ΠΑΝΕΠΙΣΤΗΜΙΟ ΚΥΠΡΟΥ
ΤΜΗΜΑ ΠΛΗΡΟΦΟΡΙΚΗΣ

ΕΠΛ 035: Δομές Δεδομένων και Αλγόριθμοι για Ηλεκτρολόγους Μηχανικούς και Μηχανικούς Υπολογιστών

Χειμερινό Εξάμηνο 2012

Εκπαιδευτικό Έγγραφο 1
Χρήση της βιβλιοθήκης <time.h> για την μέτρηση του χρόνου εκτέλεσης μίας εφαρμογής

Για χρήση με Visual Studio .NET →Visual C++ Projects→Console Application (.NET)

```
//This is the main project file for VC++ application project
//generated using an Application Wizard.

#include "stdafx.h"

#using <mscorlib.dll>
#include <time.h>

void sleep(clock_t wait);

/*To get the elapsed CPU time used by a process,
 *you can use the clock function. This facility is
 *declared in the header file `time.h'.

 *In typical usage, you call the clock function at
 *the beginning and end of the interval you want to
 *time, subtract the values, and then divide by
 *CLOCKS_PER_SEC (the number of clock ticks per second),
 *like the code below
 */
int main( void ){
      //You can put any time length you want for i for test
   long    i = 250000000;
   /*clock_t used for storing processor time
    *#ifndef _CLOCK_T_DEFINED
      *typedef long clock_t;
      *#define _CLOCK_T_DEFINED
      *#endif
      */
   clock_t start, finish;
   //duration is the program execution
   double  duration;
   int delay = 11;

   //Measure the duration of an event
```

```
   /*clock(void) returns the processor time used by the
    *program since the begining of execution
      */
   start = clock();
   while( i-- );
   finish = clock();

   /*Clock ticks macro - ANSI version
      *Declaration
      *#define CLOCKS_PER_SEC  1000
      */
   duration = (double)(finish - start) / CLOCKS_PER_SEC;

   printf("Start:%u\n", start);
   printf("Finish:%u\n", finish);
   printf( "Duration:%5.1f seconds\n", duration);
   printf( "Duration:%5.0f miliseconds\n", duration*1000);

   //Delay for a specified time
   printf("Delay for %i seconds\n", delay);
   sleep((clock_t)delay * CLOCKS_PER_SEC);
   printf("Done!\n");
}

//Pauses for a specified number of milliseconds
void sleep( clock_t wait ){
   clock_t goal;
   goal = wait + clock();
   while( goal > clock() );
}
```

Για χρήση με Unix/Linux

```
#include <time.h>

void sleep(clock_t wait);

/*To get the elapsed CPU time used by a process,
 *you can use the clock function. This facility is
 *declared in the header file `time.h'.

 *In typical usage, you call the clock function at
 *the beginning and end of the interval you want to
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   //Measure the duration of an event
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//Pauses for a specified number of milliseconds
void sleep( clock_t wait ){
   clock_t goal;
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