw() {
8    //clear the screen
9    background("white");
10
11   text("Press Space to Serve",150,180);
12
13   //make the player paddle move with the mouse's y position
14   playerPaddle.y = World.mouseY;
15
16   //AI for the computer paddle
17   //make it move with the ball's y position
18   computerPaddle.y = ball.y;
```

Output:



© 2019 - WhiteHat Education Technology Private Limited.
Note: This document is the original copyright of WhiteHat Education Technology Private Limited.
Please don't share, download or copy this file without permission.

	We have an information text in the center now. But do you see a problem? *Teacher starts playing the game after pressing serve.* Yes! And there is another problem which we didn't notice earlier. If you press 'space' anywhere in the game, the ball's speed and direction changes to what it is while serving the ball. *Teacher shows this while playing the game.*	**ESR:** The text in the center does not disappear when the game starts. *Student observes.*
	We don't want this to happen, do we? But that's exactly what we have told the computer to do using the function serve(). Remember? WHENEVER the space key is pressed, we serve the ball and we ask the computer to change the velocity of the ball to 3 in x-direction and 4 in the y-direction. And the computer is doing exactly that.	**ESR:** No **ESR:** Yes!
	So how do we give the instruction to the computer to serve the ball and display text only before the game starts. Any ideas?	**ESR:** *varied (Help the student recall details about conditional programming)*

© 2019 - WhiteHat Education Technology Private Limited.
Note: This document is the original copyright of WhiteHat Education Technology Private Limited.
Please don't share, download or copy this file without permission.

	Remind the student about last class and how they instructed the computer to follow instructions only when certain 'conditions' were met.	
	If you look at the finished game, you will realize that our game has 3 different states (modes). *Teacher opens the finished Pong game (Full Pong game) from the activity link and shows the game while explaining the states (modes).* *Note- Teacher can also give an example of any other real world game to explain the states (modes) of the game. Every game has 3 modes in common the* *1) The Initial Mode where the game objects are at rest.* *2) The Play Mode where the game is played.* *3) The GameOver Mode where the game comes to an halt.* ***This States or Modes always follow the same order as given above.*** ● The first state (mode) is when the ball is at the center and the user needs to press "Space" to serve the ball. We can call this state in the game **"SERVE" STATE (Mode)**.	*The student listens, observes and learns.*

© 2019 - WhiteHat Education Technology Private Limited.
Note: This document is the original copyright of WhiteHat Education Technology Private Limited.
Please don't share, download or copy this file without permission.

	• The second state (mode) is when the play starts, and the ball is in motion. We can call this state (mode) in the game **"PLAY" STATE(Mode)**. When the ball goes off the screen and any one player scores, the state or the mode of the game changes from PLAY state(mode) to SERVE state(mode). That means as soon as we score we bring the ball back to the centre to start again. • The third state(mode) is when the player or computer scores 5 points. The game then ends and the player needs to press "R" to restart the game. We can call this **"GAME OVER" STATE (Mode)**. The objects in the game behave differently at different stages. Even Information displayed is different at different stages. We can store the information about the state(mode) of a game and use conditional programming to instruct the computer to behave differently for different state (mode)s.	
	How do you think we can store information about the state (mode)(mode) of the game?	**ESR:** Using variables?

© 2019 - WhiteHat Education Technology Private Limited.
Note: This document is the original copyright of WhiteHat Education Technology Private Limited.
Please don't share, download or copy this file without permission.

	What does variable do? Yes! Let's create a variable called **gamestate (mode)** and give it a starting state (mode) of "serve". Whenever we are storing any text inside a variable we put it inside " ". *Teacher writes code to create a variable called **gameState**.*	**ESR:** It takes up some space in the computer's memory and stores the value we have allocated there.

