CSC2211 Computer Science I Lab

Lab 09

Objectives

1. Learn about inheritance
2. Explore how to redefine the member functions of a base class

Example

- Create game characters using the concept of inheritance.

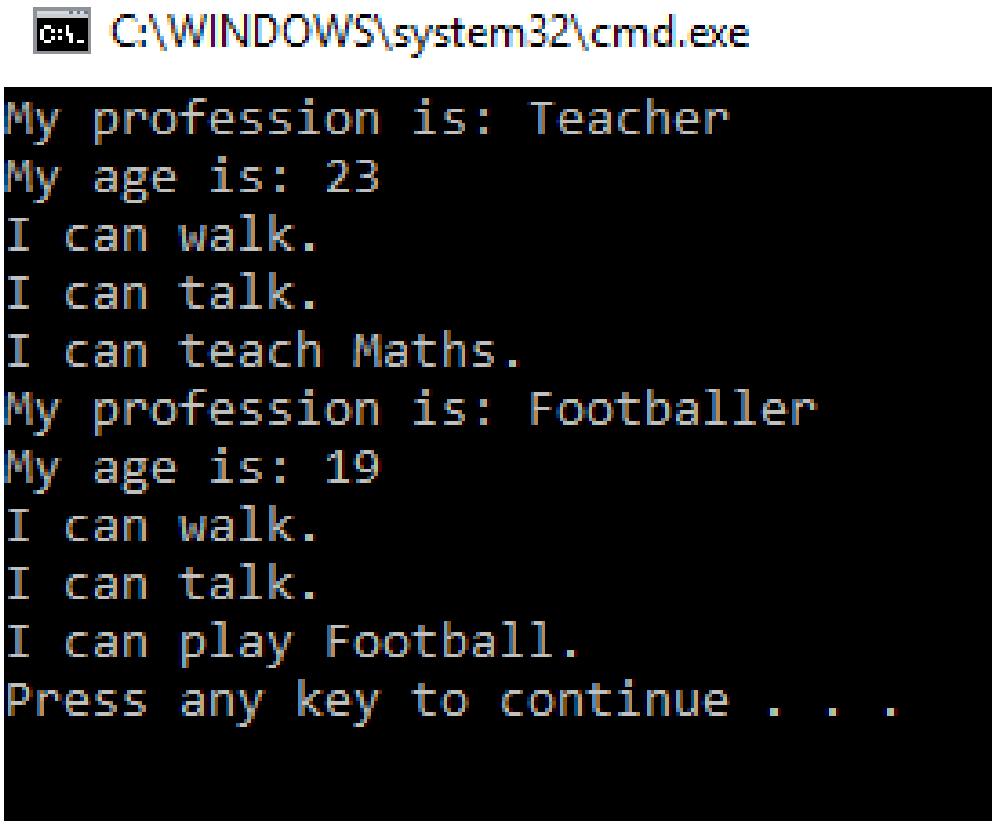
Solution

```cpp
#include <iostream>
#include <string>
using namespace std;

class Person
{
private:
    string  profession;
    int age;
public:
    Person() {

        profession = "unemployed";
        age = 18;
    }
    void display()
    {
        cout << "My profession is: " << profession << endl;
        cout << "My age is: " << age << endl;
        walk();
        talk();
    }
    void walk() { cout << "I can walk." << endl; }
    void talk() { cout << "I can talk." << endl; }
    void setProfession(string str){ profession = str; }
    string getProfession(){ return profession;  }
    void setAge(int x){ age = x; }
    int getAge(){ return age; }


};
```

Solution

```
// MathsTeacher class is derived from base class Person.
class MathsTeacher : public Person
{
public:
    void teachMaths() { cout << "I can teach Maths." << endl; }
};

// Footballer class is derived from base class Person.
class Footballer : public Person
{
public:
    void playFootball() { cout << "I can play Football." << endl; }
};

int main()
{
    MathsTeacher teacher;
    teacher.setProfession( "Teacher");
    teacher.setAge(23);
    teacher.display();
    teacher.teachMaths();

    Footballer footballer;
    footballer.setProfession("Footballer");
    footballer.setAge (19);
    footballer.display();
    footballer.playFootball();

    return 0;
}
```

Output


C:\WINDOWS\system32\cmd.exe
My profession is: Teacher
My age is: 23
I can walk.
I can talk.
I can teach Maths.
My profession is: Footballer
My age is: 19
I can walk.
I can talk.
I can play Football.
Press any key to continue . . .