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 ouput;

--- 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!