"fetch and add"

```
int FetchAndAdd(int *addr) {
    int old = *addr;
    *addr = old + 1;
    return old;
}
```

"The Ticket Lock"

```
typedef struct __lock_t {
  int ticket;
  int turn;
} lock_t;

void lock_init(lock_t *lock) {
  lock->ticket = 0;
  lock->turn   = 0;
}

void lock(lock_t *lock) {
  int myturn = FetchAndAdd(&lock->ticket);
  while (lock->turn != myturn)
    ; // spin
}

void unlock(lock_t *lock) {
  FetchAndAdd(&lock->turn);
}
```