**Programs in C++**

Q1)

Code:

#include <iostream>

using namespace std;

int main()

{

int a,b,c,d;

cout<<"enter the first number";

cin>>a;

cout<<"enter the second number";

cin>>b;

cout<<"enter the third number";

cin>>c;

cout<<"enter the fourth number";

cin>>d;

if(a>=b && a>=c && a>=d)

{

cout<<a<<"is the greatest number"<<endl;

}

else if(b>=a && b>=c && b>=d)

{

cout<<b<<"is the greatest number"<<endl;

}

else if(c>=a && c>=b && c>=d)

{

cout<<c<<"is the greatest number"<<endl;

}

else

{

cout<<d<<"is the greatest number"<<endl;

}

return 0;

}

Output:

enter the second number45

enter the third number234

enter the fourth number12

234is the greatest number

**...Program finished with exit code 0**

**Press ENTER to exit console.**

Q2)

Code:

#include <iostream>

using namespace std;

int main()

{

char ch;

cout<<"enter the character";

cin>>ch;

if((ch>='a' && ch<='z')||(ch>='A' && ch<='Z'))

{

cout<<"it is an alphabet";

}

else if(ch>='0' && ch<='9')

{

cout<<"it is a digit";

}

else

{

cout<<"it is a special symbol";

}

return 0;

}

Output:

enter the charactere

it is an alphabet

**...Program finished with exit code 0**

**Press ENTER to exit console.**

Q3)

Code:

#include <iostream>

using namespace std;

int main()

{

char ch;

cout<<"do you want to use this program?";

cin>>ch;

if(ch=='n')

{

cout<<"Are you really sure that you do not want to use this program?"<<endl;

int i=1;

char str[7]="really";

char c='y';

cin>>c;

while(c=='y')

{

cout<<"Are you";

cout<<" ";

int j=0;

while (j<=i)

{

cout<<"really";

cout<<" ";

j++;

}

cout<<"sure that you do not want to use this program?";

cout<<endl;

//char d='y';

cin>>c;

i++;

}

}

return 0;

}

Output:

do you want to use this program?n

Are you really sure that you do not want to use this program?

y

Are you really really sure that you do not want to use this program?

y

Are you really really really sure that you do not want to use this program?

y

Are you really really really really sure that you do not want to use this program?

n

**...Program finished with exit code 0**

**Press ENTER to exit console.**

Q4)

Code:

#include <iostream>

using namespace std;

int main()

{

int n;

int a,r,d=0;

cout<<"enter a number";

cin>>n;

a=n;

while(a>0)

{

r=a%10;

d=d\*10+r;

a=a/10;

}

if(n==d)

{

cout<<"It is a palindrome";

}

else

{

cout<<"It is not a palindrome";

}

return 0;

}

Output:

enter a number343

It is a palindrome

**...Program finished with exit code 0**

**Press ENTER to exit console.**

Q5)

Code:

#include <iostream>

using namespace std;

int main()

{

int n;

bool b=true;

int d=2;

cout<<"enter a number";

cin>>n;

while(d<n)

{

if(n%d==0)

{

b=false;

break;

}

d++;

}

if(b)

{

cout<<"It is prime number";

}

else

{

cout<<"It is not a prime number";

}

return 0;

}

Output:

enter a number23

It is prime number

**...Program finished with exit code 0**

**Press ENTER to exit console.**

Q6)

Code:

#include <iostream>

using namespace std;

int main()

{

int day;

cout<<"enter the day number";

cin>>day;

switch(day)

{

case 1: cout<<"Monday";

break;

case 2: cout<<"Tuesday";

break;

case 3: cout<<"Wednesday";

break;

case 4: cout<<"Thursday";

break;

case 5: cout<<"Friday";

break;

case 6: cout<<"Saturday";

break;

case 7: cout<<"Sunday";

break;

default: cout<<"Invalid Entry";

}

return 0;

}

Output:

enter the day number4

Thursday

**...Program finished with exit code 0**

**Press ENTER to exit console.**

Q7)

Code:

#include <iostream>

using namespace std;

int main()

{

int n;

cout<<"enter the number of rows";

cin>>n;

for(int i=1;i<=n;i++)

{

for(int j=1;j<=i;j++)

{

char ch='A'+j-1;

cout<<ch;

}

cout<<endl;

}

}

Output:

enter the number of rows5

A

AB

ABC

ABCD

ABCDE

**...Program finished with exit code 0**

**Press ENTER to exit console.**

Q8)

Code:

#include <iostream>

using namespace std;

int main()

{

int n;

cout<<"enter the number of rows";

cin>>n;

for(int i=1;i<=n;i++)

{

for(int j=1;j<=n-i+1;j++)

{

cout<<"\*";

}

cout<<endl;

}

}

Output:

enter the number of rows5

\*\*\*\*\*

\*\*\*\*

\*\*\*

\*\*

\*

**...Program finished with exit code 0**

**Press ENTER to exit console.**

Q9)

Code:

#include <iostream>

using namespace std;

int main()

{

int n;

cout<<"enter the number of rows";

cin>>n;

for(int i=1;i<=n;i++)

{

for(int k=1;k<=n-i;k++)

{

cout<<" ";

}

for(int j=1;j<=i;j++)

{

cout<<"\*";

}

for(int j=i-1;j>=1;j--)

{

cout<<"\*";

}

cout<<endl;

}

return 0;

}

Output:

enter the number of rows3

  \*

 \*\*\*

\*\*\*\*\*

**...Program finished with exit code 0**

**Press ENTER to exit console.**

Q10)

Code:

#include <iostream>

using namespace std;

int main()

{

int n=9;

for(int i=1;i<=n-2;i++)

{

if(i==4)

{

for(int j=1;j<=n;j++)

{

cout<<"\*";

}

}

else

{

for(int j=1;j<=n;j++)

{

if(j==5)

{

cout<<"\*";

}

else

{

cout<<" ";

}

}

}

cout<<endl;

}

return 0;

}

Output:

 \*

    \*

    \*

\*\*\*\*\*\*\*\*\*

    \*

    \*

    \*

**...Program finished with exit code 0**

**Press ENTER to exit console.**

Q11)

Code:

#include <iostream>

using namespace std;

float area(float length, float breadth)

{

return length\*breadth;

}

int main()

{

float length,breadth;

cout<<"enter the length";

cin>>length;

cout<<"enter the breadth";

cin>>breadth;

cout<<"the ares is"<<" "<<area(length,breadth)<<endl;

return 0;

}

Output:

enter the length56.3

enter the breadth78.8

the ares is 4436.44

**...Program finished with exit code 0**

**Press ENTER to exit console.**

Q12)

Code:

#include <iostream>

#define pi 3.14;

using namespace std;

void area()

{

float radius;

cout<<"enter the radius of the circle";

cin>>radius;

float areacircle=radius\*radius\*pi;

cout<<"the area of the circle is"<<" "<<areacircle<<endl;

}

int main()

{

area();

return 0;

}

Output:

enter the radius of the circle3.98

the area of the circle is 49.7389

**...Program finished with exit code 0**

**Press ENTER to exit console.**

Q13)

Code:

#include <iostream>

using namespace std;

int add(int \*a,int \*b)

{

int c=\*a+\*b;

cout<<\*a<<"+"<<\*b<<"="<<c<<endl;

int temp=\*a;

\*a=\*b;

\*b=temp;

int d=\*a+\*b;

return d;

}

int main()

{

int a,b,c;

cout<<"enter the first number";

cin>>a;

cout<<"enter the second number";

cin>>b;

c=add(&a,&b);

cout<<a<<"+"<<b<<"="<<c;

return 0;

}

Output:

enter the first number34

enter the second number56

34+56=90

56+34=90

**...Program finished with exit code 0**

**Press ENTER to exit console.**

Q14)

Code:

#include <iostream>

using namespace std;

int main()

{

int a[10],n;

cout<<"enter the array size";

cin>>n;

cout<<"enter the array elements";

for(int i=0;i<n;i++)

