ព្រះរាជាណាចក្រកម្ពុជា

ជាតិ សាសនា ព្រះមហាក្សត្រ

Institute of technology of Cambodia

Department of Information and communication Engineering

The lesson taking about using structure in c++

Class activity (from 17-03-2022)

TP: Algorithm and Programming ll

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Group: I3-GIC-C

Year: 2022-2023

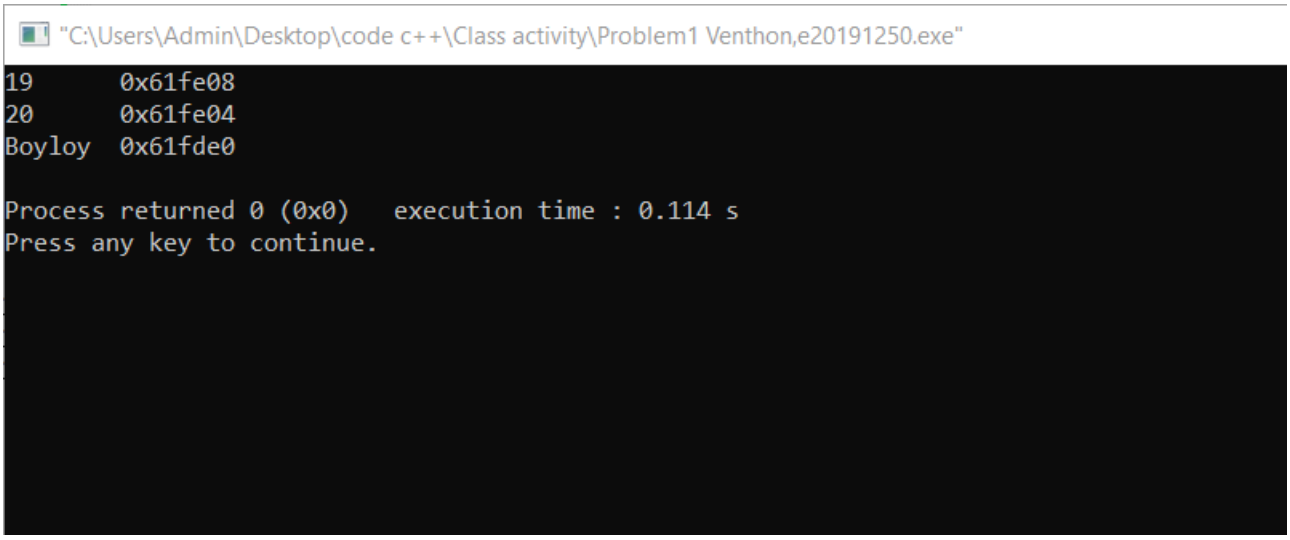
Contents

Problem1:

Write a c++ program that declares and initializes any values to a a variable of float, integer and string. The program the display the value and address (in hexadecimal from)for each variable.

Start here | Problem1 Venthon,e20191250.cpp

```
1   #include<iostream>
2   using namespace std;
3   main()
4   {
5       float f=19.00;
6       int k=20;
7       string s="Boyloy";
8       cout<<f<<"\t"<<&f<<endl;
9       cout<<k<<"\t"<<&k<<endl;
10      cout<<s<<"\t"<<&s<<endl;
11  }
12
```



Problem2:

Write a program c++ to get two integer number from a user then swap the values of those two variable and display them on screen.

here | Problem1 Venthon,e20191250.cpp | Problem3 venthon,e20191250.cpp

```cpp
#include<iostream>
using namespace std;
main()
{
    int a,b;
    int tem;
    cout<<"Enter number a: ";
    cin>>a;
    cout<<"Enter number b:  ";
    cin>>b;
    tem=a;
    a=b;
    b=tem;
    cout<<a<<"\t"<<b<<endl;
}
```

```
Enter number a: 7
Enter number b:  8
8       7

Process returned 0 (0x0)   execution time : 8.320 s
Press any key to continue.
```

Problem3:

Create a subprogram to swap the value of the four parameters. The first two parameters exchange each other. The last two parameters exchange each other.

Start here | Problem1 Venthon,e20191250.cpp | Problem3 venthon,e20191250.cpp | Problem03 venthon,e20191250.cpp

```cpp
#include<iostream>
using namespace std;
void swapData(int *a, int *b, int *c, int *d)
{
    int tem;
    tem=*a;
    *a=*b;
    *b=tem;
    tem=*c;
    *c=*d;
    *d=tem;
}
main()
{
    int a=2, b=4, c=6, d=8;
    swapData(&a,&b,&c,&d);
    cout<<"a swap b\t"<<a<<"\t"<<b<<endl;
    cout<<"c swap d \t"<<c<<"\t"<<d<<endl;
}
```

"C:\Users\Admin\Desktop\code c++\Class activity\Problem03 venthon,e20191250.exe"

```
a swap b        4       2
c swap d        8       6

Process returned 0 (0x0)   execution time : 0.021 s
Press any key to continue.
```

Problem4:

Create a function to solve quadratic equation. The function takes 6 parameters. The function solve roots then store in parameters. Prototype of this function is defined as below: void solveEquation(float a, float b, float c, float*x1, float*x2, float*delta)

rt here | Problem1 Venthon,e20191250.cpp | Problem3 venthon,e20191250.cpp | Problem03 venthon,e20191250.cpp | Problem4 venthon,e20191250.cpp

```cpp
#include<iostream>
#include<math.h>
using namespace std;

void solveEquation(float a, float b, float c, float*x1, float*x2, float*delta)
{
    *delta=b*b-4*a*c;
    if(*delta>0)
    {
        *x1=(-b-sqrt(*delta))/(2*a);
        *x2=(-b+sqrt(*delta))/(2*a);
    }
    else if(*delta==0)
    {
        *x1=*x2=-b/(2*a);
    }
    else{
        cout<<"\n\t Delta has to be bigger then 0.";
    }
}
main()
{
    float x,y,delta;
    solveEquation(1,4,4,&x,&y,&delta);
    cout<<x<<"\t"<<y<<"\t"<<delta<<endl;
}
```

```
"C:\Users\Admin\Desktop\code c++\Class activity\Problem4 venthon,e20191250.exe"
-2      -2      0

Process returned 0 (0x0)   execution time : 0.033 s
Press any key to continue.
```