```
1  //create the ball, playerPaddle and computerPaddle as sprite objects
2  var ball = createSprite(200,200,10,10);
3  var playerPaddle = createSprite(380,200,10,70);
4  var computerPaddle = createSprite(10,200,10,70);
5
6  var gameState = "serve";
7
8  function draw() {
9    //clear the screen
10   background("white");
11
12   text("Press Space to Serve",150,180);
13
14   //make the player paddle move with the mouse's y position
15   playerPaddle.y = World.mouseY;
16
17   //AI for the computer paddle
18   //make it move with the ball's y position
19   computerPaddle.y = ball.y;
20
21   //draw line at the centre
22   for (var i = 0; i < 400; i=i+20) {
23     line(200,i,200,i+10);
24   }
25
26
27   //create edge boundaries
28   //make the ball bounce with the top and the bottom edges
29   createEdgeSprites();
30   ball.bounceOff(topEdge);
31   ball.bounceOff(bottomEdge);
```

© 2019 - WhiteHat Education Technology Private Limited.
Note: This document is the original copyright of WhiteHat Education Technology Private Limited.
Please don't share, download or copy this file without permission.

	Now we have a variable called gameState which has information about the state(mode) of the game. How do we tell the computer to display "Press Space to serve" only when the game is in the ‘serve state’?	**ESR:** We use conditional programming. If gameState (mode)is “serve”, then display text.
	Exactly! And we do it like this: *Teacher writes code to display text only when the game state is in "Serve" state.* *Teacher mentions that for comparing two values, we use three = signs in Javascript.*	*The student observes and learns.*

© 2019 - WhiteHat Education Technology Private Limited.
Note: This document is the original copyright of WhiteHat Education Technology Private Limited.
Please don't share, download or copy this file without permission.

```
1  //create the ball, playerPaddle and computerPaddle as sprite objects
2  var ball = createSprite(200,200,10,10);
3  var playerPaddle = createSprite(380,200,10,70);
4  var computerPaddle = createSprite(10,200,10,70);
5
6  var gameState = "serve";
7
8  function draw() {
9    //clear the screen
10   background("white");
11
12   //place info text in the center
13   if (gameState === "serve") {
14     text("Press Space to Serve",150,180);
15   }
16
17   //make the player paddle move with the mouse's y position
18   playerPaddle.y = World.mouseY;
19
20   //AI for the computer paddle
21   //make it move with the ball's y position
22   computerPaddle.y = ball.y;
23
24   //draw line at the centre
25   for (var i = 0; i < 400; i=i+20) {
26     line(200,i,200,i+10);
27   }
28
29
30   //create edge boundaries
31   //make the ball bounce with the top and the bottom edges
```

	We also want the game state (mode) to change after the user presses space. What do we want the new game state (mode) to be? Let's change the gameState variable to "play" after the space key is pressed. Remember the values inside the variables can change! That's why they are called "variables" *Teacher writes and runs code.*	**ESR:** PLAY state? *The student observes and learns.*

© 2019 - WhiteHat Education Technology Private Limited.
Note: This document is the original copyright of WhiteHat Education Technology Private Limited.
Please don't share, download or copy this file without permission.

	Does the display text disappear when the space key is pressed? This is because the game state (mode) changes when the space key is pressed and we have asked the computer to display text only when the game state (mode) is in 'serve state (mode)'.	**ESR:** Yes

```
28
29
30  //create edge boundaries
31  //make the ball bounce with the top and the bottom edges
32  createEdgeSprites();
33  ball.bounceOff(topEdge);
34  ball.bounceOff(bottomEdge);
35  ball.bounceOff(playerPaddle);
36  ball.bounceOff(computerPaddle);
37
38
39  //serve the ball when space is pressed
40  if (keyDown("space")) {
41    serve();
42    gameState = "play";
43  }
44
45
46  //reset the ball to the centre if it crosses the screen
47  if(ball.x > 400 || ball.x <0) {
48    reset();
49  }
```

	There is still another problem though. Pressing space at any point of time changes the speed and direction of the ball. We want to give speed and direction to the ball only when the user presses space in the 'serve state (mode).'	

© 2019 - WhiteHat Education Technology Private Limited.
Note: This document is the original copyright of WhiteHat Education Technology Private Limited.
Please don't share, download or copy this file without permission.

	How do we do that? We can instruct the computer as follows: If the user presses space AND the game is in SERVE state (mode), then serve the ball. In computer programming , we use 2 **“&”** signs to say **AND**. Let's add these two conditions to our code to serve the ball. *Teacher writes and runs the code.* *Teacher presses "space" while the game is in play mode to show that the ball is not changing direction mid-way now.*	**ESR:** We put one more condition to check if the game state (mode) is in ‘serve state (mode)’.

