

```
/* CIS 266 Object Oriented Programming Class Assignment 8
```

```
Chapater 9, Problem 5, Page 357
```

```
Student: Jim Engel  
Date: Nov 12, 2001
```

```
Analysis:
```

```
This solution is not according to the instructions in the  
text, but it seems to work.....
```

```
This solution uses an array of pointers to the base class,  
someting apparently not politically correct in the mind of  
the author
```

```
*/
```

```
#include <iostream.h>  
#include <string.h>  
#include <iomanip.h>  
#include <stdio.h>  
#include <stdlib.h>
```

```
class Account  
{
```

```
private:
```

```
int number;  
float balance;  
static int xnum;
```

```
public:
```

```
Account ( float bal = 0.) :balance (bal){ number = ++xnum;}
```

```
virtual void xdisplay(){cout<<" in Account Class xdisplay()"<< endl;};
```

```
void display ()
```

```
{ cout << "Number: " << number << " Balance = " << balance ;  
xdisplay();
```

```
}
```

```
};
```

```
int Account::xnum = 1000;
```

```
class Checking: public Account
```

```
{
```

```
private:
```

```
float fee;
```

```
public:
```

```
Checking (float bal=0., float xfee = 3.25) : Account ( bal), fee ( xfee){};
```

```
void xdisplay()
```

```
{ cout<< " Fee = " << fee << " "<< endl ;  
}
```

```
};
```

```
class Savings : public Account
```

```
{
```

```
private:
```

```

    float rate;
public:
    Savings ( float bal=0., float xrate = .03) : Account ( bal), rate ( xrate){};
    void xdisplay()
    { cout<< " Rate = " << rate << " " << endl ;
    }
};

void main ( void )
{ int kk;
char type;
Account * actp[5];

cout <<"Chapter 9, Problem 5,  Pointer Array Implementation...\n\n";

for ( kk = 0; kk < 5; ++kk ) {
    cout << "Enter C or S: ";
    cin >> type;
    if ( toupper ( type ) == 'S') {
        actp[kk] = new Savings;
        actp[kk]->display();
    }
    else {
        actp[kk] = new Checking;
        actp[kk]->display();
    }
    cout << endl;
}

for ( kk = 0; kk < 5; ++kk ) {
    actp[kk]->display();
}
}

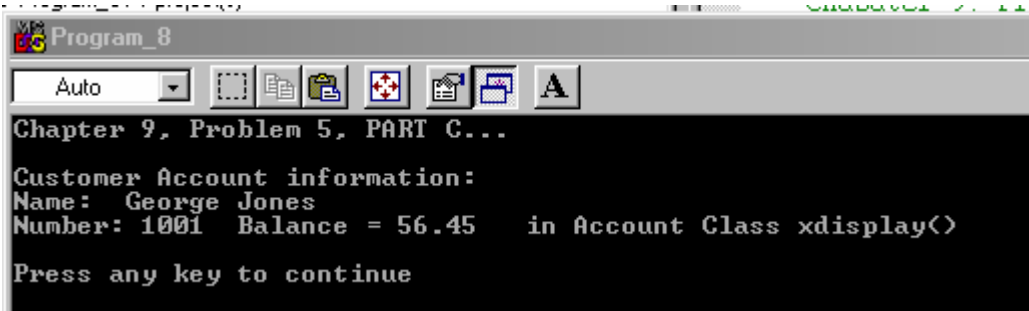
```

```

MS-DOS Windows
Program_8
Auto
Chapter 9, Problem 5,  Pointer Array Implementation...
Enter C or S: c
Number: 1001  Balance = 0 Fee = 3.25
Enter C or S: c
Number: 1002  Balance = 0 Fee = 3.25
Enter C or S: s
Number: 1003  Balance = 0 Rate = 0.03
Enter C or S: s
Number: 1004  Balance = 0 Rate = 0.03
Enter C or S: s
Number: 1005  Balance = 0 Rate = 0.03
Number: 1001  Balance = 0 Fee = 3.25
Number: 1002  Balance = 0 Fee = 3.25
Number: 1003  Balance = 0 Rate = 0.03
Number: 1004  Balance = 0 Rate = 0.03
Number: 1005  Balance = 0 Rate = 0.03
Press any key to continue

