

Timing Tools

- `clock_gettime()`
- Accuracy: nano-second
- POSIX 1003.1b Real Time

```
$gcc test.c -lrt
```

```
#include <iostream>
#include <time.h>

timespec diff(timespec start, timespec end);

int main()
{
    timespec time1, time2;
    int temp;

    clock_gettime(CLOCK_MONOTONIC, &time1);
    for (int i = 0; i < 242000000; i++)
        temp += temp;
    clock_gettime(CLOCK_MONOTONIC, &time2);

    cout << diff(time1, time2).tv_sec
         << ":"
         << diff(time1, time2).tv_nsec
         << endl;
    return 0;
}
```

```
timespec diff(timespec start, timespec end)
{
    timespec temp;

    if ((end.tv_nsec-start.tv_nsec)<0) {
        temp.tv_sec = end.tv_sec-start.tv_sec-1;
        temp.tv_nsec = 1000000000+end.tv_nsec-start.tv_nsec;
    } else {
        temp.tv_sec = end.tv_sec-start.tv_sec;
        temp.tv_nsec = end.tv_nsec-start.tv_nsec;
    }

    return temp;
}
```