SAVEETHA

INSTITUTE OF MEDICAL AND TECHNICAL SCIENCES

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ENGINEER TO EXCEL

Ping Pong game using C++ programming

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Introduction to Ping Pong Game

Ping pong, also known as table tennis, is a fast-paced and exhilarating indoor sport that requires agility and precision. It's played on a table divided by a net, with small paddles and a lightweight ball.

The game is popular worldwide and is enjoyed by players of all ages and skill levels.

Basic Rules of Ping Pong

1 Serving

Serve diagonally across the table, ensure the ball hits your side first, then the opponent's side.

2 Scoring

A point is scored when the opponent fails to return the ball, and games are played to 11 points.

3 Double Bounce Rule

The ball must bounce on both sides of the table during a rally.

Setting Up the Game Environment

Table and Net

Ensure the table and net are set up according to official dimensions and are free from any obstructions.

Lighting

Well-lit surroundings are essential to clearly see the ball's trajectory and maintain focus.

Creating the Game Loop

Game Initialization

Set up the game screen, define variables, and prepare the game environment.

Ball Movement

Implement the ball's physics, including speed, direction, and collision detection.

Implementing Player Controls

1

Player Movement

Enable smooth and responsive control for player movement, allowing precise placement of shots.

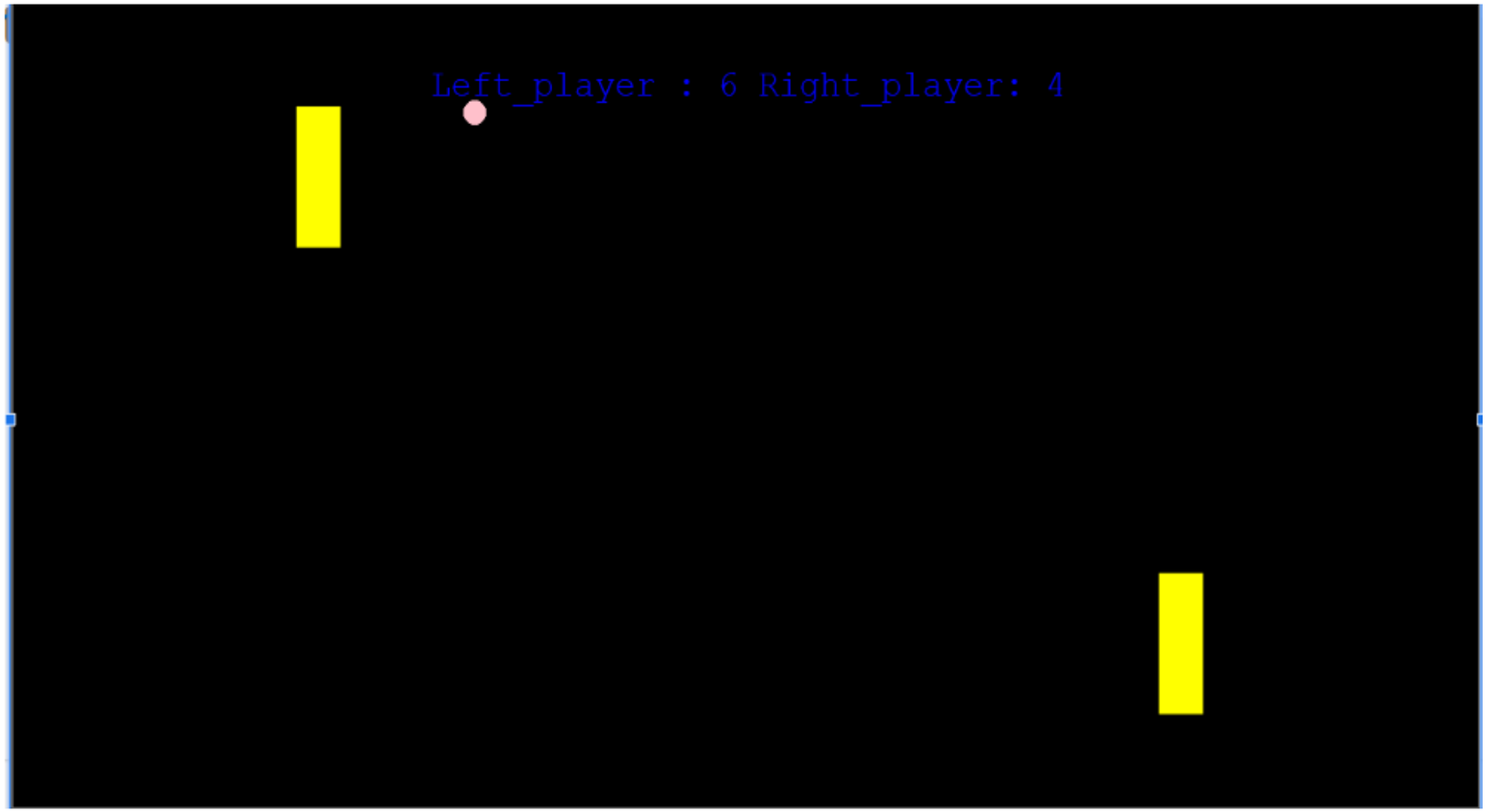
2

Ball Interaction

Implement player actions for striking and returning the ball with varying degrees of spin and power.

CODING

```cpp
#include <iostream>
#include <conio.h>
#include <windows.h>
using namespace std;
const int width = 20;
const int height = 10;
int ballX, ballY, paddleX, paddleY;
int ballDirX, ballDirY;
bool gameOver;
void setup()
{
    gameOver = false;
    ballX = width / 2;
    ballY = height / 2;
    paddleX = width / 2;
    paddleY = height - 1;
    ballDirX = 1;
    ballDirY = 1;
}
void draw()
{
    system("cls");


    for (int i = 0; i < width + 2; i++)
        cout << "#";
    cout << endl;


    for (int i = 0; i < height; i++)
    {
        for (int j = 0; j < width; j++)
        {
            if (j == 0)
                cout << "#";

            if (i == ballY && j == ballX)
                cout << "O";
            else if (i == paddleY && j >= paddleX && j < paddleX + 4)
                cout << "=";
            else
                cout << " ";

            if (j == width - 1)
                cout << "#";
        }
        cout << endl;
    }


    for (int i = 0; i < width + 2; i++)
        cout << "#";
    cout << endl;
}
void input()
{
    if (_kbhit())
    {
        switch (_getch())
        {
        case 'a':
            if (paddleX > 0)
                paddleX--;
            break;
        case 'd':
            if (paddleX < width - 4)
                paddleX++;
            break;
        case 'q':
            gameOver = true;
            break;
        }
    }
}
void logic()
{

    ballX += ballDirX;
    ballY += ballDirY;


    if (ballX <= 0 || ballX >= width - 1)
        ballDirX = -ballDirX;


    if (ballY <= 0)
        ballDirY = -ballDirY;


    if (ballY == paddleY - 1 && ballX >= paddleX && ballX < paddleX + 4)
        ballDirY = -ballDirY;


    if (ballY >= height - 1)
        gameOver = true;
}
Int main()
{
    setup();

    while (!gameOver)
    {
        draw();
        input();
        logic();
        Sleep(50); /
    }

    cout << "Game Over!" << endl;

    return 0;
}
```


Left_player : 6 Right_player: 4


THANK YOU!