```

## Problem 5, Part C



```
Program_8
Auto
Chapter 9, Problem 5, PART C...
Customer Account information:
Name: George Jones
Number: 1001 Balance = 56.45 in Account Class xdisplay()
Press any key to continue
```

```
/* CIS 266 Object Oriented Programming Class Assignment 8
   Chapter 9, Problem 5, PART C Page 357
   Student: Jim Engel
   Date: Nov 12, 2001
*/

#include <iostream.h>
#include <string.h>
#include <stdio.h>
#include <stdlib.h>

class Account
{
private:
    int number;
    float balance;
    static int xnum;
public:
    Account ( float bal = 0.) :balance (bal){ number = ++xnum;}

    virtual void xdisplay(){cout<<" in Account Class xdisplay()"<< endl;};

    void display ()
    { cout << "Number: " << number << " Balance = " << balance ;
      xdisplay();
    }
};

int Account::xnum = 1000;

class Checking: public Account
{
private:
    float fee;
public:
    Checking (float bal=0., float xfee = 3.25) : Account ( bal), fee ( xfee){};

    void xdisplay()
    { cout<< " Fee = " << fee << " "<< endl ;
    }
};

class Savings : public Account
{
private:
    float rate;
public:
    Savings ( float bal=0., float xrate = .03) : Account ( bal), rate ( xrate){};
```

```

    void xdisplay()
    { cout<< " Rate = " << rate << " " << endl ;
      }
};

class Customer
{
public:
    Customer ( char* xname = "Blank Name")
    {
        strcpy (name,xname);
    }
protected:
    char name[66];
};

class CustomerAccount: public Customer,public Account
{
public:
    CustomerAccount(char *xname, float balance) : Customer (xname),Account(balance){}
    void ca_display()
    {
        cout << "Customer Account information: \n";
        cout << "Name: " << name << endl ;
        Account::display();
        cout << endl;
    }
};

void main ( void )
{
    cout <<"Chapter 9, Problem 5, PART C...\n\n";

    CustomerAccount xaccount( "George Jones", (float)56.45);
    xaccount.ca_display();
}

```

## Problem 6, Page 358 text



```
/*    CIS 266 Object Oriented Programming Class Assignment 8

    Chapter 9, Problem 6, Page 358

    Student:    Jim Engel
    Date:       Nov 12, 2001

*/

#include <iostream.h>
#include <string.h>
#include <iomanip.h>
#include <stdlib.h>

class RestaurantFood
{
protected:
    char name [56];
    float price;

public:

    RestaurantFood ( char * xname, float xprice): price(xprice)
    {
        strcpy ( name,xname);
    }
    void RestDisplay () {
        cout << "    Meal: "<< name << " Price: " << price <<endl;
    }

};

class HotelService
{
protected:
    char sname[100];
    float fee;
    int room;
public:
    HotelService ( char * xsname, float xfee, int xroom) :fee(xfee)
    {
        strcpy ( sname,xsname);
    }
    void ServiceDisplay ()
    {
        cout << setiosflags ( ios::fixed | ios::showpoint);
        cout.precision (2);
        cout << "Service: "<< sname << " Service fee: "<< fee << " \n";
    }
};
```

```
class RoomService : public RestaurantFood,public HotelService
{
private:
public:
    RoomService( char * rname ,float rprice, int xroom)
        : HotelService ("Room Service",4.00, xroom),
          RestaurantFood (rname, rprice)      {}

    void sdisplay ( )
    {
        ServiceDisplay();
        RestDisplay();
        cout << endl;
    }
};

void main ( )
{
    RoomService serv("Steak Dinner", (float)19.99,1202);
    serv.sdisplay();
}
```