© 2019 - WhiteHat Education Technology Private Limited.
Note: This document is the original copyright of WhiteHat Education Technology Private Limited.
Please don't share, download or copy this file without permission.

```
19
20  //AI for the computer paddle
21  //make it move with the ball's y position
22  computerPaddle.y = ball.y;
23
24  //draw line at the centre
25  for (var i = 0; i < 400; i=i+20) {
26    line(200,i,200,i+10);
27  }
28
29
30  //create edge boundaries
31  //make the ball bounce with the top and the bottom edges
32  createEdgeSprites();
33  ball.bounceOff(topEdge);
34  ball.bounceOff(bottomEdge);
35  ball.bounceOff(playerPaddle);
36  ball.bounceOff(computerPaddle);
37
38
39  //serve the ball when space is pressed
40  if (keyDown("space") && gameState === "serve") {
41    serve();
42    gameState = "play";
43  }
44
45
46  //reset the ball to the centre if it crosses the screen
47  if(ball.x > 400 || ball.x <0) {
48    reset();
49  }
```

Awesome, this information about game states is really powerful and can help us give different behaviour to different objects in the game at different points.

You must have played games where the character can do different things depending on the stage of the game at which they are. We do this using the concept of game state.

© 2019 - WhiteHat Education Technology Private Limited.
Note: This document is the original copyright of WhiteHat Education Technology Private Limited.
Please don't share, download or copy this file without permission.

	Our game still has a little problem though. Once the ball crosses the screen, we no longer can press "space" to serve the ball again because the gameState variable is still in "play" state (mode).	*Student listens to the task.*
Teacher starts slideshow  **:Slide 12-13 (Only 1 slide for this Activity)**		
Run the presentation slide to set the student activity context.		
So here's your challenge for today: • Change the game state (mode) to SERVE if, ball crosses the screen. • Build the scoring system for the game. • Write code for the third state (mode) - Game over state (mode). Do you think you can take up the challenge?		**ESR:** Ok. Yes, I can try.
Sounds great! I will be here to guide you through this. Let's get started.		*The student shares his/her screen, opens the Student Activity, remixes the code and adds more code to it.*
Teacher ends slideshow 		
Teacher Stops Screen Share		
STUDENT-LED ACTIVITY - 8mins		
• **Ask Student to press ESC key to come back to panel**		

© 2019 - WhiteHat Education Technology Private Limited.
Note: This document is the original copyright of WhiteHat Education Technology Private Limited.
Please don't share, download or copy this file without permission.

- **Guide Student to start Screen Share**
- **Teacher gets into Fullscreen**

ACTIVITY

- **The student displays different text information on the screen depending on the state of the game.**
- **The student builds the scoring system in the game.**
- **The student assigns different behavior to different objects in the game depending on the state of the game.**

Step 3: Student-Led Activity (15 min)	*Guide the student to change the gameState variable back to "serve" state (mode) inside the condition when the ball crosses the screen.* *Observe the student for any typos.*	*Student opens Student Activity Link 1* *Student changes the gameState back to "serve" state (mode) when the ball crosses the screen.* *The student runs the code to see if the result is as desired.*

```
30  //create edge boundaries
