

CIS 150-Lab (Section 2)
Winter 2017

Lab 3
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Question 1

1.1 source code

```
/*  
main.cpp  
Question 1_CIS 150 – Lab 03  
  
Created by Hisham on 2/7/17.  
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Purpose: Use the if statment to see what will the value 10 output or what the value 5 is going  
to output. It is all depends on the if statment and the value we put in it  
*/
```

```
#include <iostream>  
#include <iostream>  
  
using namespace std;  
  
int main() {  
    int x, y;  
  
    cout << "Please enter an integer value: ";  
    cin >> x;  
  
    if (x >= 9)  
    {  
        x = x + 1;  
        y = x * x;  
    }  
    else  
    {  
        x = x * 2;  
        y = x + x;  
    }  
  
    cout << "x = " << x << " y = " << y << endl;  
  
    system("pause");  
    return 0;  
}
```

1.2 source code

```
L x = (int) 12  
L y = (int) 144
```

1.3 source code

```
L x = (int) 10  
L y = (int) 20
```

Question 2

2.1 source code

```
/*  
main.cpp  
Question 2_CIS 150 – Lab 03
```

Created by Hisham on 2/7/17.

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Purpose: Ask the user for his name and his age, if his age is ≥ 18 he is able to vote else he won't be able to vote if his age < 18

```
*/
```

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

```
using namespace std;
```

```
int main() {  
    string name; //user's name  
    int age;      //user's age  
  
    //ask the user for name  
    cout << "Enter your name ";
```

```

cin>> name; //accept white sapce to enter his fist name and last name as one line

//ask for the age
cout << "Enter your age ";
cin>> age;

//if age greater than 18 it will let him pass to vote and if the vote is less than 18 it wont let him
if(age >=18){

    cout <<"Congratulations "<< name <<" Your vote registration was successfully
processed."<<endl;

}
else
{
    cout <<"You are not eligible to vote "<<name<<endl;
}

system("pause");
return 0;
}

```

2.2 source code

```

Enter your name Hisham
Enter your age 22
Congratulations Hisham Your vote registration was
successfully processed.
sh: pause: command not found
Program ended with exit code: 0

```

2.3 source code

```

Enter your name hisham
Enter your age 17
You are not eligible to vote hisham
sh: pause: command not found
Program ended with exit code: 0

```

Question 3

3.1 source code

```
/*  
main.cpp  
Question 3_CIS 150 – Lab 03
```

Created by Hisham on 2/7/17.

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Purpose: We should ask the user how many hours he/she worked per week and display the total pay check he/she gets if the hours is ≤ 40 then it only hours times pay rate else if it is more than do the calculation for overtime and display it for the user

```
*/
```

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

```
using namespace std;
```

```
int main() {
```

```
    double hoursWorked,payPerHour,totalPay;
```

```
    //ask the user for input
```

```
    cout <<"How many hours your worked this week (ex.40.0 ): ";
```

```
    cin >>hoursWorked;
```

```
    //ask the user for input
```

```
    cout <<"What is your pay rate per hour (ex. 12.0): ";
```

```

cin >>payPerHour;

//check if the user worked less than or equal 40 hours per week if not then it will go to the else
statemnt
if(hoursWorked <= 40){

    totalPay = (hoursWorked * payPerHour);//calclating the total payments fi he worked <=40

    cout <<"The weekly pay is $"<<totalPay<<endl;
}
else {
    //calclate this 2nd      calculate This 1st
    totalPay = (payPerHour * 40) + (( hoursWorked - 40) * (payPerHour * 1.5));

    cout <<"The weekly pay is $"<<totalPay<<endl;

}

system("pause");
return 0;
}

```

3.2 source code

```

How many hours your worked this week (ex.40 ): 50.0
What is your pay rate per hour (ex. 12.50): 10.0
The weekly pay is $550
sh: pause: command not found
Program ended with exit code: 0

```

3.3 source code

```

How many hours your worked this week (ex.40 ): 30.0
What is your pay rate per hour (ex. 12.50): 10.0
The weekly pay is $300
sh: pause: command not found
Program ended with exit code: 0

```

Question 4

4.1 source code

```

/*
main.cpp
Question 4_CIS 150 – Lab 03

Created by Hisham on 2/7/17.
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Purpose: calculation for the quadratic equation if the user enter a 3 numbers and show him the
asnwers
*/

#include <iostream>
#include <iostream>
#include<cmath>
using namespace std;

int main() {

    int a,b,c; //the three variable for quadratic equation
    double resultOne,resultTwo,calculation;

    //ask the user for input
    cout <<"Plese enter 3 numbers Which will represent the coefficients in the quadratic equation
ax2 + bx + c = 0 (ex. 1 2 3) :";
    cin >> a >> b >> c ;

    //caluclate the number that the user entered to match the quadratic formula
    calculation = pow(b, 2) - 4 * a * c;

    if (a == 0 || calculation < 0){
        cout <<"\nNo solution found"<<endl;
    }
}

```

```

else if (calculation == 0){
    resultOne = (-b - (sqrt(pow(b,2)-4* a * c))) / 2*a;
    cout <<"T\nThe solution is : "<<endl;
    cout<<resultOne<<endl<<endl;
}
else{

    resultOne = (-b - (sqrt(pow(b,2)-4* a * c))) / 2*a;
    resultTwo = (-b + (sqrt(pow(b,2)-4* a * c))) / 2*a;

    cout <<"\nThe solution are : "<<endl;
    cout<<resultOne<<endl<<resultTwo<<endl;

}

system("pause");
return 0;
}

```

4.2 source code

```

Plese enter 3 numbers Which will represent the
coefficients in the quadratic equation ax2 + bx +
c = 0 (ex. 1 2 3) :1 0 -8

```

```

The solution are :
-2.82843
2.82843
sh: pause: command not found
Program ended with exit code: 0

```

4.3 source code

```

Plese enter 3 numbers Which will represent the
coefficients in the quadratic equation ax2 + bx + c
= 0 (ex. 1 2 3) :0 3 5

```

```

No solution found
sh: pause: command not found
Program ended with exit code: 0

```