{

cin>>a[i];

}

cout<<"the array is"<<endl;

for(int i=0;i<n;i++)

{

cout<<a[i]<<" ";

}

cout<<endl;

return 0;

}

Output:

enter the array size5

enter the array elements1 2 3 2 3

the array is

1 2 3 2 3

**...Program finished with exit code 0**

**Press ENTER to exit console.**

Q15)

Code:

#include <iostream>

using namespace std;

int main()

{

int a[10],n;

cout<<"enter the array size";

cin>>n;

cout<<"enter the array elements";

for(int i=0;i<n;i++)

{

cin>>\*(a+i);

}

cout<<"the array in reverse order is"<<endl;

for(int i=n-1;i>=0;i--)

{

cout<<\*(a+i)<<" ";

}

cout<<endl;

return 0;

}

Output:

enter the array size6

enter the array elements23 4 5 2 34 12

the array in reverse order is

12 34 2 5 4 23

**...Program finished with exit code 0**

**Press ENTER to exit console.**

Q16)

Code:

#include <iostream>

using namespace std;

int sumarray(int a[],int n)

{

int sum=0;

for(int i=0;i<n;i++)

{

sum=sum+\*(a+i);

}

return sum;

}

int main()

{

int a[10],n;

cout<<"enter the array size";

cin>>n;

cout<<"enter the array elements";

for(int i=0;i<n;i++)

{

cin>>\*(a+i);

}

cout<<"the sum of array elements is"<<sumarray(a,n);

return 0;

}

Output:

enter the array size7

enter the array elements3 4 223 67 53 21 4 3

the sum of array elements is375

**...Program finished with exit code 0**

**Press ENTER to exit console.**

Q17)

Code:

#include <iostream>

using namespace std;

void copy(int a[],int n,int b[])

{

for(int i=0;i<n;i++)

{

\*(b+i)=\*(a+i);

}

}

int main()

{

int a[10],n,b[10];

cout<<"enter the array size";

cin>>n;

cout<<"enter the array elements";

for(int i=0;i<n;i++)

{

cin>>\*(a+i);

}

cout<<"the copied array is"<<endl;

copy(a,n,b);

for(int i=0;i<n;i++)

{

cout<<\*(b+i)<<" ";

}

cout<<endl;

return 0;

}

Output:

enter the array size6

enter the array elements1 2 3 4 5 6

the copied array is

1 2 3 4 5 6

**...Program finished with exit code 0**

**Press ENTER to exit console.**

Q18)

Code:

#include <iostream>

using namespace std;

int main()

{

int a[100][100];

int r,c;

cout<<"enter the no of rows";

cin>>r;

cout<<"enter the no of columns";

cin>>c;

cout<<"enter the array elements";

for(int i=0;i<r;i++)

{

for(int j=0;j<c;j++)

{

cin>>a[i][j];

}

}

cout<<"the array in row major form is"<<endl;

for(int i=0;i<r;i++)

{

for(int j=0;j<c;j++)

{

cout<<a[i][j]<<" ";

}

cout<<endl;

}

cout<<"the array in column major form is"<<endl;

for(int i=0;i<r;i++)

{

for(int j=0;j<c;j++)

{

cout<<a[j][i]<<" ";

}

cout<<endl;

}

return 0;

}

Output:

enter the no of rows3

enter the no of columns3

enter the array elements1 2 3

                        4 5 6

                       7 8 9

the array in row major form is

1 2 3

4 5 6

7 8 9

the array in column major form is

1 4 7

2 5 8

3 6 9

**...Program finished with exit code 0**

**Press ENTER to exit console.**

Q19)

Code:

#include <iostream>

using namespace std;

int sum(int a[][100],int r,int c)

{

int sum=0;

for(int i=0;i<r;i++)

{

for(int j=0;j<c;j++)

{

sum=sum+\*(\*(a+i)+j);

}

}

return sum;

}

int main()

{

int a[100][100];

int r,c;

cout<<"enter the no of rows";

cin>>r;

cout<<"enter the no of columns";

cin>>c;

cout<<"enter the array elements";

for(int i=0;i<r;i++)

{

for(int j=0;j<c;j++)

{

cin>>a[i][j];

}

}

cout<<"the sum of all the elements of 2D array is"<<sum(a,r,c)<<endl;

return 0;

}

Output:

enter the no of rows3

enter the no of columns4

enter the array elements4 5 3 2

                        4 2 1 4

                        7 6 4 3

the sum of all the elements of 2D array is45

**...Program finished with exit code 0**

**Press ENTER to exit console.**

Q20)

Code:

#include <iostream>

using namespace std;

void addarray(int a[][3],int b[][3],int c[][3])

{

for(int i=0;i<3;i++)

{

for(int j=0;j<3;j++)

{

\*(\*(c+i)+j)=\*(\*(b+i)+j)+\*(\*(a+i)+j);

}

}

}

int main()

{

int a[3][3],b[3][3],c[3][3];

cout<<"enter the array1 elements";

for(int i=0;i<3;i++)

{

for(int j=0;j<3;j++)

{

cin>>\*(\*(a+i)+j);

}

}

cout<<"enter the array2 elements";

for(int i=0;i<3;i++)

{

for(int j=0;j<3;j++)

{

cin>>\*(\*(b+i)+j);

}

}

addarray(a,b,c);

cout<<"the sum of two arrays is"<<endl;

for(int i=0;i<3;i++)

{

for(int j=0;j<3;j++)

{

cout<<\*(\*(c+i)+j)<<" ";

}

cout<<endl;

}

return 0;

}

Output:

enter the array1 elements1 2 3

                         4 5 6

                         7 8 9

enter the array2 elements1 1 2

                         1 2 3

                         2 3 4

the sum of two arrays is

2 3 5

5 7 9

9 11 13

**...Program finished with exit code 0**

**Press ENTER to exit console.**

Q21)

Code:

#include <iostream>

using namespace std;

void matmulti(int a[][100],int r1,int b[][100],int c2,int c[][100],int p)

{

for(int i=0;i<r1;i++)

{

for(int j=0;j<c2;j++)

{

int sum=0;

for(int k=0;k<p;k++)

{

int d=a[i][k]\*b[k][j];

sum=sum+d;

}

c[i][j]=sum;

}

}

}

int main()

{

int a[100][100],b[100][100],r1,r2,c1,c2,c[100][100];

cout<<"enter the no of rows of array1";

cin>>r1;

cout<<"ente the no of columns of array1";

cin>>c1;

cout<<"enter the array1 elements";

for(int i=0;i<r1;i++)

{

for(int j=0;j<c1;j++)

{

cin>>\*(\*(a+i)+j);

}

}

cout<<"enter the no of rows of array2";

cin>>r2;

cout<<"ente the no of columns of array2";

cin>>c2;

cout<<"enter the array2 elements";

for(int i=0;i<r2;i++)

{

for(int j=0;j<c2;j++)

{

cin>>\*(\*(b+i)+j);

}

}

if(r2!=c1)

{

cout<<"the matrix muliplication is not possible"<<endl;

}

else

{

int p=c1;

matmulti(a,r1,b,c2,c,p);

cout<<"the result is"<<endl;

for(int i=0;i<r1;i++)

{

for(int j=0;j<c2;j++)

{

cout<<\*(\*(c+i)+j)<<" ";

}

cout<<endl;

}

}

return 0;

}

Output:

enter the no of rows of array12

ente the no of columns of array13

enter the array1 elements1 2 3

                         4 5 6

enter the no of rows of array23

ente the no of columns of array22

enter the array2 elements1 4

                         2 5

                         3 6

the result is

14 32

32 77

**...Program finished with exit code 0**

**Press ENTER to exit console.**

Q22)

Code:

#include <iostream>

using namespace std;

class operation

{

float a;

float b;

public:

char choice;

float add()

{

cout<<"enter the first number";

cin>>a;

cout<<"enter the second number";

cin>>b;

float c=a+b;

return c;

}

float subtract()