31  //make the ball bounce with the top and the bottom edges
32  createEdgeSprites();
33  ball.bounceOff(topEdge);
34  ball.bounceOff(bottomEdge);
35  ball.bounceOff(playerPaddle);
36  ball.bounceOff(computerPaddle);
37
38
39  //serve the ball when space is pressed
40  if (keyDown("space") && gameState === "serve") {
41    serve();
42    gameState = "play";
43  }
44
45
46  //reset the ball to the centre if it crosses the screen
47  if(ball.x > 400 || ball.x <0) {
48    reset();
49    gameState = "serve";
50  }
51
```

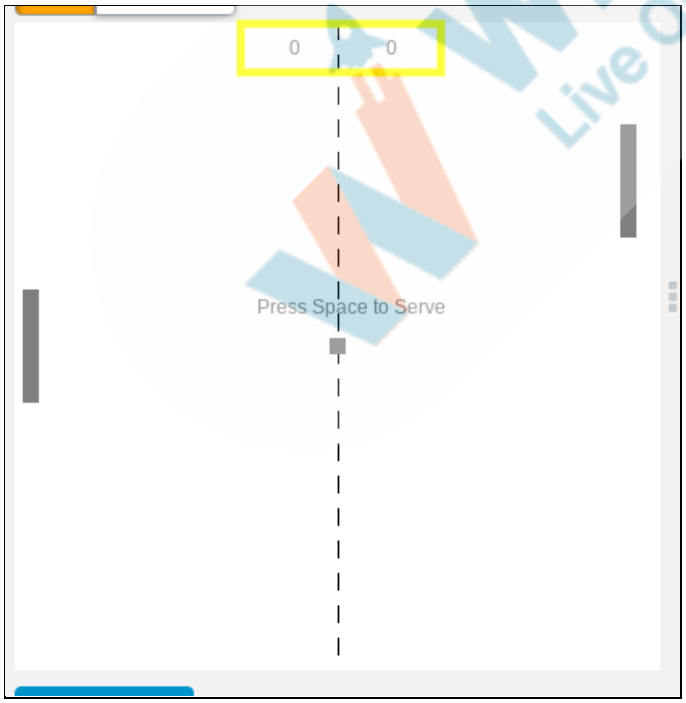
© 2019 - WhiteHat Education Technology Private Limited.
Note: This document is the original copyright of WhiteHat Education Technology Private Limited.
Please don't share, download or copy this file without permission.

	"Awesome, that was easy. Let's build the scoring system in our game."	
	"I think we would need two variables to store the score for the computer and the player" *Guide the student to create two variables called compScore (to store the score for the computer) and playerScore (to store the score for the player). Give the initial value of 0 to each of these variables.* Also, let's display the scores on the screen. *Observe the student for typos while writing code.*	*Student creates two variables **compScore** and **playerScore** and assigns the value 0 to them.*

© 2019 - WhiteHat Education Technology Private Limited.
Note: This document is the original copyright of WhiteHat Education Technology Private Limited.
Please don't share, download or copy this file without permission.

```
1  //create the ball, playerPaddle and computerPaddle as sprite objects
2  var ball = createSprite(200,200,10,10);
3  var playerPaddle = createSprite(380,200,10,70);
4  var computerPaddle = createSprite(10,200,10,70);
5
6  var gameState = "serve";
7
8  var computerScore = 0;
9  var playerScore = 0;
10
11 function draw() {
12   //clear the screen
13   background("white");
14
15   //place info text in the center
16   if (gameState === "serve") {
17     text("Press Space to Serve",150,180);
18   }
19
20   text(computerScore, 180, 20);
21   text(playerScore, 220, 20);
22
23   //make the player paddle move with the mouse's y position
24   playerPaddle.y = World.mouseY;
25
26   //AI for the computer paddle
```

Output:



© 2019 - WhiteHat Education Technology Private Limited.
Note: This document is the original copyright of WhiteHat Education Technology Private Limited.
Please don't share, download or copy this file without permission.

	"When will the compScore increase?" "What is the value of ball.x when the ball crosses the screen on the right?" Let's add this condition and increase the compScore when the player paddle misses hitting the ball. *Guide the student to add an if condition before the ball is reset.* *Observe the student code for typos.*	**ESR:** when the ball crosses the screen on the right. **ESR:** ball.x > 400 *Student writes code to increase the compScore by 1 if ball.x > 400*

```
40  ball.bounceOff(bottomEdge);
41  ball.bounceOff(playerPaddle);
42  ball.bounceOff(computerPaddle);
43
44
45  //serve the ball when space is pressed
46  if (keyDown("space") && gameState === "serve") {
47    serve();
48    gameState = "play";
49  }
50
51
52  //reset the ball to the centre if it crosses the screen
53  if(ball.x > 400 || ball.x <0) {
54
55    if (ball.x > 400){
56      computerScore = computerScore + 1;
57    }
58    reset();
59    gameState = "serve";
60  }
61
62
63  drawSprites();
64 }
```

© 2019 - WhiteHat Education Technology Private Limited.
