

Console based quiz game

Program;

```
#include <stdio.h>

#include <stdlib.h>

#include <string.h>

#include <time.h>


#define MAX_QUESTIONS 5

#define MAX_OPTION_LEN 100

#define MAX_NAME_LEN 50

#define TIME_LIMIT 10


typedef struct {
    char question[256];
    char options[4][MAX_OPTION_LEN];
    int correctOption; // 1-based index
} Question;


Question questions[MAX_QUESTIONS] = {
    {
        "What is the capital of France?",
        {"Berlin", "Madrid", "Paris", "Rome"},
        3
    },
    {
        "Which planet is known as the Red Planet?",
        {"Earth", "Mars", "Jupiter", "Saturn"},
    }
```

```

        2
    },
    {
        "What is 5 + 3?",
        {"6", "7", "8", "9"},
        3
    },
    {
        "Which language is used for system programming?",
        {"Python", "Java", "C", "HTML"},
        3
    },
    {
        "Who wrote 'Romeo and Juliet'?",
        {"Shakespeare", "Hemingway", "Tolkien", "Austen"},
        1
    }
};

```

```

void shuffleQuestions() {
    for (int i = 0; i < MAX_QUESTIONS; i++) {
        int j = rand() % MAX_QUESTIONS;
        Question temp = questions[i];
        questions[i] = questions[j];
        questions[j] = temp;
    }
}

```

```

void clearInputBuffer() {
    int c;
    while ((c = getchar()) != '\n' && c != EOF) {}
}

```

```
}
```

```
void saveHighScore(const char * name, int score) {  
    FILE *file = fopen("highscores.txt", "a");  
    if (file != NULL) {  
        fprintf(file, "%s: %d/%d\n", name, score, MAX_QUESTIONS);  
        fclose(file);  
        printf("Score saved successfully!\n");  
    } else {  
        printf("Failed to save score.\n");  
    }  
}
```

```
void startQuiz() {  
    int answer, score = 0;  
    char name[MAX_NAME_LEN];  
    time_t start, end;  
  
    shuffleQuestions();  
  
    printf("\n--- Quiz Started! ---\n");  
  
    for (int i = 0; i < MAX_QUESTIONS; i++) {  
        printf("\nQ%d: %s\n", i + 1, questions[i].question);  
        for (int j = 0; j < 4; j++) {  
            printf("%d. %s\n", j + 1, questions[i].options[j]);  
        }  
  
        printf("You have %d seconds to answer...\n", TIME_LIMIT);  
        time(&start);  
        printf("Enter your answer (1-4): ");
```

```

if (scanf("%d", &answer) != 1) {
    clearInputBuffer();
    printf("Invalid input! Skipping question.\n");
    continue;
}

time(&end);
double timeTaken = difftime(end, start);

if (timeTaken > TIME_LIMIT) {
    printf("⌚ Time's up! You took %.0f seconds.\n", timeTaken);
    continue;
}

if (answer < 1 || answer > 4) {
    printf("Invalid option. Skipping question.\n");
    continue;
}

if (answer == questions[i].correctOption) {
    printf("✔ Correct!\n");
    score++;
} else {
    printf("✘ Wrong! Correct answer: %s\n", questions[i].options[questions[i].correctOption - 1]);
}
}

printf("\n--- Quiz Completed! ---\n");
printf("Your score: %d out of %d\n", score, MAX_QUESTIONS);

```

```

if (score == MAX_QUESTIONS)
    printf("🎉 Excellent!\n");
else if (score >= 3)
    printf("👏 Good job!\n");
else
    printf("😞 Try again!\n");

printf("Enter your name to save the score: ");
scanf("%s", name);
saveHighScore(name, score);
}

int main() {
    srand(time(NULL)); // Initialize random seed
    startQuiz();
    return 0;
}

```

Sample output;

--- Quiz Started! ---

Q1: What is the capital of France?

1. Berlin
2. Madrid
3. Paris
4. Rome

You have 10 seconds to answer...

Enter your answer (1-4): 3

✓ Correct!

Q2: What is $5 + 3$?

1. 6

2. 7

3. 8

4. 9

You have 10 seconds to answer...

Enter your answer (1-4): 3

✓ Correct!

Q3: Who wrote 'Romeo and Juliet'?

1. Shakespeare

2. Hemingway

3. Tolkien

4. Austen

You have 10 seconds to answer...

Enter your answer (1-4): 4

✗ Wrong! Correct answer: Shakespeare

Q4: Which planet is known as the Red Planet?

1. Earth

2. Mars

3. Jupiter

4. Saturn

You have 10 seconds to answer...

Enter your answer (1-4): 2

✓ Correct!

Q5: Which language is used for system programming?

1. Python

2. Java

3. C

4. HTML

You have 10 seconds to answer...

Enter your answer (1-4): 3

✓ Correct!

--- Quiz Completed! ---

Your score: 4 out of 5

👏 Good job!

Enter your name to save the score: Alice

Score saved successfully!