{

cout<<"enter the first number";

cin>>a;

cout<<"enter the second number";

cin>>b;

float c=a-b;

return c;

}

float multiply()

{

cout<<"enter the first number";

cin>>a;

cout<<"enter the second number";

cin>>b;

float c=a\*b;

return c;

}

float divide()

{

cout<<"enter the first number";

cin>>a;

cout<<"enter the second number";

cin>>b;

float c=a/b;

return c;

}

};

int main()

{

//int choice;

char ch='y';

operation o;

do{

cout<<"Main Menu"<<endl;

cout<<"+.Addition"<<endl;

cout<<"-.Subtraction"<<endl;

cout<<"\*.Multiplication"<<endl;

cout<<"/.Division"<<endl;

cout<<"enter the choice"<<endl;

cin>>o.choice;

switch(o.choice)

{

case '+':cout<<"the result is: "<<o.add()<<endl;

break;

case '-':cout<<"the result is: "<<o.subtract()<<endl;

break;

case '\*':cout<<"the result is: "<<o.multiply()<<endl;

break;

case '/':cout<<"the result is: "<<o.divide()<<endl;

break;

default:cout<<"invalid entry"<<endl;

}

cout<<"do you want to continue"<<endl;

cin>>ch;

}while(ch=='y' || ch=='Y');

return 0;

}

Output:

Main Menu

+.Addition

-.Subtraction

\*.Multiplication

/.Division

enter the choice

+

enter the first number1

enter the second number34

the result is: 35

do you want to continue

y

Main Menu

+.Addition

-.Subtraction

\*.Multiplication

/.Division

enter the choice

/

enter the first number34.5623

enter the second number23.4567

the result is: 1.47345

do you want to continue

y

Main Menu

+.Addition

-.Subtraction

\*.Multiplication

/.Division

enter the choice

-

enter the first number3857693.3

enter the second number4358934036.90

the result is: -4.35508e+09

do you want to continue

n

**...Program finished with exit code 0**

**Press ENTER to exit console.**

Q23)

Code:

#include <iostream>

using namespace std;

#define pi 3.14

class area

{

float area;

public:

float circle(float s1)

{

area=s1\*s1\*pi;

return area;

}

float square(float s1)

{

area=s1\*s1;

return area;

}

float rectangle(float s1,float s2)

{

area=s1\*s2;

return area;

}

};

int main()

{

area a;

float s1,s2;

cout<<"enter the first dimension"<<endl;

cin>>s1;

cout<<"enter the second dimension"<<endl;

cin>>s2;

if(s2==0 || s1==0)

{

cout<<"The area of the circle is "<<a.circle(s1)<<endl;

}

else if(s1==s2)

{

cout<<"The area of the square is "<<a.square(s1)<<endl;

}

else

{

cout<<"The area of the rectangle is "<<a.rectangle(s1,s2)<<endl;

}

return 0;

}

Output:

enter the first dimension

23

enter the second dimension

0

The area of the circle is 1661.06

**...Program finished with exit code 0**

**Press ENTER to exit console.**

Q24)

Code:

#include <iostream>

using namespace std;

class tollbooth

{

unsigned int tc;

double tm;

unsigned int tp;

unsigned int tnp;

public:

tollbooth(): tc(0), tm(0.00), tp(0), tnp(0)

{}

void payingCar()

{

tc++;

tm+=0.50;

tp++;

}

void nopayCar()

{

tnp++;

tc++;

}

void display()

{

cout<<"Total cars"<<tc<<endl;

cout<<"No of Cars done the payment"<<tp<<endl;

cout<<"No of Cars did not do the payment"<<tnp<<endl;

cout<<"Total Cash Collected"<<tm<<endl;

}

};

int main()

{

tollbooth t;

char ch='y';

int choice;

do{

cout<<"Main Menu"<<endl;

cout<<"0.Cars Made No Payment"<<endl;

cout<<"1.Cars Made Payment"<<endl;

cout<<"2.Display"<<endl;

cout<<"Enter the choice"<<endl;

cin>>choice;

switch(choice)

{

case 0: t.nopayCar();

break;

case 1: t.payingCar();

break;

case 2: t.display();

break;

default:cout<<"invalid entry"<<endl;

}

cout<<"Do you want to continue"<<endl;

cin>>ch;

}while(ch=='y' || ch=='Y');

return 0;

}

OR

#include <iostream>

using namespace std;

class tollbooth

{

unsigned int tc;

double tm;

unsigned int tp;

unsigned int tnp;

public:

tollbooth(unsigned int a,double b,unsigned int c,unsigned int d)

{

tc=a;

tm=b;

tp=c;

tnp=d;

}

void payingCar()

{

tc++;

tm+=0.50;

tp++;

}

void nopayCar()

{

tnp++;

tc++;

}

void display()

{

cout<<"Total cars"<<tc<<endl;

cout<<"No of Cars done the payment"<<tp<<endl;

cout<<"No of Cars did not do the payment"<<tnp<<endl;

cout<<"Total Cash Collected"<<tm<<endl;

}

};

int main()

{

tollbooth t(0,0.00,0,0);

char ch='y';

int choice;

do{

cout<<"Main Menu"<<endl;

cout<<"0.Cars Made No Payment"<<endl;

cout<<"1.Cars Made Payment"<<endl;

cout<<"2.Display"<<endl;

cout<<"Enter the choice"<<endl;

cin>>choice;

switch(choice)

{

case 0: t.nopayCar();

break;

case 1: t.payingCar();

break;

case 2: t.display();

break;

default:cout<<"invalid entry"<<endl;

}

cout<<"Do you want to continue"<<endl;

cin>>ch;

}while(ch=='y' || ch=='Y');

return 0;

}

Output:

Main Menu

0.Cars Made No Payment

1.Cars Made Payment

2.Display

Enter the choice

1

Do you want to continue

y

Main Menu

0.Cars Made No Payment

1.Cars Made Payment

2.Display

Enter the choice

0

Do you want to continue

y

Main Menu

0.Cars Made No Payment

1.Cars Made Payment

2.Display

Enter the choice

1

Do you want to continue

y

Main Menu

0.Cars Made No Payment

1.Cars Made Payment

2.Display

Enter the choice

0

Do you want to continue

y

Main Menu

0.Cars Made No Payment

1.Cars Made Payment

2.Display

Enter the choice

2

Total cars4

No of Cars done the payment2

No of Cars did not do the payment2

Total Cash Collected1

Do you want to continue

n

**...Program finished with exit code 0**

**Press ENTER to exit console. .**

Q25)

Code:

#include <iostream>

using namespace std;

class fraction

{

int num1,num2,den1,den2;

public:

fraction(): num1(0), num2(0), den1(1), den2(1)

{}

void fadd();

void fsubtract();

void fmultiply();

void fdivide();

~fraction()

{}

};

void fraction::fadd()

{

cout<<"enter the fraction 1";

cin>>num1>>den1;

cout<<"enter the fraction 2";

cin>>num2>>den2;

int c=(num1\*den2)+(num2\*den1);

int d=den1\*den2;

cout<<"the fraction sum is "<<c<<"/"<<d<<endl;

}

void fraction::fsubtract()

{

cout<<"enter the fraction 1";

cin>>num1>>den1;

cout<<"enter the fraction 2";

cin>>num2>>den2;

int c=(num1\*den2)-(num2\*den1);

int d=den1\*den2;

cout<<"the fraction difference is "<<c<<"/"<<d<<endl;

}

void fraction::fmultiply()

{

cout<<"enter the fraction 1";

cin>>num1>>den1;

cout<<"enter the fraction 2";

cin>>num2>>den2;

int c=num1\*den1;

int d=num2\*den2;

cout<<"the fraction multiplication is "<<c<<"/"<<d<<endl;

}

void fraction::fdivide()

{

cout<<"enter the fraction 1";

cin>>num1>>den1;

cout<<"enter the fraction 2";

cin>>num2>>den2;

int c=num1\*den2;

int d=num2\*den1;

cout<<"the fraction division is "<<c<<"/"<<d<<endl;

