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**Course : Object Oriented Programming
Lab**

Section : BSE (2A)

OOP LAB 11 **(OPEN ENDED LAB)**

PROGRAM CODE:

```
#include <iostream>
/*Account, PlusAccount, FreedomAccount, inheritance, array of pointers and dynamic
memory allocation*/
using namespace std;
class Account {
    string title;
    int sno;
    string accountNo;
```

```

double balance;
public:
Account(string a, int b, string c, double d)
{
    title=a;
    sno=b;
    accountNo=c;
    balance=d;
}

void credit(double dd)
{
    balance+=dd;
    cout << " Account credit, " << getbalance() << endl;
}

void debit(double dd)
{
    int temp = balance-dd;
    if (temp>0)
        balance-=dd;
    else
        cout << " No balance for debit" << endl;
}
double getbalance()
{
    return balance;
}
void setbalance(int x)
{
    balance+=x;
}
};
class PlusAccount : public Account
{
    int minbalance;
    int interestrate;

    public:
PlusAccount(int min, int rate, string t, int s, string a, double b):Account(t,s,a,b)
{
    minbalance=min;
    interestrate=rate;
}
void calcinterest()
{
    credit(getbalance()*(((double)interestrate)/100));
}

```

```

/*public crebit()
{
    balance+=a;
}*/

void debit(double dd)
{
    int temp = getbalance()-dd;
    if (temp>=minbalance)
        setbalance(-1*dd);
    else
        cout << " No balance for debit" << endl;
    cout << " Plus debit " << getbalance() << endl;
}

};
class FreedomAccount : public Account
{
    int transactioncharge;
    int interest;
public:
FreedomAccount(int chg, int inta, string t, int s, string a, double b):Account(t,s,a,b)
{
    transactioncharge=chg;
    interest=inta;
}
void calcinterest()
{
    credit(interest);
}

void debit(double dd)
{ int temp = getbalance()-dd;
  if (temp>0)
    {
        setbalance(-1*dd);
        setbalance(-1*transactioncharge);
    }
    else
        cout << " No balance for debit" << endl;
    cout << " Freedom debit " << getbalance() << endl;
}
void credit(double dd)
{
    setbalance(dd);
    setbalance(-1*transactioncharge);
    cout << " Freedom credit " << getbalance() << endl;
}

```

```

};
void starline (char a,int b)
{
    for (int i=0;i<b;i++)
        cout<<a;
}

int main()
{
    cout<<endl;
    starline ('*',60);
    cout<<"        BANK ACCOUNT PROJECT"<<endl;
    starline ('*',60);
    Account *list[10];
    char type;
    cout << " Enter account type Plus or Freedom for the five accounts  (P or F)"<<endl;
    starline ('_',60);
    cin >> type;
    if (type=='P')
    {
        PlusAccount* ac1 = new PlusAccount(1000,5," Bores Baid",35," A5543",5000);
        ac1->credit(500);
        ac1->debit(600);
        ac1->calcinterest();
    }

    else
    {
        FreedomAccount* ac1 = new FreedomAccount(5,3000," Bores Baid",35,"
A5543",5000);
        ac1->credit(500);
        ac1->debit(600);
        ac1->calcinterest();
    }

    cin >> type;
    if (type=='P')
        PlusAccount* ac2 = new PlusAccount(1000,5," Noble Enmark",36," A5544",3500);
    else
        FreedomAccount* ac2=new FreedomAccount(5,3000," Noble Enmark",36,"
A5544",3500);

    cin >> type;
    if (type=='P')
        PlusAccount* ac3 = new PlusAccount(1000,5," Markus Vivani",37," A5545",5500);
    else
        FreedomAccount* ac3 = new FreedomAccount(5,3000," Markus Vivani",37,"
A5545",5500);

```

```

cin >> type;
if (type=='P')
    PlusAccount* ac4 = new PlusAccount(1000,5," Noters Wayne",40," A5547",6500);
else
    FreedomAccount* ac4 = new FreedomAccount(5, 3000," Noters Wayne",40,"
A5547",6500);

cin >> type;
if (type=='P')
{
    PlusAccount* ac5 = new PlusAccount(1000,5," Pablo Vincent",41," A5549",7500);
    ac5->credit(500);
}
else
{
    FreedomAccount* ac5 = new FreedomAccount(5, 3000," Pablo Vincent",41,"
A5549",7500);
    ac5->credit(500);
}
starline ('*',60);
}

```

Output

```

*****
                        BANK ACCOUNT PROJECT
*****
Enter account type Plus or Freedom for the five accounts
(P or F)

P
Account credit, 5500
Plus debit 4900
Account credit, 5145

1000,5,35,5000
Freedom credit 7995
*****
[Program finished]

```

