# SOFTWARE DEVELOPMENT FUNDAMENTALS-II

# TUTORIAL – 3

1-

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

 using namespace std;

class book{
        int BookNumber;
        string BookName;
        string Author;
        string Publisher;
        float Price;
        int NumberOfCopies;
        int NumberOfCopiesIssued = 0;
    public:
        void input(int num,string name,string author,string publisher,float price,int
Copies,int CopiesIssued){
            BookNumber = num;
            BookName = name;
            Author = author;
            Publisher = publisher;
            Price = price;
            NumberOfCopies = Copies;
            NumberOfCopiesIssued = CopiesIssued;
        }
        int canIssued(){
            if((NumberOfCopies - NumberOfCopiesIssued) > 0){
                NumberOfCopiesIssued++;
                return 1;
            }
            else
            return 0;
        }
        int bookReturn(){
            if(NumberOfCopiesIssued > 0){
                NumberOfCopiesIssued--;
                return 1;
            }
            else
            return 0;
        }
```

```
        void displayBook(){
            cout<<"\n\tBook id - "<<BookNumber;
            cout<<"\n\tBook Name - "<<BookName;
            cout<<"\n\tBook Author - "<<Author;
            cout<<"\n\tBook publisher - "<<Publisher;
            cout<<"\n\tBook Price - "<<Price;
            cout<<"\n\tBook Total Copies - "<<NumberOfCopies;
            cout<<"\n\tBook Copies Issued - "<<NumberOfCopiesIssued;
        }
        int returnID(){
            return BookNumber;
        }
};

int main(){
    book books[3];
    books[0].input(1001,"Gulliver","Jonathan","S.Chand",100.8,2,1);
    books[1].input(1002,"Einstien","Mike hollow","Pradeep",200.0,2,2);
    books[2].input(1003,"Optics","Bose","Shivalal",400.50,3,1);
    int decide, id, i=0;
    cout<<"Enter the book-id : ";cin>>id;
    for (i = 0; i < 3; i++){
        if(id==books[i].returnID()){
            break;
        }
    }
    int temp;
    while(decide){
    cout<<"\n\tEnter 1 to issue a book\n\tEnter 2 to Return a book\n\tEnter 3 to diplay
the details of book\n\tEnter 0 to quit\n\tEnter your Choice : ";
    cin>>decide;
    switch(decide){
            case 1: temp = books[i].canIssued();
                    if(temp == 1)
                        cout<<"Isseued Successfully....\n";
                    else
                        cout<<"Book not issued....\n";
                    break;
            case 2: temp = books[i].bookReturn();
                    if(temp == 1)
                        cout<<"Returned Successfully....\n";
                    else
                        cout<<"Book not Returned....\n";
                    break;
            case 3: books[i].displayBook();
                    break;
            case 0 : break;
            default: cout<<"INVALID CHOICE";
        }
    }
    return 0;
}
```

```
Enter the book-id : 1001

        Enter 1 to issue a book
        Enter 2 to Return a book
        Enter 3 to diplay the details of book
        Enter 0 to quit
        Enter your Choice : 1
Isseued Successfully....

        Enter 1 to issue a book
        Enter 2 to Return a book
        Enter 3 to diplay the details of book
        Enter 0 to quit
        Enter your Choice : 2
Returned Successfully....

        Enter 1 to issue a book
        Enter 2 to Return a book
        Enter 3 to diplay the details of book
        Enter 0 to quit
        Enter your Choice : 3

        Book id - 1001
        Book Name - Gulliver
        Book Author - Jonathan
        Book publisher - S.Chand
        Book Price - 100.8
```

```
  Book Total Copies - 2
  Book Copies Issued - 1
  Enter 1 to issue a book
  Enter 2 to Return a book
  Enter 3 to diplay the details of book
  Enter 0 to quit
  Enter your Choice : o
```

## SOLUTION-2

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

 using namespace std;

class Customer{
    string name;
    int acno;
    char TypeOfAccount;
    float BalanceAmount;
    public:
    void input(string namein,int acnoin,char Toain,float BAin){
        name = namein;
        acno = acnoin;
        TypeOfAccount = Toain;
        BalanceAmount = BAin;
    }
    void deposit(float num){
        BalanceAmount+=num;
        cout<<"\n\tdeposited...";
    }

    void withdraw(float num){
        if(BalanceAmount - num < 0){
            cout<<"\n\tInsufficiant amount....";
        }
        else{
            BalanceAmount-=num;
            cout<<"\n\tWithdrawn successfully....";
        }
    }
    void display(){
        cout<<"\n\tName : "<<name<<"\n\tAcno : "<<acno<<"\n\tType of
Account"<<TypeOfAccount;
        cout<<"\nBalance : "<<BalanceAmount<<endl;
    }
    int retacno(){
        return acno;
    }
};

int main(){
    Customer cust[10];
    int id,i,flag=0;
```

```
    int decide = 1;
    cust[0].input("Hardik",300,'S',12000);
    cust[1].input("Aryan",301,'S',820000);
    cust[2].input("Adesh",302,'C',10000);
    cust[3].input("Yashveer",303,'S',100000);
    cust[4].input("Mradul",304,'S',127000);
    cust[5].input("Mohini",305,'C',17000);
    cust[6].input("Jatin",306,'S',12000);
    cust[7].input("Pradyot",307,'S',27000);
    cust[8].input("Aradhya",308,'S',120000);
    cust[9].input("Ayush",309,'C',15000);
    while(decide){
    cout<<"Enter A/c no : ";cin>>id;
        for(i=0;i<10;i++){
            if(cust[i].retacno()==id){
                cout<<"here";
                flag = 1;
                break;
            }
        }
        if(flag==1){
            cout<<"\n\tEnter 1 to withdraw \n\tEnter 2 to Deposit\n\tEnter 3 to display
your details\n\tEnter your choice : ";
            cin>>decide;
            if(decide == 1){
                float num;
                cout<<"\n\nt\tEnter Amount to withdraw : ";
                cin>>num;
                cust[i].withdraw(num);
            }
            else if(decide==2){
                float num;
                cout<<"\n\n\tEnter Amount to withdraw : ";
                cin>>num;
                cust[i].deposit(num);
            }
            else if(decide==3){
                cust[i].display();
            }
        }

        if(flag==0)
        cout<<"\n\tNOT FOUND........?";
        cout<<"\n\tEnter 0 to exit 1 to continue : ";
        cin>>decide;
        if(decide==0)
        break;
    }

    return 0;
}
```

```
Enter A/c no : 300
here
        Enter 1 to withdraw
        Enter 2 to Deposit
        Enter 3 to display your details
        Enter your choice : 1


t       Enter Amount to withdraw : 1000

        Withdrawn successfully....
        Enter 0 to exit 1 to continue : 1
Enter A/c no : 300
here
        Enter 1 to withdraw
        Enter 2 to Deposit
        Enter 3 to display your details
        Enter your choice : 3

        Name : Hardik
        Acno : 300
        Type of AccountS
Balance : 11000

        Enter 0 to exit 1 to continue : 0
```

## SOLUTION-3

```
 static data variables have only one copy of them i.e. they are initialised only once in a program.
 for the static data members in class the static data members are common to all the instances.
```

## SOLUTION-4

```
 i)  SmallObj
 ii) Private - some,more
 iii)Private - err_1()
 Public members- Xdata(int d),Ydata()
 iv)  Xdata(int d)
```