}

int main()

{

fraction f;

char choice;

char ch='y';

do{

cout<<"Main Menu"<<endl;

cout<<"+.Fraction Addition"<<endl;

cout<<"-.Fraction Subtraction"<<endl;

cout<<"\*.Fraction Multiplication"<<endl;

cout<<"/.Fraction Division"<<endl;

cout<<"enter the choice"<<endl;

cin>>choice;

switch(choice)

{

case '+':f.fadd();

break;

case '-':f.fsubtract();

break;

case '\*':f.fmultiply();

break;

case '/':f.fdivide();

break;

default:cout<<"invalid entry"<<endl;

}

cout<<"do you want to continue"<<endl;

cin>>ch;

}while(ch=='y' || ch=='Y');

return 0;

}

Output:

Main Menu

+.Fraction Addition

-.Fraction Subtraction

\*.Fraction Multiplication

/.Fraction Division

enter the choice

+

enter the fraction 11 3

enter the fraction 24 5

the fraction sum is 17/15

do you want to continue

y

Main Menu

+.Fraction Addition

-.Fraction Subtraction

\*.Fraction Multiplication

/.Fraction Division

enter the choice

/

enter the fraction 12 4

enter the fraction 21 7

the fraction division is 14/4

do you want to continue

y

Main Menu

+.Fraction Addition

-.Fraction Subtraction

\*.Fraction Multiplication

/.Fraction Division

enter the choice

\*

enter the fraction 13

5

enter the fraction 22 4

the fraction multiplication is 15/8

do you want to continue

n

**...Program finished with exit code 0**

**Press ENTER to exit console.**

Q 26)

Code:

#include <iostream>

using namespace std;

class tollbooth

{

unsigned int tc;

double tm;

unsigned int tp;

unsigned int tnp;

public:

tollbooth(): tc(0), tm(0.00), tp(0), tnp(0)

{}

tollbooth(const tollbooth &t1)

{

tc=t1.tc;

tm=t1.tm;

tp=t1.tp;

tnp=t1.tnp;

}

void payingCar()

{

tc++;

tm+=0.50;

tp++;

}

void nopayCar()

{

tnp++;

tc++;

}

void display()

{

cout<<"Total cars"<<tc<<endl;

cout<<"No of Cars done the payment"<<tp<<endl;

cout<<"No of Cars did not do the payment"<<tnp<<endl;

cout<<"Total Cash Collected"<<tm<<endl;

}

};

int main()

{

tollbooth t;

tollbooth t1=t;

char ch='y';

int choice;

do{

cout<<"Main Menu"<<endl;

cout<<"0.Cars Made No Payment"<<endl;

cout<<"1.Cars Made Payment"<<endl;

cout<<"2.Display"<<endl;

cout<<"Enter the choice"<<endl;

cin>>choice;

switch(choice)

{

case 0: t1.nopayCar();

break;

case 1: t1.payingCar();

break;

case 2: t1.display();

break;

default:cout<<"invalid entry"<<endl;

}

cout<<"Do you want to continue"<<endl;

cin>>ch;

}while(ch=='y' || ch=='Y');

return 0;

}

Output:

Main Menu

0.Cars Made No Payment

1.Cars Made Payment

2.Display

Enter the choice

1

Do you want to continue

y

Main Menu

0.Cars Made No Payment

1.Cars Made Payment

2.Display

Enter the choice

2

Total cars1

No of Cars done the payment1

No of Cars did not do the payment0

Total Cash Collected0.5

Do you want to continue

y

Main Menu

0.Cars Made No Payment

1.Cars Made Payment

2.Display

Enter the choice

0

Do you want to continue

y

Main Menu

0.Cars Made No Payment

1.Cars Made Payment

2.Display

Enter the choice

0

Do you want to continue

y

Main Menu

0.Cars Made No Payment

1.Cars Made Payment

2.Display

Enter the choice

1

Do you want to continue

y

Main Menu

0.Cars Made No Payment

1.Cars Made Payment

2.Display

Enter the choice

2

Total cars4

No of Cars done the payment2

No of Cars did not do the payment2

Total Cash Collected1

Do you want to continue

n

**...Program finished with exit code 0**

**Press ENTER to exit console.**

Q 27)

Code:

#include<iostream>

using namespace std;

class Time

{

int hours, minutes, seconds;

public:

Time(): hours(00), minutes(00), seconds(00)//Constructor overloading

{}//constructor1

Time(int h,int m,int s): hours(h), minutes(m), seconds(s)//Constructor overloading

{}//constructor2

void addtime(Time,Time);

void showtime()

{

cout<<"The time is"<<hours<<":"<<minutes<<":"<<seconds<<endl;

}

};

void Time::addtime(Time t1, Time t2)//Passing objects of the class Time as the function arguments

{

seconds=t1.seconds+t2.seconds;

while(seconds>=60)

{

seconds-=60;

minutes++;

}

minutes+=t1.minutes+t2.minutes;

while(minutes>=60)

{

minutes-=60;

hours++;

}

hours+=t1.hours+t2.hours;

}

int main()

{

Time t1(45,23,89);//calling constructor 2

Time t2(15,114,43);//calling constructor 2

Time t3;//calling constructor 1

t3.addtime(t1,t2);

t3.showtime();

}

Output:

The time is62:19:12

**...Program finished with exit code 0**

**Press ENTER to exit console.**

Q 28)

Code:

#include<iostream>

#include <string>

using namespace std;

class employee

{

string name;

string ss;

float basic;

string dept;

string wf;

float salary;

public:

int id;

employee(): name("Unknown Employee"), ss("Low"), basic(12000.00), dept("Nil"), wf("All Days"), salary(0.00), id(0)

{}

void inputdetails()

{

cout<<"Enter the name: "<<endl;

cin>>name;

cout<<"Enter the salaryscale: "<<endl;

cin>>ss;

cout<<"Enter the department: "<<endl;

cin>>dept;

}

string weekoff()

{

if(id%2==0)

{

wf="Saturday";

}

else

{

wf="Sunday";

}

return wf;

}

float computesalary()

{

float da,hra;

if(ss=="High")

{

da=basic\*0.25;

hra=basic\*1.20;

salary=da+hra+basic;

}

else if(ss=="Medium")

{

da=basic\*0.15;

hra=basic\*1;

salary=da+hra+basic;

}

else

{

salary=basic;

}

return salary;

}

void displaydetails()

{

cout<<"Employee ID: "<<id<<endl;

cout<<"Name: "<<name<<endl;

cout<<"Department: "<<dept<<endl;

cout<<"Salaryscale: "<<ss<<endl;

cout<<"Weekoff: "<<weekoff()<<endl;

cout<<"Salary: "<<computesalary()<<endl;

}

};

int main()

{

employee e[100];

int entries;

cout<<"Enter the no of entries: "<<endl;

cin>>entries;

for(int i=0;i<entries;i++)

{

cout<<"Enter the data:"<<endl;

e[i].id=i+1;

e[i].inputdetails();

}

cout<<"The employee details are:"<<endl;

for(int i=0;i<entries;i++)

{

e[i].displaydetails();

}

}

Output:

Enter the no of entries:

3

Enter the data:

Enter the name:

Shalu

Enter the salaryscale:

High

Enter the department:

EEE

Enter the data:

Enter the name:

Meena

Enter the salaryscale:

Medium

Enter the department:

Chemistry

Enter the data:

Enter the name:

Aisha

Enter the salaryscale:

Low

Enter the department:

CSE

The employee details are:

Employee ID: 1

Name: Shalu

Department: EEE

Salaryscale: High

Weekoff: Sunday

Salary: 29400

Employee ID: 2

Name: Meena

Department: Chemistry

Salaryscale: Medium

Weekoff: Sunday

Salary: 25800

Employee ID: 3

Name: Aisha

Department: CSE

Salaryscale: Low

Weekoff: Sunday

Salary: 12000

**...Program finished with exit code 0**

**Press ENTER to exit console.**

Q)

Code:

