**hello world**

#include<iostream>

#include<stdio.h>

main()

{

cout>>"hello world \n";

system("pause");

}

**Escape Sequence**

#include<iostream>

#include<stdio.h>

#include<conio.h>

main()

{

cout>>"This escape sequence moves the cursor \n");

cout>>"This escape sequence moves the cursor \r";

getch();

cout>>"to the beginning of this line ";

getch();

//system("pause");

}

#include<iostream>

#include<stdio.h>

#include<conio.h>

main()

{

cout>>"line1\nline2\nline3\n";

/\*

cout>>"C ";

cout>>"for the ";

cout>>"Absolute Beginner\n";

\*/

system("pause");

}

#include<iostream>

#include<stdio.h>

#include<conio.h>

main()

{

cout>>" \"This is quoted text \" \n";

system("pause");

}

#include<iostream>

#include<stdio.h>

#include<conio.h>

main()

{

cout>>"\n \' A single quote looks like \' \n";

system("pause");

}

#include<iostream>

#include<stdio.h>

main()

{

cout>>"\nSun\tMon\tTue\tWed\tThu\tFri\tSat\n";

cout>>"\t\t\t\t1\t2\t3\n";

cout>>"4\t5\t6\t7\t8\t9\t10\n";

cout>>"11\t12\t13\t14\t15\t16\t17\n";

cout>>"18\t19\t20\t21\t22\t23\t24\n";

cout>>"25\t26\t27\t28\t29\t30\t31\n";

system("pause");

}

#include<iostream>

#include<stdio.h>

#include<conio.h>

main()

{

cout>>"The format issue can be corrected by using";

cout>>" the \\n and \\\\ escape sequences \n";

system("pause");

}

**Gross salary calculation program**

/\* Gross salary calculation program\*/

#include<iostream>

#include<conio.h>

main()

{

int hours, payrate, grosspay;

hours = 40;

payrate = 10;

grosspay = hours \* payrate;

cout<<"your gross pay is \n", grosspay;

system("pause");

}

/\* Gross salary calculation program \*/

#include<iostream>

#include<conio.h>

main()

{

int hours, payrate, grosspay;

cout<<"How many hours did you work? ";

cin>>hours);

cout<<"How much do you get paid per hour? ";

cin>>payrate;

grosspay = hours\*payrate;

cout<<"your gross pay is \n", grosspay;

system("pause");

}

**Lab 1 Solution of Activities**

1. Write a C++ program that prints a face similar to the following:



#include <iostream>

using namespace std;

int main ()

{

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

cout << " +-------+" << endl;

cout << "(| o o |)" << endl;

cout << " | ^ |" << endl;

cout << " | \_ |" << endl;

cout << " +-------+" << endl;

system("pause");

return 0 ;

}

1. Without the use of a computer, evaluate the following C++ expressions:
   1. 5 + 2 % 3
   2. 2.0 - 4 \* 3 + 24 / 3
   3. 15.3 \* 2.0 + 5.0
   4. 5 % 8 \* 2.0
   5. 30 / 10.0 + 2 \* 4.0
   6. 3.3 \* 3 + 5
2. Without the use of a computer, what are the values of the following expressions? In each line, assume that:

string t = “Dear”;

string v = “Friend”;

string p = “!”;

string q = "73";

double a = 6.5, b = -1.5, c;

int x = 8, y = 4, z;

1. a + y \* b - (a + y) \* y; -41.5
2. x / y + x % y; 2
3. 5 \* a - y / 5 ; 32.5
4. sqrt (sqrt(x)); 1.68179
5. t + v; DearFriend
6. v + p + v; Friend!Friend
7. q + t; 73Dear
8. q + a; Error
9. z; Garbage Data
10. Using the excerpt of the C++ program in Figure 2, write a complete program to display the value of x.

a = 2;

b = 7;

c = 3;

x = b + c % a;

**Figure 2**

1. Using the excerpt of a C++ program in Figure 3, write a complete program to display the value of z.

w = 5;

x = 2;

y = 4.0;

u = 13;

z = y - x \* w + u / w;

**Figure 3**

**Lab 2 Solution**

1. Write a program that prompts the user for two integers and the prints:

a. the sum

b. the difference

c. the average

d. the product

e. the larger integer

f. the smaller integer

Note: Use the max and min functions found in the algorithm header for questions e and f.

