

## 4. threads.c example

```
$ cat -n ostep/code/intro/threads.c
```

```
 1  #include <stdio.h>
 2  #include <stdlib.h>
 3  #include "common.h"
 4  #include "common_threads.h"
 5
 6  volatile int counter = 0;
 7  int loops;
 8
 9  void *worker(void *arg) {
10      int i;
11      for (i = 0; i < loops; i++) {
12          counter++;
13      }
14      return NULL;
15  }
16
17  int main(int argc, char *argv[]) {
18      if (argc != 2) {
19          fprintf(stderr, "usage: threads <loops>\n");
20          exit(1);
21      }
22      loops = atoi(argv[1]);
23      pthread_t p1, p2;
24      printf("Initial value : %d\n", counter);
25      Pthread_create(&p1, NULL, worker, NULL);
26      Pthread_create(&p2, NULL, worker, NULL);
27      Pthread_join(p1, NULL);
28      Pthread_join(p2, NULL);
29      printf("Final value   : %d\n", counter);
30      return 0;
31  }
```

```
$
```

```
$ ./threads 10
```

```
Initial value : 0
```

```
Final value   : 20
```

```
$ ./threads 100
```

```
Initial value : 0
```

```
Final value   : 200
```

```
$ ./threads 1000
```

```
Initial value : 0
```

```
Final value   : 2000
```

```
$ ./threads 10000
```

```
Initial value : 0
```

```
Final value   : 19897
```

```
$ ./threads 10000
```

```
Initial value : 0
```

```
Final value   : 15562
```

```
$ ./threads 10000
```

```
Initial value : 0
```

```
Final value   : 14179
```

```
$ ./threads 100000
```

```
Initial value : 0
```

```
Final value   : 103750
```