

OOP244 Breakout Room (Week 4)

Complete the following C++ program.

```
#include <cstring>
#include <iostream>
using namespace std;

const int MAX=10, LEN=20;

struct Person{
    char name[LEN+1];
    int age;
};

class Room{
    Person persons[MAX]; // persons in a room
    int numberOfPeople; // number of people in a room

public:
    Room();
    Room(int q, Person persons[]);
    void set(Person persons[], int num);
    void display() const;
    ~Room();
};

int main(){
    Person students[] = { {"John Doe", 35}, {"Mary Ryen", 65} };
    int size = 2;

    // TO-DO

    return 0;
}
```

A. CORRECT OUTPUT:

SAFE EMPTY STATE!
number of people: 2
John Doe
Mary Ryen

B. IMPLEMENTATION REQUIREMENTS

1. The default constructor initializes a Room object to have zero people.
2. The two-argument constructor uses two parameters to initialize a Room object.
It will copy all the persons from the array parameter (persons) into the object.
Be careful: The data member and the array parameter are both named as "persons"!
3. The member function set() assigns the value of the second parameter (num) to be the number of people in the room. It copies all the persons from the array parameter (persons) into the object. If the array parameter is nullptr, it will assign zero to be the number of people in the room.
4. The query displays the number of people in the room. It displays the message "SAFE EMPTY STATE" if the number of people is zero.
5. When a Room object goes out of scope, the destructor will display all the names of the people in the room.