

```
#include <iostream>
```

```
#include <string>
```

```
// (i) Define a base class named
```

```
AccountHolder
```

```
class AccountHolder {
```

```
protected:
```

```
    std::string name; // A protected data  
    member name (string) to represent the  
    account holder's name.
```

```
public:
```

```
    // Constructor for AccountHolder
```

```
    AccountHolder(std::string n) : name(n) {}  
};
```

```
// (ii) Define a derived class BankAccount  
that inherits from the AccountHolder class
```

```
class BankAccount : public AccountHolder  
{
```

```
private:
```

```
    int accountNumber;    // A private data  
    member accountNumber (int).
```

```
    double balance;      // A private data  
    member balance (double).
```

```
public:
```

```
    // A constructor that initializes name,  
    accountNumber, and balance by calling  
    the base class constructor.
```

```
    BankAccount(std::string n, int accNum,  
    double bal) : AccountHolder(n),  
    accountNumber(accNum), balance(bal) {}  
};
```

```
// (iii) Define another derived class  
SavingsAccount that inherits from the  
BankAccount class
```

```
class SavingsAccount : public  
BankAccount {
```

```
private:
```

```
    double interestRate; // A private data
```

member interestRate (double).

public:

// A constructor that initializes name, accountNumber, balance, and interestRate by calling the appropriate constructors.

```
SavingsAccount(std::string n, int  
accNum, double bal, double rate)  
    : BankAccount(n, accNum, bal),  
    interestRate(rate) {}  
};
```

```
int main() {
```

```
// Example Usage (for demonstration, as  
the problem didn't ask for main function  
implementation)
```

```
    AccountHolder ah("John Doe");  
    BankAccount ba("Jane Smith", 1001,  
5000.0);  
    SavingsAccount sa("Peter Jones", 2002,  
10000.0, 0.05);
```

```
std::cout << "Bank System Initialized." <<  
std::endl;
```

```
// You can add more functionality here if  
needed, like displaying data (though getter  
functions are excluded)
```

```
return 0;  
}
```