Note: This document is the original copyright of WhiteHat Education Technology Private Limited.
Please don't share, download or copy this file without permission.

	"When will the playerScore increase?"	**ESR:** when the ball crosses the screen on the left.
	"What is the value of ball.x when the ball crosses the screen on the left?"	**ESR:** ball.x < 0
	Let's add this condition and increase the playerScore when the computer paddle misses hitting the ball. *Guide the student to add an if condition before the ball is reset.* *Observe the student code for typos.*	*Student writes code to increase the playerScore by 1 if ball.x < 0*

```
39  ball.bounceOff(topEdge);
40  ball.bounceOff(bottomEdge);
41  ball.bounceOff(playerPaddle);
42  ball.bounceOff(computerPaddle);
43
44
45  //serve the ball when space is pressed
46  if (keyDown("space") && gameState === "serve") {
47    serve();
48    gameState = "play";
49  }
50
51
52  //reset the ball to the centre if it crosses the screen
53  if(ball.x > 400 || ball.x <0) {
54
55    if (ball.x > 400){
56      computerScore = computerScore + 1;
57    }
58    if (ball.x < 0){
59      playerScore = playerScore + 1;
60    }
61
62    reset();
63    gameState = "serve";
64  }
```

© 2019 - WhiteHat Education Technology Private Limited.
Note: This document is the original copyright of WhiteHat Education Technology Private Limited.
Please don't share, download or copy this file without permission.

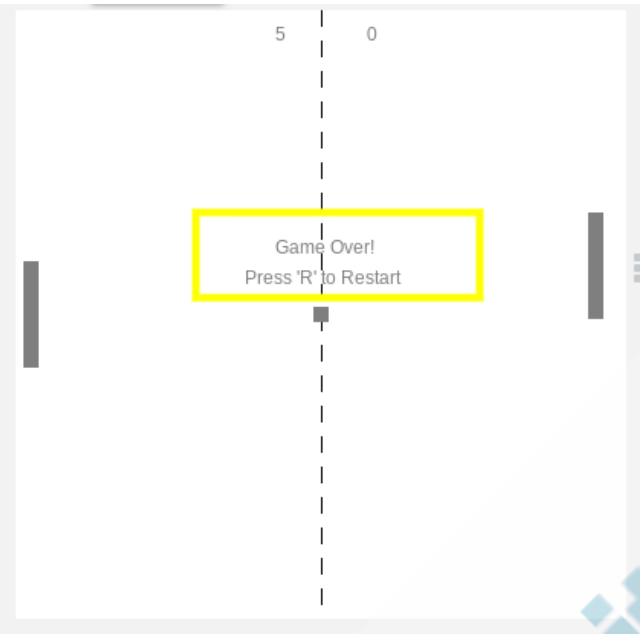
	Awesome! There is just one thing pending now. We want to change the game state to gameOver and display "Game over", when the compScore or playerScore becomes equal to 5. Let's do that. *Guide the student to write an if condition, where "Game over. Press R to restart" is displayed when either compScore or playerScore becomes equal to 5. Change the gameState variable to "over"* *Observe the student code for any typos.*	*Student writes an if condition to change the gameState and display "Game Over. Press R to restart.* *The student runs the code to see if the code gives desired results.*

© 2019 - WhiteHat Education Technology Private Limited.
Note: This document is the original copyright of WhiteHat Education Technology Private Limited.
Please don't share, download or copy this file without permission.

```
45    ball.bounceOff(playerPaddle);
46    ball.bounceOff(computerPaddle);
47
48
49    //serve the ball when space is pressed
50    if (keyDown("space") &&  gameState === "serve") {
51      serve();
52      gameState = "play";
53    }
54
55
56    //reset the ball to the centre if it crosses the screen
57    if(ball.x > 400 || ball.x <0) {
58
59      if(ball.x > 400) {
60        compScore = compScore + 1;
61      }
62
63      if(ball.x < 0) {
64        playerScore = playerScore + 1;
65      }
66
67      reset();
68      gameState = "serve";
69    }
70
71    if (playerScore === 5 || compScore === 5){
72      gameState = "over";
73      text("Game Over!",170,160);
74      text("Press 'R' to Restart",150,180);
75    }
76
77
```

© 2019 - WhiteHat Education Technology Private Limited.
Note: This document is the original copyright of WhiteHat Education Technology Private Limited.
Please don't share, download or copy this file without permission.

Output:



	Amazing, we are almost there. We just need to write code so that the player can press R to restart the game again. We might just want to write an if condition - If key r is pressed and the gameState is 'over', change the game state (mode) to "serve" again. *Guide the student to write an if condition to change the gameState to "serve" if R key is pressed and the gameState is "over". We also need to reset the compScore and playerScore back to 0 again.*	*Student writes the if condition to change the gameState to "serve" and reset the compScore and playerScore when "r" key is pressed.* *The student runs the code*

© 2019 - WhiteHat Education Technology Private Limited.
Note: This document is the original copyright of WhiteHat Education Technology Private Limited.
Please don't share, download or copy this file without permission.

	Observe the student code for any typos.	*to check if they get the desired results.*

```
66
67      reset();
68      gameState = "serve";
69    }
70
71    if (playerScore === 5 || compScore === 5){
72      gameState = "over";
73      text("Game Over!",170,160);
74      text("Press 'R' to Restart",150,180);
75    }
76
77    if (keyDown("r") && gameState === "over") {
78      gameState = "serve";
79      compScore = 0;
80      playerScore = 0;
81    }
82
83    drawSprites();
84  }
85
86  function serve() {
87    ball.velocityX = 3;
88    ball.velocityY = 4;
89  }
90
91  function reset() {
92    ball.x = 200;
93    ball.y = 200;
94    ball.velocityX = 0;
95    ball.velocityY = 0;
96  }
```

	Now, time to create your 2 player game which you can play with your friend here in class today! Can you modify the code so that playerPaddle moves “up” and “down” with the arrow keys and the computer paddle moves with “W” and “S” keys?	

© 2019 - WhiteHat Education Technology Private Limited.
Note: This document is the original copyright of WhiteHat Education Technology Private Limited.
Please don't share, download or copy this file without permission.

		Student codes to modify the game and convert into a 2-player pong game.

```
23  //display scores
24  text(compScore, 170,20);
25  text(playerScore, 230,20);
26
27  if(keyDown("up")){
28    playerPaddle.y = playerPaddle.y - 5;
29  }
30  if(keyDown("down")){
31    playerPaddle.y = playerPaddle.y + 5;
32  }
33
34  if(keyDown("w")){
35    computerPaddle.y = computerPaddle.y - 5;
36  }
37  if(keyDown("s")){
38    computerPaddle.y = computerPaddle.y + 5;
39  }
40  // //make the player paddle move with the mouse's y p
41  // playerPaddle.y = World.mouseY;
42
43  // //AI for the computer paddle
44  // //make it move with the ball's y position
45  // computerPaddle.y = ball.y;
46
```

	Now, you can play the game with your friend. Let's see who wins! After the game, you can collect feedback on what you could do to make the game better and more exciting!!	*Student and his/her friend play the game.* *They exchange feedback on what could make the game more interesting!*

Teacher Guides Student to Stop Screen Share

Quiz time - Click on in-class quiz

Question	**Answer**

© 2019 - WhiteHat Education Technology Private Limited.
Note: This document is the original copyright of WhiteHat Education Technology Private Limited.
Please don't share, download or copy this file without permission.

When does the Game State change to “Over/End”? A. Only when playerPaddle scores 5 points. B. Only when computerPaddle scores 5 points. C. Only when both the Paddles will score 5 points. D. When either of the players score 5 points.	**D.**
When will the gameState change from “serve” to “play”? A. When the player presses the “SPACE” key. B. When the ball will go offscreen from either of the sides C. When the ball comes back to the center. D. None of the above	**A.**
What is the game behaviour in “serve” state? A. Ball not moving B. Computer Paddle not moving C. Text message “PRESS SPACE TO START” is displayed. D. All of the above.	**D.**
End the quiz panel	
WRAP UP SESSION - 5 Mins	
Teacher starts slideshow  **from slide 14 to slide 22**	
Activity details	**Solution/Guidelines**
Run the presentation from slide 14 to slide 22 **Following are the warm up session deliverables:** • **Explain the facts and trivias**	Guide the student to

© 2019 - WhiteHat Education Technology Private Limited.
