

CST8110: Introduction to Computing: Tracking Time

Overview

If you want to track a player's elapse time from the start of game play, you'll need to use the function `time()`.

Here's some code that shows how to use `time()`.

Details: The C++ Code

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

#include <time.h> // for time_t, time(), ctime()

void main()
{
// The time_t data type is really an int in this version of the operating system.
time_t ttStartTime = time(NULL);
cout << "Current time: " << long(ttStartTime) << endl;

system("pause"); // Allow a program user to wait a few seconds before proceeding.

cout << "\nCurrent time: " << long(time(NULL)) << endl; // Now what time is it?

// Calculate and display the elpase time (single line of code)
cout << "Elapse (calculated in-line):" << long(time(NULL)-ttStartTime) << endl;
system("pause"); // Allow a program user to wait a few seconds before proceeding.

// Alternative: Calculate and display the elpase time (3 lines of code).
time_t ttCurrentTime = time(NULL);
long lElapseTime = long(ttCurrentTime - ttStartTime);
cout << "\nElapse (calculated separately):" << lElapseTime << endl;

system("pause"); // Allow a program user to wait a few seconds before proceeding.
cout << "\nWant to make millions in consulting work... \n";
system("pause"); // Allow a program user to wait a few seconds before proceeding.

// THE END OF TIME
// The following code sets a 32-bit integer to the largest possible signed value.
// I used hex assignment (0x7FFFFFFF) to make it clearer that we have (in binary)
// a 0 followed by 31 1's.
// - 0x7 --> 0111
// - 0xF --> 1111
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// The beginning of time as we know it . . .
// Thu Jan 1 00:00:00 1970 (GMT)
time_t ttSmallestSignedInt = 0x00000000; // decimal 0
cout << "\nThe Beginning of Time: " << ctime( & ttSmallestSignedInt);

// The end of time as we know it . . .
// Mon Jan 18 22:14:07 2038 (Eastern Standard Time) . . .
// The next second is invalid.
time_t ttLargestSignedInt = 0x7FFFFFFF; // decimal 2,147,483,647
cout << "\nThe End of Time: " << ctime( & ttLargestSignedInt);
}
```