

## APPENDICES

### APPENDIX A-SOURCE CODE

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <time.h>
#include <ctype.h>

#define MAX_QUESTIONS 5
#define MAX_LENGTH 100
#define TIME_LIMIT 60 // Time limit set to 60 seconds (1 minute)

typedef struct {
    char question[MAX_LENGTH];
    char options[4][MAX_LENGTH];
    char correctOption;
} Question;

void askQuestion(Question q, int *score);
void timer(int seconds);
char toLowerCase(char ch);

int main() {
    Question questions[MAX_QUESTIONS] = {
        {"What is the capital of France?", {"A. Berlin", "B. Madrid", "C. Paris", "D. Rome"}, 'c'},
        {"What is 2 + 2?", {"A. 3", "B. 4", "C. 5", "D. 6"}, 'b'},
        {"What is the largest planet in our solar system?", {"A. Earth", "B. Mars", "C. Jupiter", "D. Saturn"}, 'c'},
```

```

        {"Who wrote 'To be, or not to be, that is the question'?", {"A. Dickens", "B. Shakespeare", "C. Hemingway", "D. Austen"}, 'b'},
        {"What is the smallest prime number?", {"A. 1", "B. 2", "C. 3", "D. 5"}, 'b'}
    };

```

```

int score = 0;
for(int i = 0; i < MAX_QUESTIONS; i++) {
    askQuestion(questions[i], &score);
}

```

```

printf("Quiz finished! Your final score is %d/%d.\n", score,
MAX_QUESTIONS);
return 0;
}

```

```

void askQuestion(Question q, int *score) {
    char userAnswer;
    time_t start, end;

    printf("%s\n", q.question);
    for(int i = 0; i < 4; i++) {
        printf("%s\n", q.options[i]);
    }
    printf("You have %d seconds to answer: ", TIME_LIMIT);

    time(&start);
    timer(TIME_LIMIT);

    if(scanf(" %c", &userAnswer) == 1) {
        time(&end);
    }
}

```

```

double elapsed = difftime(end, start);

if(elapsed > TIME_LIMIT) {
    printf("Time's up! Moving to the next question.\n");
} else if(toLowerCase(userAnswer) == q.correctOption) {
    printf("Correct!\n");
    (*score)++;
} else {
    printf("Incorrect! The correct answer was '%c'.\n", q.correctOption);
}
}

void timer(int seconds) {
    int milliseconds = 1000 * seconds;
    clock_t start_time = clock();
    while(clock() < start_time + milliseconds);
}

char toLowerCase(char ch) {
    if (ch >= 'A' && ch <= 'Z') {
        return ch + ('a' - 'A');
    }
    return ch;
}

```