#include <algorithm>

using namespace std;

int main ()

{

int a, b;

cout << "2 integers: ";

cin >> a >> b;

cout << "Addition: " << a+b << endl;

cout << "Subtraction: " << a-b << endl; //the same for average and product

cout << "Biggest: " << max (a,b) << endl;

cout << "Smallest: " << min (a,b) << endl;

system("puase");

return 0;}

2. Write a program that inputs a five-digit integer, separates the integer into its individual digits and prints the digits separated from one another by three spaces each. For example, if the user types 32156, the program should print:

3 2 1 5 6

int main()

{

int x;

const int z = 10;

cout << "Enter number to be separated: ";

cin >> x;

int quotient = x / z;

int dgt5 = x % z;

int dgt4 = quotient % z;

quotient = quotient / z;

int dgt3 = quotient % z;

quotient = quotient / z;

int dgt2 = quotient % z;

quotient = quotient / z;

int dgt1 = quotient % z;

quotient = quotient / z;

cout << dgt1 << " " << dgt2 << " " << dgt3 << " " << dgt4 << " " << dgt5 << endl;

return 0;}

3. Write a C++ program that calculates and displays the value of the current flowing through an RC circuit. The circuit consists of a battery connected in a series to a switch, a resistor and a capacitor. When the switch is closed, the current, *i*, flowing through the circuit is given by this formula:

*i = (E/R) e-t/RC*

*E* is the voltage of the battery in volts

*R* is the value of the resistor in ohms.

*C* is the value of the capacitor in farads.

*t* is the time in seconds after the switch is closed.

*E* is Euler’s number, which is 2.71828.

Using this formula, write a C++ program to determine the voltage across the capacitor. Test your program with the two data sets below:

1. Voltage = 20 volts, *R* = 10 ohms, *RC* = 0.044, *t* = 0.023 seconds
2. Voltage = 35 volts, *R* = 10 ohms, *RC* = 0.16, *t* = 0.067 seconds

#include <math.h>

#define e 2.71828

using namespace std;

int main ()

{

double i, E, R, t, RC;

cout << "Enter voltage: ";

cin >> E;

cout << "Enter R: ";

cin >> R;

cout << "Enter time: ";

cin >> t;

cout << "Enter RC: ";

cin >> RC;

i = (E / R) \* pow (e, -t/RC);

cout << "Value of i is: " << i << endl;

system("pause");

return 0;}

4. Write a program that plays a word game with the user. The program should ask the user to enter the following:

* First name
* Last name
* Year of birth (eg. 1990)
* Name of university
* A favorite hobby
* A pet’s name

Write a program that will produce an outcome as below:

Enter first name: Kamal

Enter last name: Jan

Enter year of birth: 1990

Name of university: INU

Favorite hobby: read

Pet’s name: Chucky

"There lives a person name Kamal Jan who is currently 21 years of age. Kamal is studying at INU. It is interesting because Kamal likes to read with Chucky and they lived happily ever after!"

int main ()

{

string fname, lname, uni, hobby, pet;

int year, age;

cout <<"Enter first name: ";

cin >> fname;

cout <<"Enter last name: ";

cin >> lname;

cout <<"Enter year of birth: ";

cin >> year;

cout <<"Enter university name: ";

cin >> uni;

cout << "Enter your favorite hobby: ";

cin >> hobby;

cout << "Enter a pet's name: ";

cin >> pet;

cout <<endl;

age = 2011 - year;

cout << "There lives a person name " << fname << " " << lname << " who is currently " << age << " years of age. " << fname << " is studying at " << uni << "."

<< " It is interesting because " << fname << " likes to " << hobby << " with " << pet << " and they lived happily ever after!" <<endl;

system("pause");

return 0; }