#include <iostream>

using namespace std;

class alu

{

public:

int A,B;

alu(): A(0), B(0)

{}

int add(alu);

};

int alu::add(alu c)

{

return c.A+c.B;

}

int main()

{

alu c;

cout<<"enter the first number";

cin>>c.A;

cout<<"enter the second number";

cin>>c.B;

cout<<"The result is:"<<c.add(c);

return 0;

}

Output:

enter the first number12

enter the second number23

The result is:35

**...Program finished with exit code 0**

**Press ENTER to exit console.**

Q)

Code:

#include <iostream>

using namespace std;

class alu

{

int A,B;

public:

alu(int a, int b): A(a), B(b)

{}

friend int add(alu);

};

int add(alu c)

{

return c.A+c.B;

}

int main()

{

int a,b;

cout<<"enter the first number";

cin>>a;

cout<<"enter the second number";

cin>>b;

alu c(a,b);

cout<<"The result is:"<<add(c);

return 0;

}

Output:

enter the first number23

enter the second number873

The result is:896

**...Program finished with exit code 0**

**Press ENTER to exit console.**

Q)

Code:

#include <iostream>

using namespace std;

class highest

{

int A,B,C;

public:

highest(int a, int b,int c): A(a), B(b), C(c)

{}

friend int greatest (highest);

};

int greatest(highest h)

{

return ((h.A>=h.B && h.A>=h.C)? h.A: ((h.B>=h.A && h.B>=h.C)? h.B: h.C));

}

int main()

{

int a,b,c;

cout<<"enter the first number";

cin>>a;

cout<<"enter the second number";

cin>>b;

cout<<"enter the third number";

cin>>c;

highest h(a,b,c);

cout<<"The result is:"<<greatest(h);

return 0;

}

Output:

enter the first number345

enter the second number234

enter the third number675

The result is:675

**...Program finished with exit code 0**

**Press ENTER to exit console.**

Q)

Code:

#include <iostream>

#include <string>

using namespace std;

#define pi 3.14

class circle

{

string cn;

float radius,area,perimeter;

public:

circle(): cn("circle 0"), radius(0.00), area(0.00), perimeter(0.00)

{}

void input()

{

cout<<"enter the circle name";

cin>>cn;

cout<<"enter the radius of the circle";

cin>>radius;

}

float pcircle()

{

perimeter=2\*pi\*radius;

return perimeter;

}

float acircle()

{

area=pi\*pi\*radius;

return area;

}

void display()

{

circle c[10];

cout<<"circle name:"<<cn<<endl;

cout<<"radius:"<<radius<<endl;

cout<<"the perimeter of the circle:"<<pcircle()<<endl;

cout<<"the area of the circle is"<<acircle()<<endl;

}

float value()

{

return area;

}

string name()

{

return cn;

}

};

int main()

{

circle c[100];

int n;

cout<<"enter the no of entities:";

cin>>n;

cout<<"enter the circle details:"<<endl;

for(int i=0;i<n;i++)

{

c[i].input();

}

cout<<"the result is:"<<endl;

for(int i=0;i<n;i++)

{

c[i].display();

}

float largest=c[0].value();

int index=0;

for(int i=1;i<n;i++)

{

if(largest<c[i].value())

{

largest=c[i].value();

index=i;

}

}

cout<<"the greatest circle is:"<<c[index].name()<<endl;

return 0;

}

Output:

enter the no of entities:4

enter the circle details:

enter the circle namecircle1

enter the radius of the circle12.3

enter the circle namecircle2

enter the radius of the circle34.2

enter the circle namecircle3

enter the radius of the circle1.32

enter the circle namecircle4

enter the radius of the circle2.43

the result is:

circle name:circle1

radius:12.3

the perimeter of the circle:77.244

the area of the circle is121.273

circle name:circle2

radius:34.2

the perimeter of the circle:214.776

the area of the circle is337.198

circle name:circle3

radius:1.32

the perimeter of the circle:8.2896

the area of the circle is13.0147

circle name:circle4

radius:2.43

the perimeter of the circle:15.2604

the area of the circle is23.9588

the greatest circle is:circle2

**...Program finished with exit code 0**

**Press ENTER to exit console.**

Q)

Code:

#include<iostream>

#include<string>

/\*string class is used to implement string/character array operations very efficiently than other methods of inmplementation of string operation\*/

using namespace std;

class Text

{

string st; //one dimensional string

public:

Text() //default constructor

{

cout<<"enter the string";

getline(cin,this->st);

}

int wordcount()

{

int len=this->st.length(); // calculates the string length

//this->st.at(len)='\0';

return len;

}

void reverse()

{

cout<<"the original string is: "<<this->st<<endl;

int l=wordcount();

int c=0,a,b;

for(int i=0;i<l+1;i++)

{

a=c;

if(this->st[i]==' '|| this->st[i]=='\0')

{

b=i-1;

c=i+1;

while(a<b)

{

char temp=this->st[a];

this->st[a]=this->st[b];

this->st[b]=temp;

a++;

b--;

}

}

}

cout<<"the reversed string is: "<<this->st<<endl;

}

~Text()

{

int l=wordcount();

this->st.erase(0,l); // delete the string

}

};

int main()

{

Text \*t=new Text;

t->reverse();

delete t;

return 0;

}

Output:

enter the string2020:Prevention is better than cure.

the original string is: 2020:Prevention is better than cure.

the reversed string is: noitneverP:0202 si retteb naht .eruc

**...Program finished with exit code 0**

**Press ENTER to exit console.**

Q)

Code:

#include<iostream>

using namespace std;

class Base1

{

public:

Base1()

{

cout<<"welcome to the base class"<<endl;

}

};

class Derived1 : public Base1

{

public:

Derived1()

{

cout<<"welcome to the derived class"<<endl;

}

};

int main()

{

Base1 b;

Derived1 d;

}

Output:

welcome to the base class

welcome to the base class

welcome to the derived class

**...Program finished with exit code 0**

**Press ENTER to exit console.**

Q)

Code:

#include<iostream>

class fruit

{

public:

fruit()

{

cout<<"this is the fruit"<<endl;

}

static void fprint()

{

cout<<"the cost of the following fruits are:"<<endl;

}

};

class apple: public fruit

{

int b;

public:

apple()

{

b=40;

cout<<"this is the apple"<<endl;

}

void aprint()

{

cout<<"apple: Rs"<<b<<endl;

}

};

class banana: public fruit

{

int c;

public:

banana()

{

c=30;

cout<<"this is the banana"<<endl;

}

void bprint()

{

cout<<"banana: Rs"<<c<<endl;

}

};

int main()

{

friut f;

apple a;

banana b;

apple::fprint();

apple::aprint();

banana::bprint();

}

Output:

this is the fruit

this is the fruit

this is the apple

this is the fruit

this is the banana

the cost of the following fruits are:

apple: Rs40

banana: Rs30

**...Program finished with exit code 0**

**Press ENTER to exit console.**

Q)

Code:

#include<iostream>

using namespace std;

class fruit

{

public:

fruit()

{

cout<<"this is the fruit"<<endl;

}

static void fprint()

{

cout<<"the cost of the following fruits are:"<<endl;

}

};

class apple: public fruit

{

int b;

public:

apple()

{

b=40;

cout<<"this is the apple"<<endl;

}

void aprint()

{

cout<<"apple: Rs"<<b<<endl;

}

};

class banana: private fruit

{

int c;

public:

banana()

{

c=30;

cout<<"this is the banana"<<endl;

}

void bprint()

{

cout<<"banana: Rs"<<c<<endl;

}

};

class greenapple:public apple

{

int d;

public:

greenapple()

{

d=50;

cout<<"this is the green apple"<<endl;

}

void gaprint()

{

cout<<"green apple: Rs"<<d<<endl;

}

};

int main()

{

fruit f;

apple a;

banana b;

greenapple ga;

greenapple::fprint();

a.aprint();

b.bprint();

ga.gaprint();

