**Lab 4**

***1.*** *Write C++ Program to swap two variable using reference variables.*

#include<iostream>

#include<conio.h>

using namespace std;

void swap(int &a,int &b)

{

a=a-b;

b=a+b;

a=b-a;

}

int main()

{

int a,b;

cin>>a>>b;

swap(a,b);

cout<<a<<" "<<b;

getch();

}

***2.*** *Create four integers, four pointers to these integers and four references to them. Store these pointers and references in two arrays and print out the values of four integers using these arrays.*

#include<iostream>

#include<conio.h>

using namespace std;

int main()

{

int a,b,c,d,i;

int\* p=&a,\*q=&b,\*r=&c,\*s=&d;

int& w=a,&x=b,&y=c,&z=d;

cin>>a>>b>>c>>d;

int \*\*t[]={&p,&q,&r,&s},m[4]={w,x,y,z};

cout<<"Using pointer- ";

for(i=0;i<4;i++)

cout<<\*\*t[i]<<" ";

cout<<endl<<"Using reference- ";

for(i=0;i<4;i++)

cout<<m[i]<<" ";

getch();

}

***3.*** *Create a class rectangle with attributes length and width. Provide member functions that calculate the perimeter and area of the rectangle. Provide member functions to get the values from users and display the values of member variables. Write a program to test the class.*

#include<iostream>

#include<conio.h>

using namespace std;

class rec{

float l,b,area,pr;

public:

void get();

void ar();

void pri();

void dis();

};

void rec::get()

{

cin>>l>>b;

ar();

}

void rec::ar()

{

area=l\*b;

pri();

}

void rec::pri()

{

pr=2\*(l+b);

dis();

}

void rec::dis()

{

cout<<"Area="<<area<<"\nPerimeter="<<pr;

}

int main()

{

rec a;

a.get();

getch();

}

***4.*** *Write a function that accepts two arguments: a string name of a movie and an integer running time in minutes. Provide a default value for the minutes so that if you call the function without an integer argument, the minutes default to 90. Write a main() function that proves you can call the function with a string argument alone as well as with a string and an integer. Save the file as Movie.cpp.*

#include<iostream>

#include<conio.h>

#include<stdio.h>

using namespace std;

void movie(char \*a,int b=90)

{

cout<<"Movie-";

puts(a);

cout<<"\nRunning Time-"<<b;

}

int main()

{

int b;

char a[20];

gets(a);

//cin>>b;

movie(a);

movie(a,120);

getch();

}

***5.*** *Create a structure named Shirt that has the public data members collarsize and sleeveLength. Create a structure named Pants that has the public data members waistSize and inSeam. Write a program that declares one object of each type Shirt and Pants and assigns values to the objects’ data fields. Write two overloaded functions named displayClothingFacts(). One version of the function takes a Shirt object as an argument; the other version takes a Pants object. Each version displays the facts about the piece of clothing. Your main() function should demonstrate that you can call displayClothingFacts() with either type of clothing. Save the file as Shirt.cpp*

#include<iostream>

#include<conio.h>

#include<stdio.h>

using namespace std;

class Movie{

int yr;

char t[20],d[20];

public:

void setTitle();

void setYear();

void setDirector();

void dis();

};

void Movie::setTitle()

{

gets(t);

setYear();

}

void Movie::setYear()

{

cin>>yr;

fflush(stdin);

setDirector();

}

void Movie::setDirector()

{

gets(d);

dis();

}

void Movie::dis()

{

cout<<"Movie-";

puts(t);

cout<<"Year-"<<yr<<"\nDirector-";

puts(d);

}

int main()

{

Movie myFavoriteMovie;

myFavoriteMovie.setTitle();

getch();

}

***6.*** *Define a class named Movie. Include private fields for the title, year, and name of the director. Include three public functions with the prototypes void Movie::setTitle(cstring); , void Movie::setYear(int); and void Movie::setDirector(string);. Include another function that displays all the information about a Movie. Write a main() function that declares a movie object named myFavoriteMovie. Set and display the object’s fields. Save the file as Movie.cpp*.

#include<iostream>

#include<conio.h>

#include<stdio.h>

#include<string.h>

using namespace std;

class movie{

char tit[30];

int ye;

char direct[20];

public:

void settitle(char ar[]);

void setyear(int);

void setdirector(char ar1[]);

void show();

};

void movie::settitle(char ar[])

{

strcpy(tit,ar);

}

void movie::setyear(int n)

{

ye=n;

}

void movie::setdirector(char ar1[])

{

strcpy(direct,ar1);

}

void movie:: show()

{

cout<<"movie title:";

puts(tit);

cout<<"\nyear of relese:"<<ye;

cout<<"\ndirector:";

puts(direct);

}

main()

{

movie m;

char ar[30]; char ar1[30];

int n;

cout<<"enter title:";

gets(ar);

cout<<"enter year of release:";

cin>>n;

cout<<"enter director`s name :";

fflush(stdin);

gets(ar1);

m.settitle(ar);

m.setyear(n);

m.setdirector(ar1);

m.show();

getch();

}