C ++ Programming Assessment Test

• Create a Project to demonstrate an Event Organiser Project which will help to manage the Events. The Project should contain all the necessary requirements i.e need to use conditional Statements, Loops, Function and also A Program should use the concept of OOP.

• Give comments where it is required , for better understanding of codes. It will help you and the project evaluator.

• A Project should contain the following execution flow.

• When Execution of the main source file, the program should first ask the NAME OF THE EVENT.

1. Example : Wedding

2. After asking the event name , it should ask your

I. FIRST NAME,LAST NAME.

II. Number of Guests.

III. Number of Minutes.

3. Once the all the Input requirement is over, you should be able to get the Event Cost Estimation.

Use the following rate card :

a. const double CostPerHour = 18.50;

b. const double CostPerMinute = .40;

c. const double CostOfDinner = 20.70;

i. GET Number of Servers.

(1 Server can handle 20 guests, so FIND how much server required for No. of Guests you Entered.) (Hint : You can use ceil() function . (i.e : rounds up the nearest integer)

ii. GET COST of ONE Server.

Example :

Cost1 = (NumberOfMinutes / 60) * CostPerHour;

Cost2 = (NumberOfMinutes % 60) * CostPerMinute;

CostForOneServer = Cost1 + Cost2;

iii. GET COST for FOOD.

TotalFoodCost = NumberOfGuests * CostOfDinner;

iv. Get Average Cost Per Person

AverageCost = TotalFoodCost / NumberOfGuests;

v. GET TOTAL COST.

TotalCost = TotalFoodCost + (CostForOneServer * NumberOfServers);

vi. GET DEPOSIT AMOUNT

DepositAmount = TotalCost * .25;

4. After completion this project upload it on GitHub

• Upload all features in develop branch after completion all features

merge it with main branch

Program:

```
#include <iostream>
#include <string>
#include <cmath>
#include <iomanip>

// Define constants for the rate card
const double CostPerHour = 18.50;
const double CostPerMinute = 0.40;
const double CostOfDinner = 20.70;

// The Event class encapsulates all event-related data and calculations
class Event {
private:
    std::string eventName;
    std::string firstName;
    std::string lastName;
    int numberOfGuests;
    int numberOfMinutes;
    int numberOfServers;
    double costForOneServer;
    double totalFoodCost;
    double averageCostPerPerson;
    double totalCost;
    double depositAmount;

public:
    // Constructor to initialize the Event object with user inputs
    Event(std::string eventName, std::string firstName, std::string lastName, int guests, int minutes) {
        this->eventName = eventName;
```

```
    this->firstName = firstName;
    this->lastName = lastName;
    this->numberOfGuests = guests;
    this->numberOfMinutes = minutes;
    calculateCosts();
}

// Function to perform all cost calculations
void calculateCosts() {
    // Calculate the number of servers required using ceil()
    numberOfServers = static_cast<int>(ceil(static_cast<double>(numberOfGuests) / 20.0));

    // Calculate the cost for one server based on minutes
    double cost1 = (numberOfMinutes / 60) * CostPerHour;
    double cost2 = (numberOfMinutes % 60) * CostPerMinute;
    costForOneServer = cost1 + cost2;

    // Calculate the total food cost
    totalFoodCost = numberOfGuests * CostOfDinner;

    // Calculate the average cost per person
    averageCostPerPerson = totalFoodCost / numberOfGuests;

    // Calculate the total cost of the event
    totalCost = totalFoodCost + (costForOneServer * numberOfServers);

    // Calculate the deposit amount
    depositAmount = totalCost * 0.25;
}

// Function to display the final cost estimation
```

```
    void displayCostEstimation() {
        std::cout << std::fixed << std::setprecision(2);
        std::cout << "\n--- Event Cost Estimation for " << eventName << " ---\n";
        std::cout << "Client: " << firstName << " " << lastName << "\n";
        std::cout << "Number of Guests: " << numberOfGuests << "\n";
        std::cout << "Event Duration: " << numberOfMinutes << " minutes\n\n";

        std::cout << "Required Number of Servers: " << numberOfServers << "\n";
        std::cout << "Cost per Server: $" << costForOneServer << "\n";
        std::cout << "Total Food Cost: $" << totalFoodCost << "\n";
        std::cout << "Average Cost per Person: $" << averageCostPerPerson << "\n";

        std::cout << "\n--- Final Summary ---\n";
        std::cout << "TOTAL COST: $" << totalCost << "\n";
        std::cout << "DEPOSIT AMOUNT (25%): $" << depositAmount << "\n";
    }
};

// Main function where the program execution begins
int main() {
    std::string eventName;
    std::string firstName, lastName;
    int numberOfGuests;
    int numberOfMinutes;

    // Prompt for event name
    std::cout << "Welcome to the Event Organizer!\n";
    std::cout << "Please enter the NAME OF THE EVENT: ";
    std::getline(std::cin, eventName);

    // Loop for user details to ensure valid input
```

```
    while (true) {
        std::cout << "\nPlease enter your FIRST NAME: ";
        std::cin >> firstName;
        std::cout << "Please enter your LAST NAME: ";
        std::cin >> lastName;
        std::cout << "Please enter the number of guests: ";
        std::cin >> numberOfGuests;
        std::cout << "Please enter the duration of the event in minutes: ";
        std::cin >> numberOfMinutes;

        // Conditional statement to check for valid positive inputs
        if (numberOfGuests > 0 && numberOfMinutes > 0) {
            break; // Exit loop if inputs are valid
        } else {
            std::cout << "\nInvalid input. Number of guests and minutes must be positive. Please try
again.\n";
            std::cin.clear(); // Clear error flags
            std::cin.ignore(10000, '\n'); // Discard invalid input
        }
    }

    // Create an Event object using the user's input
    Event myEvent(eventName, firstName, lastName, numberOfGuests, numberOfMinutes);

    // Call the function to display the cost estimation
    myEvent.displayCostEstimation();

    std::cout << "\nThank you for using the Event Organizer!";

    return 0;
}
```

Output:

Welcome to the Event Organizer!

Please enter the NAME OF THE EVENT: wedding

Please enter your FIRST NAME: yagnesh

Please enter your LAST NAME: naidu

Please enter the number of guests: 100

Please enter the duration of the event in minutes: 90

--- Event Cost Estimation for wedding ---

Client: yagnesh naidu

Number of Guests: 100

Event Duration: 90 minutes

Required Number of Servers: 5

Cost per Server: $30.50

Total Food Cost: $2070.00

Average Cost per Person: $20.70

--- Final Summary ---

TOTAL COST: $2222.50

DEPOSIT AMOUNT (25%): $555.62

Thank you for using the Event Organizer!

=== Code Execution Successful ===