VIT - Vellore

Name: RONIT MEXSON .
Email: ronit.mexson2024@vitstudent.ac.in
Roll no: 24BAI0036
Phone: 9999999999
Branch: ARUMUGA ARUN R_OOPS
Department: admin
Batch: VL2024250502365
Degree: admin

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BCSE102P_Structured and Object Oriented Programming Lab_VL2024250502365

VIT V_Structured and OOP_Lab 6_COD_Medium_Multi-level inheritance

Attempt : 1
Total Mark : 10
Marks Obtained : 10

Section 1 : Coding

1. Problem Statement

Design a social media system that allows users to create posts, manage followers, and display user profiles. Implement the system using multilevel inheritance with three classes: User, Blogger, and Influencer.

Define the classes User, Blogger, and Influencer to represent these user types and their functionalities.

The User class is the base class and represents a generic user. It stores the user's username (username) and name (name). The class provides a function displayProfile to display the user's profile information.

The Blogger class is derived from the User class and represents a blogger user. It inherits the username and name members from the User class. Additionally, it has an array of strings called posts to store the blogger's posts. The class provides functions createPost to add a new post to the posts array and displayProfile to display the blogger's profile information along with their posts.

The Influencer class is derived from the Blogger class and represents an influencer user. It inherits the username, name, and posts members from the Blogger class. It also has an additional member followerCount to store the number of followers the influencer has. The class provides a function manageFollowers to update the follower count and overrides the displayProfile function to display the influencer's profile information along with their follower count.

Answer

```
// You are using GCC
#include <iostream>
#include <vector>
using namespace std;

class User {
protected:
    string username;
    string name;
public:
    User(const string& userUsername, const string& userName) :
username(userUsername), name(userName) {}
    virtual void displayProfile() {
        cout << "User Profile:" << endl;
        cout << "Username: " << username << endl;
        cout << "Name: " << name << endl;
    }
};

class Blogger : public User {
protected:
    vector<string> posts;
public:
    Blogger(const string& userUsername, const string& userName) :
```

```
    User(userUsername, userName) {}
    void createPost(const string& post) {
        posts.push_back(post);
    }
    void displayProfile() override {
        User::displayProfile();
        cout << "Posts:" << endl;
        for (const auto& post : posts) {
            cout << post << endl;
        }
    }
};

class Influencer : public Blogger {
private:
    int followerCount;
public:
    Influencer(const string& userUsername, const string& userName) :
Blogger(userUsername, userName), followerCount(0) {}
    void manageFollowers(int count) {
        followerCount = count;
    }
    void displayProfile() override {
        Blogger::displayProfile();
        cout << "Follower Count: " << followerCount << endl;
    }
};

int main() {
    string username, name;
    int numPosts, followerCount;

    getline(cin, username);
    getline(cin, name);
    cin >> numPosts;
    cin.ignore();

    Influencer influencer(username, name);

    for (int i = 0; i < numPosts; ++i) {
        string post;
        getline(cin, post);
```

```
        influencer.createPost(post);
    }

    cin >> followerCount;
    influencer.manageFollowers(followerCount);

    influencer.displayProfile();
    return 0;
}
```

Status : Correct ***Marks : 10/10***