}

Output:

this is the fruit

this is the fruit

this is the apple

this is the fruit

this is the banana

this is the fruit

this is the apple

this is the green apple

the cost of the following fruits are:

apple: Rs40

banana: Rs30

green apple: Rs50

**...Program finished with exit code 0**

**Press ENTER to exit console.**

Q)

Code:

#include<iostream>

using namespace std;

#define pi 3.14

class shape

{

public:

virtual float calculate\_area()=0;

virtual void display()=0;

};

class rectangle

{

float l,b;

public:

rectangle(float l,float b)

{

this->l=l;

this->b=b;

}

float calculate\_area()

{

return l\*b;

}

void display()

{

cout<<"the area of the rectangle is"<<" "<<calculate\_area()<<endl;

}

};

class triangle

{

float b,h;

public:

triangle(float b,float h)

{

this->b=b;

this->h=h;

}

float calculate\_area()

{

return b\*h\*0.5;

}

void display()

{

cout<<"the area of the triangle is"<<" "<<calculate\_area()<<endl;

}

};

class circle

{

float r;

public:

circle(float r)

{

this->r=r;

}

float calculate\_area()

{

return r\*r\*pi;

}

void display()

{

cout<<"the area of the circle is"<<" "<<calculate\_area()<<endl;

}

};

int main()

{

rectangle r(12,7);

triangle t(3,7);

circle c(5);

r.display();

t.display();

c.display();

return 0;

}

Output:

the area of the rectangle is 84

the area of the triangle is 10.5

the area of the circle is 78.5

**...Program finished with exit code 0**

**Press ENTER to exit console.**

Q)

Code:

#include <iostream>

#include <string>

using namespace std;

class employee

{

public:

int hireyear;

string name;

employee(int hy,string n)

{

hireyear=hy;

name=n;

}

virtual void monthly\_pay()=0;

virtual void annual\_pay()=0;

};

class salarie\_employee:public employee

{

public:

salarie\_employee(int hy,string n):employee(hy,n)

{}

void monthly\_pay()

{

cout<<"your monthly payment is Rs 10,000"<<endl;

}

};

class hourly\_employee:public employee

{

public:

hourly\_employee(int hy,string n):employee(hy,n)

{}

void monthly\_pay()

{

cout<<"your monthly payment is Rs 100"<<endl;

}

};

class manager:public salarie\_employee

{

public:

manager(int hy,string n):salarie\_employee(hy,n)

{}

void annual\_pay()

{

cout<<"-----------------------------MANAGER---------------------------------"<<endl;

cout<<"name:"<<name<<endl;

cout<<"hire year:"<<hireyear<<endl;

salarie\_employee::monthly\_pay();

cout<<"your annual payment is Rs 2,00,000"<<endl;

}

};

class staff:public salarie\_employee

{

public:

staff(int hy,string n):salarie\_employee(hy,n)

{}

void annual\_pay()

{

cout<<"-----------------------------STAFF---------------------------------"<<endl;

cout<<"name:"<<name<<endl;

cout<<"hire year:"<<hireyear<<endl;

salarie\_employee::monthly\_pay();

cout<<"your annual payment is Rs 1,00,000"<<endl;

}

};

class fulltime:public hourly\_employee

{

public:

fulltime(int hy,string n):hourly\_employee(hy,n)

{}

void annual\_pay()

{

cout<<"-----------------------------FULLTIME EMPLOYEE---------------------------------"<<endl;

cout<<"name:"<<name<<endl;

cout<<"hire year:"<<hireyear<<endl;

hourly\_employee::monthly\_pay();

cout<<"your annual payment is Rs 12,000"<<endl;

}

};

class parttime:public hourly\_employee

{

public:

parttime(int hy,string n):hourly\_employee(hy,n)

{}

void annual\_pay()

{

cout<<"-----------------------------PARTTIME EMPLOYEE---------------------------------"<<endl;

cout<<"name:"<<name<<endl;

cout<<"hire year:"<<hireyear<<endl;

hourly\_employee::monthly\_pay();

cout<<"your annual payment is Rs 6,000"<<endl;

}

};

int main()

{

manager m(2012,"shalu");

staff s(2009,"ram");

fulltime f(1999,"shruti");

parttime p(2019,"rajiv");

m.annual\_pay();

//m.monthly\_pay();

s.annual\_pay();

//s.monthly\_pay();

f.annual\_pay();

//f.monthly\_pay();

p.annual\_pay();

//p.monthly\_pay();

return 0;

}

Output:

-----------------------------MANAGER---------------------------------

name:shalu

hire year:2012

your monthly payment is Rs 10,000

your annual payment is Rs 2,00,000

-----------------------------STAFF---------------------------------

name:ram

hire year:2009

your monthly payment is Rs 10,000

your annual payment is Rs 1,00,000

-----------------------------FULLTIME EMPLOYEE---------------------------------

name:shruti

hire year:1999

your monthly payment is Rs 100

your annual payment is Rs 12,000

-----------------------------PARTTIME EMPLOYEE---------------------------------

name:rajiv

hire year:2019

your monthly payment is Rs 100

your annual payment is Rs 6,000

**...Program finished with exit code 0**

**Press ENTER to exit console.**

Q)

Code:

#include <iostream>

#include <string>

using namespace std;

class Student

{

protected:

string ID;

string name;

public:

void get()

{

cout<<"Enter the student ID: ";

cin>>ID;

cout<<"Enter the student name: ";

cin>>name;

}

};

class Theory\_Marks: public virtual Student

{

protected:

float english;

float french;

float maths;

public:

void getdata()

{

cout<<"Enter the marks of following subjects:"<<endl;

cout<<"English: ";

cin>>english;

cout<<"French: ";

cin>>french;

cout<<"Mathematics: ";

cin>>maths;

}

};

class Sport\_Marks: public virtual Student

{

protected:

float sports\_marks;

public:

void takes()

{

cout<<"Sports Marks: ";

cin>>sports\_marks;

}

};

class Result: public Theory\_Marks, public Sport\_Marks

{

protected:

float total\_marks;

float Marks()

{

total\_marks=Theory\_Marks::english+Theory\_Marks::french+Theory\_Marks::maths+Sport\_Marks::sports\_marks;

return total\_marks;

}

public:

void putdata()

{

cout<<"ID: "<<Student::ID<<endl;

cout<<"Name: "<<Student::name<<endl;

cout<<"Marks obtained in: "<<endl;

cout<<"English: "<<Theory\_Marks::english<<endl;

cout<<"French: "<<Theory\_Marks::french<<endl;

cout<<"Mathematics: "<<Theory\_Marks::maths<<endl;

cout<<"Sports Marks: "<<Sport\_Marks::sports\_marks<<endl;

cout<<"Total marks obtained in all the subjects: "<<Marks()<<endl;

}

};

int main()

{

int n;

Result r[100];

cout<<"Enter the no of students whose record do you want to enter: ";

cin>>n;

if(n!=0)

{

cout<<"Enter the student details and their marks obtained in the exams:"<<endl;

for(int i=0;i<n;i++)

{

r[i].get();

r[i].getdata();

r[i].takes();

}

cout<<"The Result is:"<<endl;

for(int i=0;i<n;i++)

{

r[i].putdata();

}

}

}

Output:

Enter the no of students whose record do you want to enter: 3

Enter the student details and their marks obtained in the exams:

Enter the student ID: S01

Enter the student name: Aryushi

Enter the marks of following subjects:

English: 100

French: 98

Mathematics: 100

Sports Marks: 97

Enter the student ID: S02

Enter the student name: Falak

Enter the marks of following subjects:

English: 99

French: 100

Mathematics: 100

Sports Marks: 96

Enter the student ID: S03

Enter the student name: Tina

Enter the marks of following subjects:

English: 100

French: 96

Mathematics: 98

Sports Marks: 95

The Result is:

ID: S01

Name: Aryushi

Marks obtained in:

English: 100

French: 98

Mathematics: 100

Sports Marks: 97

Total marks obtained in all the subjects: 395

ID: S02

Name: Falak

Marks obtained in:

