#include <iostream>

#include <vector>

#include <algorithm>

using namespace std;

// Class representing a quiz question

class Question {

public:

string questionText;

vector<string> options;

char correctOption;

// Constructor

Question(string text, vector<string> opts, char correct)

: questionText(move(text)), options(move(opts)), correctOption(correct) {}

// Function to display the question

void display() const {

cout << questionText << endl;

for (char i = 'A'; i < 'A' + options.size(); ++i) {

cout << i << ". " << options[i - 'A'] << endl;

}

}

// Function to check if the provided answer is correct

bool isCorrect(char answer) const {

return toupper(answer) == toupper(correctOption);

}

};

// Class representing a quiz

class Quiz {

private:

vector<Question> questions;

public:

// Function to add a new question to the quiz

void addQuestion() {

string text;

cout << "Enter the question: ";

cin.ignore(); // Ignore the newline character left in the buffer

getline(cin, text);

vector<string> options;

char correctOption;

cout << "Enter the options:" << endl;

for (char i = 'A'; i <= 'D'; ++i) {

string option;

cout << i << ". ";

getline(cin, option);

options.push\_back(option);

}

cout << "Enter the correct option (A/B/C/D): ";

cin >> correctOption;

questions.emplace\_back(text, options, correctOption);

cout << "Question added successfully!\n" << endl;

}

// Function to start the quiz

void start() {

cout << "Welcome to the Quiz!" << endl;

askQuestions();

cout << "Quiz completed. Your score: " << getScore() << "/" << questions.size() << endl;

}

private:

// Function to ask questions one by one

void askQuestions() {

for (const auto& question : questions) {

question.display();

char userAnswer;

cout << "Your answer (A/B/C/D): ";

cin >> userAnswer;

if (question.isCorrect(userAnswer)) {

cout << "Correct!\n" << endl;

} else {

cout << "Incorrect. Correct answer: " << question.correctOption << "\n" << endl;

}

}

}

// Function to calculate the user's score

int getScore() const {

int score = 0;

for (const auto& question : questions) {

// Increment score for each correct answer

score += question.isCorrect('A'); // Assuming 'A' is the correct answer in each case

}

return score;

}

};

int main() {

Quiz quiz;

// Menu for the quiz application

while (true) {

cout << "1. Start Quiz\n";

cout << "2. Add Question\n";

cout << "3. Exit\n";

cout << "Enter your choice: ";

int choice;

cin >> choice;

switch (choice) {

case 1:

quiz.start();

break;

case 2:

quiz.addQuestion();

break;

case 3:

cout << "Exiting the program.\n";

return 0;

default:

cout << "Invalid choice. Please try again.\n";

}

}

return 0;

}