Note: This document is the original copyright of WhiteHat Education Technology Private Limited.
Please don't share, download or copy this file without permission.

• **Next class challenge** • **Project for the day** • **Additional Activity**		develop the project and share with us.
Teacher ends slideshow 		
FEEDBACK • **Complement the student for her/his effort in the class.** • **Review the content of the lesson.**		
Step 4: **Wrap-Up** **(5 min)**	That was some serious coding in this class today. How are you feeling?	**ESR:** varied
	Let's quickly review what we did today? Can you recollect what we did?	**ESR:** - we learned about game states (modes) - we wrote conditional statements to program the game objects differently for different states (modes). - we built the scoring system in our game.
	We have learned a lot since our first class, haven't we?	**ESR:** Yes!
	You get Hats Off for your excellent work! Next class is going to be really exciting. We are going to add sound and animation to take our game to another level. I can't wait for the next class.	Make sure you have given at least 2 Hats Off during the class for:  

© 2019 - WhiteHat Education Technology Private Limited.
Note: This document is the original copyright of WhiteHat Education Technology Private Limited.
Please don't share, download or copy this file without permission.

		
Project Name: **Air Hockey Battle**	**Goal of the Project:** By Class 6, you have learned to declare a variable and give x and y velocities to it, use of conditional programming, functions, loops, and putting game states in the project. In this project, you will have to practice and apply what you have learned so far and create a scene of a company that makes some innovative games for the kids. **Story:** A company, Crafty Child, focuses on making innovative games for kids. This time they are trying to make a new version of a very popular game which most of you must have played in Malls - Air Hockey! They are trying to make it for a single player. The other player would be a Sensor Robot, which will move according to the striker's moves. The motive is that even if a kid doesn't have a partner to play with, he or she can play against the robot and enjoy the game to the fullest. Can you help Crafty Child create this new interesting game?	*Students engage with the teacher over the project.*

© 2019 - WhiteHat Education Technology Private Limited.
Note: This document is the original copyright of WhiteHat Education Technology Private Limited.
Please don't share, download or copy this file without permission.

	I am very excited to see your project solution and I know you will do really well. Bye Bye!	
Teacher Clicks 		

Activity	Activity Name	Links
Teacher Activity Link 1	Pong Stage 2.5	https://studio.code.org/projects/gamelab/7PzOKNqtfTVe_xwPVqVNfAWbDHuj511ajGLEdvQ9KXA/edit
Teacher Activity Link 2	FULL CODE after the class (Reference Link)	https://studio.code.org/projects/gamelab/YcJY7JiRSSvcStWD6_5k3RXkbFslPLOiDjYsk7LQyGQ/edit
Student Activity Link 1	Pong Stage 2.7	https://studio.code.org/projects/gamelab/2IKwookMXeJhcsolgWIRhh_Qc3JYw3n32BBA

© 2019 - WhiteHat Education Technology Private Limited.
Note: This document is the original copyright of WhiteHat Education Technology Private Limited.
Please don't share, download or copy this file without permission.

		V1IBxWs/edit
Teacher Reference visual aid link	Visual aid link	https://curriculum.whitehatjr.com/Visual+Project+Asset/PRO_VD/C6+with+clue.html
Teacher Reference In-class quiz	In-class quiz	https://curriculum.whitehatjr.com/Visual+Project+Asset/PRO_VD/Pro-C6_Deeepali.docx.pdf
Project Solution	Air Hockey Battle	https://studio.code.org/projects/gamelab/OCjnt73i_E0xn4ERsL8iZumr4HiEzlwInjbPbOayzrY

© 2019 - WhiteHat Education Technology Private Limited.
Note: This document is the original copyright of WhiteHat Education Technology Private Limited.
Please don't share, download or copy this file without permission.