English: 99

French: 100

Mathematics: 100

Sports Marks: 96

Total marks obtained in all the subjects: 395

ID: S03

Name: Tina

Marks obtained in:

English: 100

French: 96

Mathematics: 98

Sports Marks: 95

Total marks obtained in all the subjects: 389

**...Program finished with exit code 0**

**Press ENTER to exit console.**

Q)

Code:

#include<iostream>

#include<stdlib.h>

using namespace std;

class IAnimal

{

public:

virtual void IsAlive()=0;

virtual ~IAnimal()

{}

};

class IPet: public IAnimal

{

public:

virtual void Eat(int food)=0;

};

class ICat: public IPet

{

public:

virtual void Meow()=0;

};

class IDog: public IPet

{

public:

virtual void Bark()=0;

};

class CAnimal: public IAnimal

{

public:

void IsAlive()

{

cout<<"Your animal is alive."<<endl;

}

};

class CPet: public CAnimal, public IPet

{

//int food;

public:

void IsAlive()

{

cout<<"It is your pet."<<endl;

}

void Eat(int food)

{

food=5;

cout<<"Give your pet at least "<<food<<" food items in a day"<<endl;

}

};

class CCat: public ICat, public CPet

{

//int mouse;

public:

void IsAlive()

{

cout<<"Your Pet is alive. Please take care of her"<<endl;

}

void Meow()

{

cout<<"Your pet is a cat"<<endl;

}

void Eat(int mouse)

{

cout<<"Your cat eats "<<mouse<<" mouses in a day"<<endl;

}

};

class CDog: public IDog, public CPet

{

//int bones;

public:

void IsAlive()

{

cout<<"Your pet is alive. Please take care of him."<<endl;

}

void Bark()

{

cout<<"Your pet is a dog"<<endl;

}

void Eat(int bones)

{

cout<<"Your dog sucks "<<bones<<" bones in a day"<<endl;

}

};

int main()

{

CAnimal a;

CPet p;

CCat c;

CDog d;

int ch;

cout<<"--------------------------------------------WELCOME-----------------------------------------"<<endl;

while(1)

{

cout<<"Enter your choice (0-2. here 2 is for exit): ";

cin>>ch;

switch(ch)

{

case 0: a.IsAlive();

p.IsAlive();

p.Eat(5);

break;

case 1:bool b;

cout<<"Enter your choice(0/1): ";

cin>>b;

if(!b)

{

c.IsAlive();

c.Meow();

c.Eat(2);

}

else

{

d.IsAlive();

d.Bark();

d.Eat(3);

}

break;

case 2:exit(0);

}

}

return 0;

}

Output:

------------------------------WELCOME----------------------------------

Enter your choice (0-2. here 2 is for exit): 0

Your animal is alive.

It is your pet.

Give your pet at least 5 food items in a day

Enter your choice (0-2. here 2 is for exit): 1

Enter your choice(0/1): 0

Your Pet is alive. Please take care of her

Your pet is a cat

Your cat eats 2 mouses in a day

Enter your choice (0-2. here 2 is for exit): 1

Enter your choice(0/1): 1

Your pet is alive. Please take care of him.

Your pet is a dog

Your dog sucks 3 bones in a day

Enter your choice (0-2. here 2 is for exit): 2

**...Program finished with exit code 0**

**Press ENTER to exit console.**

Code:

#include<iostream>

#include<stdlib.h>

using namespace std;

class calculation

{

int num1,num2;

public:

virtual void cal(int num1, int num2)=0;

};

class add: public calculation

{

public:

void cal(int num1, int num2)

{

cout<<"The sum is: "<<num1+num2<<"."<<endl;

}

};

class subtract:public calculation

{

public:

void cal(int num1, int num2)

{

cout<<"The difference is: "<<num1-num2<<"."<<endl;

}

};

class multiply:public calculation

{

public:

void cal(int num1, int num2)

{

cout<<"The product is: "<<num1\*num2<<"."<<endl;

}

};

class divide:public calculation

{

public:

void cal(int num1, int num2)

{

cout<<"The result is: "<<num1/num2<<"."<<endl;

}

};

int main()

{

int num1,num2;

add a;

subtract s;

multiply m;

divide d;

int choice;

while(1)

{

cout<<"Main Menu"<<endl;

cout<<"1.Add"<<endl;

cout<<"2.Subtract"<<endl;

cout<<"3.Multiply"<<endl;

cout<<"4.Divide"<<endl;

cout<<"5.Exit"<<endl;

cout<<"Enter the choice"<<endl;

cin>>choice;

switch(choice)

{

case 1: cout<<"Enter the first number"<<endl;

cin>>num1;

cout<<"Enter the second number"<<endl;

cin>>num2;

a.cal(num1,num2);

break;

case 2: cout<<"Enter the first number"<<endl;

cin>>num1;

cout<<"Enter the second number"<<endl;

cin>>num2;

s.cal(num1,num2);

break;

case 3: cout<<"Enter the first number"<<endl;

cin>>num1;

cout<<"Enter the second number"<<endl;

cin>>num2;

m.cal(num1,num2);

break;

case 4: cout<<"Enter the first number"<<endl;

cin>>num1;

cout<<"Enter the second number"<<endl;

cin>>num2;

d.cal(num1,num2);

break;

case 5: exit(0);

break;

default: cout<<"Invalid Entry"<<endl;

}

}

return 0;

}

Output:

Main Menu

1.Add

2.Subtract

3.Multiply

4.Divide

5.Exit

Enter the choice

1

Enter the first number

23

Enter the second number

45

The sum is: 68.

Main Menu

1.Add

2.Subtract

3.Multiply

4.Divide

5.Exit

Enter the choice

2

Enter the first number

46

Enter the second number

56

The difference is: -10.

Main Menu

1.Add

2.Subtract

3.Multiply

4.Divide

5.Exit

Enter the choice

3

Enter the first number

567

Enter the second number

23

The product is: 13041.

Main Menu

1.Add

2.Subtract

3.Multiply

4.Divide

5.Exit

Enter the choice

4

Enter the first number

56

Enter the second number

8

The result is: 7.

Main Menu

1.Add

2.Subtract

3.Multiply

4.Divide

5.Exit

Enter the choice

5

**...Program finished with exit code 0**

**Press ENTER to exit console.**

Q)

Code:

#include<iostream>

#include<stdlib.h>

using namespace std;

class Automobile

{

public:

Automobile()

{

cout<<"Default Constructor of Automobile is called."<<endl;

}

Automobile(int num)

{

cout<<"Parameterized constructor of Automobile is called."<<endl;

}

virtual void input()=0;

virtual void display()=0;

};

class Car: public Automobile

{

int carno;

public:

Car(): carno(0), Automobile(0)

{

cout<<"Default Constructor of Car is called"<<endl;

}

};

class Bus: public Automobile

{

int busno;

public:

Bus(): busno(0), Automobile(0)

{

cout<<"Default Constructor of Bus is called"<<endl;

}

};

class Ford: public Car

{

int model;

public:

Ford(int m): model(m), Car()

{

cout<<"Parameterized Constructor of Ford is called"<<endl;

}

void input()

{

cout<<"Enter the Model No: ";

cin>>model;

}

void display()

{

cout<<"The company is Ford. It is a car."<<endl;

cout<<"Its Model No is: "<<model<<endl;

}

};

class BMW: public Car

{

int model;

public:

BMW(int m): model(m), Car()

{

cout<<"Parameterized Constructor of BMW is called"<<endl;

}

void input()

{

cout<<"Enter the Model No: ";

cin>>model;

}

void display()

{

cout<<"The company is BMW. It is a car."<<endl;

cout<<"Its Model No is: "<<model<<endl;

}

};

class Toyota: public Bus

{

int model;

public:

Toyota(int m): model(m), Bus()

{

cout<<"Parameterized Constructor of Toyota is called"<<endl;

}

void input()

{

cout<<"Enter the Model No: ";

cin>>model;

}

void display()

{

cout<<"The company is Toyota. It is a bus."<<endl;

cout<<"Its Model No is: "<<model<<endl;

}

};

class Mitsubishi: public Bus

{

int model;

public:

Mitsubishi(): model(0), Bus()

{

cout<<"Default Constructor of Mitsubishi is called"<<endl;

}

void input()

{

cout<<"Enter the Model No: ";

cin>>model;

}

void display()

{

cout<<"The company is Mitsubishi. It is a bus."<<endl;

cout<<"Its Model No is: "<<model<<endl;

}

};

int main()

{

int ch;

Ford f(0);

BMW b(0);

Toyota t(0);

Mitsubishi m;

while(1)

{

cout<<"Enter your choice (1-5 where 5 is for exit): ";

cin>>ch;

switch(ch)

{

case 1:f.input();

f.display();

break;

case 2:b.input();

b.display();

break;

case 3:t.input();

t.display();

break;

case 4:m.input();

m.display();

break;

case 5:exit(0);

}

}

return 0;

}

Output:

Parameterized constructor of Automobile is called.

