



QUIZ APPLICATION SOURCE



GROUP MEMBERS

- CH.PAVAN NAGA KALYAN RAM – AP23110010277
- G.TEJESH KUMAR – AP23110010274
- G.PRANAY GUPTA -- AP23110010311
- CH.SAI SANTOSH – AP23110010313

ABOUT THE PROJECT

- **You are tasked with creating a quiz application in C++ where the user is asked a series of questions, and they must choose an answer from four options. The questions should be displayed in a random order, and each question will have a 10-second timer for the user to submit their answer.**

MODULES OF THE CODE

1.Shuffling Questions:

- Questions are shuffled at the start of each game to ensure variety in the order.
- The shuffleQuestions function uses a random index to swap elements.

2.Answer Validation:

- Ensures the user enters an answer between 1 and 4.
- If the input is invalid, the user is prompted again.

3.Score Calculation:

- The score is tracked based on correct answers.

4.Play Again Option:

- After completing the quiz, the player can choose to replay.

5.Timeout Mechanism:

- A countdown timer (timer = 10) allows only a limited time for each question

PSUEDOCODE REPRESENTATION

Start

Display welcome message

Initialize score to 0

Initialize array of questions and options

Initialize array of correct answers

Shuffle the questions for randomness

While user wants to play again:

Initialize score to 0

Shuffle the questions randomly

For each question:

Display the question and options

Set a timer for 10 seconds

While the user hasn't answered and time is remaining:

Prompt user for answer (1-4)

Validate the answer:

If valid answer is provided:

Check if answer is correct:

If correct, increase score

If incorrect, display correct answer

If invalid answer, prompt again

If timer runs out, display time's up and correct answer

Display the total score

Ask user if they want to play again (y/n)

End



SOURCE CODE

QUIZ APPLICATION SOURCE CODE.cpp

```
#include <iostream>
#include <cstdlib>
#include <ctime>
#include <unistd.h>
using namespace std;

void shuffleQuestions(int arr[], int size)
{
    for (int i = 0; i < size; i++)
    {
        int randIndex = rand() % size;
        int temp = arr[i];
        arr[i] = arr[randIndex];
        arr[randIndex] = temp;
    }
}

int main()
{
    string questions[] =
    {
        "What is the capital of Telangana?",
        "What is the national song of INDIA?",
        "Who is the Prime Minister of India?",
        "What is the capital of India?",
        "Which city is known as the Silicon Valley of India?",
        "What is the national flower of India?"
    };
};
```

```
string options[][4] =  
{  
    {"Madhyapradesh", "UP", "AP", "Hyderabad"},  
    {"Vande Mataram", "Sare Jahan se Accha", "National Anthem", "Chak de India"},  
    {"Donald Trump", "Narendra Modi", "Joe Biden", "K.A.Paul"},  
    {"New Delhi", "Mumbai", "Chennai", "Kolkata"},  
    {"Bangalore", "Hyderabad", "Chennai", "Pune"},  
    {"Lotus", "Rose", "Sunflower", "Tulip"}
```

```
int correctAnswers[] = {4, 1, 2, 1, 1, 1};
int score = 0;
int userAnswer;
char playAgain = 'y';

srand(time(0));

cout << "Welcome to the Quiz!" << endl;
cout << "Answer the following questions by entering the option number (1-4)." << endl;

while (playAgain == 'y' || playAgain == 'Y')
{
    score = 0;
    int questionOrder[] = {0, 1, 2, 3, 4, 5};
    shuffleQuestions(questionOrder, 6);

    for (int i = 0; i < 6; i++)
    {
        cout << "\nQuestion " << i + 1 << ": " << questions[questionOrder[i]] << endl;
        for (int j = 0; j < 4; j++)
        {
            cout << j + 1 << ". " << options[questionOrder[i]][j] << endl;
        }

        bool validInput = false;
        int timer = 10;
        while (!validInput && timer > 0)
        {
            cout << "Your answer (1-4): ";
            cin >> userAnswer;
            if (userAnswer >= 1 && userAnswer <= 4)
            {
                validInput = true;
            }
        }
        else
    }
```



```

        {
            cout << "Invalid input! Please choose a number between 1 and 4." << endl;
        }
        sleep(1);
        if (timer > 0)
        {
            timer--;
        }
    }

    if (validInput && userAnswer == correctAnswers[questionOrder[i]])
    {
        cout << "Correct!" << endl;
        score++;
    }
    else if (!validInput)
    {
        cout << "Time's up! The correct answer was option " << correctAnswers[questionOrder[i]] << ": "
            << options[questionOrder[i]][correctAnswers[questionOrder[i]] - 1] << "." << endl;
    }
    else
    {
        cout << "Wrong answer. The correct answer was option " << correctAnswers[questionOrder[i]] << ": "
            << options[questionOrder[i]][correctAnswers[questionOrder[i]] - 1] << "." << endl;
    }
}

cout << "\nQuiz completed!" << endl;
cout << "Your total score: " << score << " out of 6" << endl;
cout << "Would you like to play again? (y/n): ";
cin >> playAgain;
}

cout << "Thank you for playing the quiz! Goodbye!" << endl;

return 0;
}

```

SAMPLE OUTPUT

Welcome to the Quiz!

Answer the following questions by entering the option number (1-4).

Question 1: What is the capital of Telangana?

1. Madhyapradesh
2. UP
3. AP
4. Hyderabad

Your answer (1-4): 4

Correct!

Question 2: What is the national song of INDIA?

1. Vande Mataram
2. Sare Jahan se Accha
3. National Anthem
4. Chak de India

Your answer (1-4): 1

Correct!

Question 3: Who is the Prime Minister of India?

1. Donald Trump
2. Narendra Modi
3. Joe Biden
4. K.A.Paul

Your answer (1-4): 2

Correct!

Question 4: What is the capital of India?

1. New Delhi
2. Mumbai
3. Chennai
4. Kolkata

Your answer (1-4): 1

Correct!

Question 5: Which city is known as the Silicon Valley of India?

1. Bangalore
2. Hyderabad
3. Chennai
4. Pune

Your answer (1-4): 1

Correct!

Question 6: What is the national flower of India?

1. Lotus
2. Rose
3. Sunflower
4. Tulip

Your answer (1-4): 1

Correct!

Quiz completed!

Your total score: 6 out of 6

Would you like to play again? (y/n): n

Thank you for playing the quiz! Goodbye!

CONCLUSION

- The quiz program successfully demonstrates the integration of basic C++ concepts, such as arrays, loops, conditionals, and randomization, into an interactive application. By incorporating features like shuffling the order of questions, setting a timer for user input, and providing feedback based on the user's performance, the program enhances the overall user experience. The inclusion of a score system and the option to replay the quiz adds interactivity and encourages engagement. This project provides a solid foundation for further exploration and development of more complex applications, incorporating additional features such as scoring history, multiple difficulty levels, and data storage for user performance tracking. Overall, the project serves as an excellent exercise in C++ programming and offers a fun and educational experience for users.