LABORATORY 1

February 17, 2021

Abstract

We learn to convert an input into small categorical units which involves mathematical functions and labels.

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Ece 1310 C for Engineers

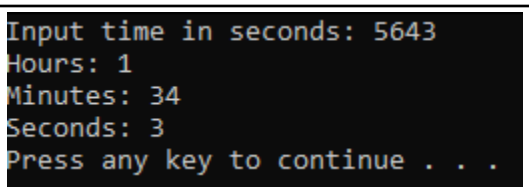
1. Write a C++ program that would ask a user to input time in seconds and then it prints this time duration in hours, minutes and seconds.

```
// ECE 1310-04
// Author: Jordan Xu
// Description: display number of seconds to hours, minutes and seconds
// Date: 2/17/2021

#include <iostream>
using namespace std;

int main() // convert seconds to hours, minutes and seconds
{
	int x;
	cout << "Input time in seconds: ";
	cin >> x;
	int hours = x / 3600;
	cout << "Hours: " << hours << endl;
	cout << "Minutes: " << x / 60 - hours * 60 << endl;
	cout << "Seconds: " << x % 60 << endl;

	return 0;
}
```



2. Write a C++ program that takes one temperature in degrees Fahrenheit and converts it to degrees Celsius then takes a second temperature in degrees Celsius and converts it to degrees Fahrenheit.

```
// ECE 1310-04
// Author: Jordan Xu
// Description: display number of Fahrenheit to Celsius and vise versa
// Date: 2/17/2021

#include <iostream>
using namespace std;

int main() // converting Fahrenheit to Celsius and vise versa
{
	double x;
	cout << "Input degrees Fahrenheit= ";
	cin >> x;
	cout << "Celsius= " << (x - 32) * 5 / 9 << endl;
	double y;
	cout << "Input degrees Celsius= ";
	cin >> y;
	cout << "Fahrenheit= " << y * 9 / 5 + 32 << endl;

	return 0;
}
```

```
input degrees fahrenheit= 123
celsius= 50.5556
input degrees Celsius= 50.5556
Fahrenheit= 123
Press any key to continue . . .
```

3. Write a C++ program that given a specific amount of cents, it calculates the number of quarters, dimes, nickels, and pennies needed to give change.

```
// ECE 1310-04
// Author: Jordan Xu
// Description: display number of cents to quarters, dimes, nickels, and pennies
// Date: 2/17/2021

#include <iostream>
using namespace std;

int main() // convert pennies to change
{
	int x;
	cout << "number of pennies: ";
	cin >> x;
	int quarters = x/25;
	int dimes = (x - quarters * 25) / 10;
	int nickels = (x - (quarters * 25) - (dimes * 10)) / 5;
	cout << "Quarters= " << quarters << endl;
	cout << "Dimes= " << dimes << endl;
	cout << "Nickels= " << nickels << endl;
	cout << "Pennies= " << x % 5 << endl;

	return 0;
}
```