Default Constructor of Car is called

Parameterized Constructor of Ford is called

Parameterized constructor of Automobile is called.

Default Constructor of Car is called

Parameterized Constructor of BMW is called

Parameterized constructor of Automobile is called.

Default Constructor of Bus is called

Parameterized Constructor of Toyota is called

Parameterized constructor of Automobile is called.

Default Constructor of Bus is called

Default Constructor of Mitsubishi is called

Enter your choice (1-5 where 5 is for exit): 1

Enter the Model No: 123

The company is Ford. It is a car.

Its Model No is: 123

Enter your choice (1-5 where 5 is for exit): 2

Enter the Model No: 234

The company is BMW. It is a car.

Its Model No is: 234

Enter your choice (1-5 where 5 is for exit): 3

Enter the Model No: 345

The company is Toyota. It is a bus.

Its Model No is: 345

Enter your choice (1-5 where 5 is for exit): 4

Enter the Model No: 456

The company is Mitsubishi. It is a bus.

Its Model No is: 456

Enter your choice (1-5 where 5 is for exit): 5

**...Program finished with exit code 0**

**Press ENTER to exit console.**

Q)

Code:

Output:

Q)

Code:

#include <iostream>

using namespace std;

class shape

{

public:

void draw()

{

cout<<"Draw a shape"<<endl;

}

};

class triangle

{

int a,b,c;

public:

triangle(): a(0), b(0), c(0)

{}

void draw(int a,int b,int c)

{

cout<<"Draw a triangle "<<a<<" "<<b<<" "<<c<<endl;

}

};

class rectangle

{

int a,b;

public:

rectangle():a(0), b(0)

{}

void draw(int a,int b)

{

cout<<"Draw a rectangle "<<a<<" "<<b<<endl;

}

};

class circle

{

int a;

public:

circle():a(0)

{}

void draw(int a)

{

cout<<"Draw a circle "<<a<<endl;

}

};

int main()

{

shape s;

triangle t;

rectangle r;

circle c;

s.draw();

t.draw(1,2,3);

r.draw(1,2);

c.draw(1);

}

Or

#include <iostream>

using namespace std;

class shape

{

int a;

public:

shape(): a(0)

{}

void draw()

{

cout<<"Draw a shape"<<endl;

}

};

class triangle: public shape

{

int a,b,c;

public:

triangle(): shape(), b(0), c(0)

{}

void draw(int a,int b,int c)

{

cout<<"Draw a triangle "<<a<<" "<<b<<" "<<c<<endl;

}

};

class rectangle:public shape

{

int a,b;

public:

rectangle(): shape(), b(0)

{}

void draw(int a,int b)

{

cout<<"Draw a rectangle "<<a<<" "<<b<<endl;

}

};

class circle:public shape

{

int a;

public:

circle(): shape()

{}

void draw(int a)

{

cout<<"Draw a circle "<<a<<endl;

}

};

int main()

{

shape s;

triangle t;

rectangle r;

circle c;

s.draw();

t.draw(1,2,3);

r.draw(1,2);

c.draw(1);

}

Output:

Draw a shape

Draw a triangle 1 2 3

Draw a rectangle 1 2

Draw a circle 1

**...Program finished with exit code 0**

**Press ENTER to exit console.**

Q)

Code:

#include<iostream>

using namespace std;

class Base1

{

public:

void f1()

{

cout<<"f1 of Base 1"<<endl;

}

void f2()

{

cout<<"f2 of Base 1"<<endl;

}

virtual void f3()

{

cout<<"f3 of Base 1"<<endl;

}

};

class Base2

{

public:

void f1()

{

cout<<"f1 of Base 2"<<endl;

}

virtual void f2()

{

cout<<"f2 of Base 2"<<endl;

}

void f3()

{

cout<<"f3 of Base 2"<<endl;

}

};

class Derived: public Base1,public Base2

{

public:

void f1()

{

cout<<"f1 of Derived"<<endl;

}

void f2()

{

cout<<"f2 of Derived"<<endl;

}

void f3()

{

cout<<"f3 of Derived"<<endl;

}

};

int main()

{

Derived d;

d.f1();

d.f2();

d.f3();

Base1 \*b1=&d;

b1->f1();

b1->f2();

b1->f3();

Base2 \*b2=&d;

b2->f1();

b2->f2();

b2->f3();

return 0;

}

Output:

f1 of Derived

f2 of Derived

f3 of Derived

f1 of Base 1

f2 of Base 1

f3 of Derived

f1 of Base 2

f2 of Derived

f3 of Base 2

**...Program finished with exit code 0**

**Press ENTER to exit console.**

Q)

Code:

#include<iostream>

using namespace std;

class Base1

{

public:

virtual ~Base1()

{

cout<<"Base1 is over"<<endl;

}

};

class Base2

{

public:

virtual ~Base2()

{

cout<<"Base2 is over"<<endl;

}

};

class Derived: public Base1, public Base2

{

public:

virtual ~Derived()

{

cout<<"Derived is over"<<endl;

}

};

int main()

{

//cout<<"Derived"<<endl;

//Derived d;

//cout<<"Base"<<endl;

Base1 \*b1=new Derived;

Base2 \*b2=new Derived;

delete b1;

delete b2;

return 0;

}

Output:

Derived is over

Base2 is over

Base1 is over

Derived is over

Base2 is over

Base1 is over

**...Program finished with exit code 0**

**Press ENTER to exit console.**

Q)

Code:

Output:

Q)

Code:

Output:

Q)

Code:  
#include<iostream>

using namespace std;

int compstr(char \*str1,int s1,char \*str2,int s2)

{

int a1[100],a2[100],a3[100];

for(int i=0;i<s1;i++)

{

a1[i]=str1[i];

}

for(int i=0;i<s2;i++)

{

a2[i]=str2[i];

}

for(int i=0;i<s1;i++)

{

a3[i]=a1[i]-a2[i];

}

for(int i=0;i<s1;i++)

{

if(a3[i]!=0)

{

if(a3[i]<0)

{

return -1;

}

else

{

return 1;

}

}

}

return 0;

}

int main()

{

char \*str1=new char[100];

char \*str2=new char[100];

cout<<"Enter the first string"<<endl;

cin.getline(str1,100);

cout<<"Enter the second string"<<endl;

cin.getline(str2,100);

int s1=0,s2=0;

for(int i=0;str1[i]!='\0';i++)

s1++;

for(int i=0;str1[i]!='\0';i++)

s2++;

if(s1!=s2)

cout<<"The strings are not equal"<<endl;

else

{

int comp=compstr(str1,s1,str2,s2);

if(comp==0)

{

cout<<"The strings are equal "<<comp<<endl;

}

else

{

cout<<"The strings are not equal "<<comp<<endl;

}

}

return 0;

}

Output:

Enter the first string

shaina mehta

Enter the second string

shikha mehta

The strings are not equal -1

**...Program finished with exit code 0**

**Press ENTER to exit console.**

Q)

Code:

Output: