

# Inheritance Example Code

## Example 4.1

This example uses a base class 'Employee' and two derived classes. a 'Manager' class and a 'Radio Employee' class. Each of them with a different way to determine their weekly pay. The 'Manager' is paid based on the number of subordinates, while the 'Radio Employee' is paid extra for extra time worked.

```
#include <iostream>
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#include <string>

using namespace std;

//-----
class Employee {
protected:
    float payrate;
public:
    string name;

    //constructor
    Employee(string n, float p){
        name = n;
        payrate = p;
    }

    float weeklyPay(int hours){
        return hours * payrate;
    }
}; //Employee

//-----
class Manager : public Employee {
public:
    int no_subs;
```

```

//constructor
Manager(string n, float p, int i) : Employee (n, p) {
    no_subs = i;
}

float weeklyPay(int hours){
    return Employee::weeklyPay(hours) + (100 * no_subs);
}
};

//-----
class RadioEmp : public Employee {
public:
    //constructor
    RadioEmp(string n, float p) : Employee (n, p) { }

    float weeklyPay(int hours){
        int extra = hours - 40;
        if (extra <= 0) {
            return Employee::weeklyPay(hours);
        }
        else {
            return Employee::weeklyPay(40) + (extra * payrate * 1.5);
        }
    }
};

//-----
int main () {
    Employee x("Bill", 13.8);
    Manager y("Steve", 25.5, 4);
    RadioEmp z("Homer", 13.8);

    cout << x.name << " " << x.weeklyPay(45) << endl;
    cout << y.name << " " << y.weeklyPay(45) << endl;
    cout << z.name << " " << z.weeklyPay(45) << endl;
}

```

