PROFESSIONAL

AIR HOCKEY BATTLE

INSTRUCTIONS:

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.

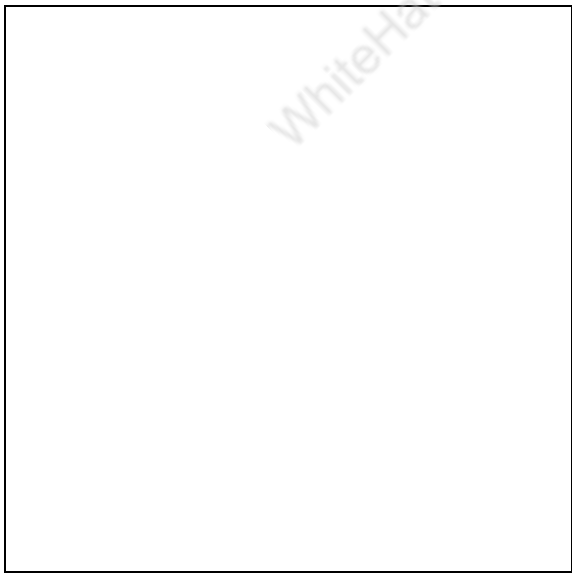
In this project, you will have to practice and apply what you have learned so far and create a scene of a company that makes some innovative games for the kids.

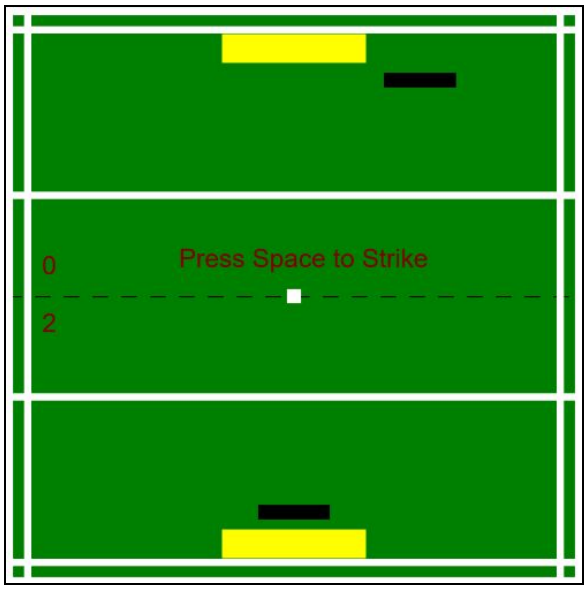
Story:

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 moves made by the striker. 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?





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***This is just for your reference. We expect you to apply your own creativity in the project.**

Getting Started:

1. Login to code.org
2. Click on the following link: Project Template
3. Click on “View Code”.
4. Click on “Remix”.
5. Rename the project to **Project 6** and click on **Save**.

Specific Tasks to complete the Project:

1. Draw the **boundaries** for the game - outer boundary and inner boundary.
2. Create **edge sprites**.
3. Create yellow **Goal sprites.**

```
var goal1=createSprite(200,28,100,20);
goal1.shapeColor=("yellow");
var goal2=createSprite(200,372,100,20);
goal2.shapeColor=("yellow");
```

4. Create three sprites - **Striker**, computer paddle called the **CompMallet** and player paddle named the **PlayerMallet**.
    - The width of the paddles is half the size of the goal.

```
// creating objects and giving them colours
var striker = createSprite(200,200,10,10);
striker.shapeColor = "white";

var playerMallet = createSprite(200,50,50,10);
playerMallet.shapeColor = "black";

var computerMallet = createSprite(200,350,50,10);
computerMallet.shapeColor = "black";
```

5. PlayerMallet moves with the **Left, Right, Up** and **Down** arrow keys.

```
//make the player paddle move with the Arrow keys

 if(keyDown("left")){
 playerMallet.x = playerMallet.x-10

}
if(keyDown("right")){
  playerMallet.x = playerMallet.x+10

}
if(keyDown("up")){
 if(playerMallet.y>25)
 {
  playerMallet.y = playerMallet.y- 10;
 }
}
if(keyDown("down")){

 if(playerMallet.y<120)
 {
  playerMallet.y = playerMallet.y+10;
 }
}
```

6. Position of ComputerMallet will follow the X-position of the striker.

```
//AI for the computer paddle
//make it move with the striker's y position
computerMallet.x = striker.x;
```

7. Use a **for loop** to create a **centerline**.

8. To calculate if a goal has been made:
   - The collision of the striker with the goal posts has to be checked and
   - Either the payer score or computer score needs to be updated.

```
// Score
if(striker.isTouching(goal1) || striker.isTouching(goal2) )
{
  if(striker.isTouching(goal1))
    {
      compScore = compScore + 1;
    }

    if(striker.isTouching(goal2))
    {
      playerScore = playerScore + 1;
    }

    reset();
    gameState = "serve";
}
```

9. Create different functions for **Serve** and **Reset**.
10. Whenever either of the player's **score reaches 5**, display **Game Over** on the screen using a text statement.
11. Put the **Game States** (serve, play and end) in the game.
12. Make the Striker **bounceOff** with the players and all the edges.
13. When the game ends, make the game **restart** by pressing "**r**".
14. Click on **Run** once to check if the code is working correctly.

*Refer to the images given above for reference.

Submitting the Project:

1. **SAVE** all the changes made to the project.
2. Click the "**SHARE**" button to generate a shareable link.
3. Copy this link and submit it in the Student Dashboard Projects panel against the correct class number.

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Hints:

1. For loop to create the center line:

```
//draw line at the centre
 for (var i = 0; i < 400; i=i+20) {
  line(i,200,i+10,200);
}
```

2. Function reset() and Function serve():

```
function serve() {
  striker.velocityX = 3;
  striker.velocityY = 4;
}

function reset() {
  striker.x = 200;
  striker.y = 200;
  striker.velocityX = 0;
  striker.velocityY = 0;
}
```

3. Restarting the game:

```
// Restarting the Game
if (keyDown("r") && gameState === "end") {
  gameState = "serve";
  compScore = 0;
  playerScore = 0;
}
```

REMEMBER... Try your best, that's more important than being correct.
After submitting your project your teacher will send you feedback on your work.

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