Race Condition & Critical Sections

do {
  entry section
  critical section
  exit section
  remainder section
} while (TRUE);
Semaphores

Semaphore $S$ – integer variable

Can only be accessed via two indivisible (atomic) operations:
- `wait()` and `signal()`, originally called `P()` and `V()` respectively

```c
wait (S) {
    while (S <= 0) ; // do nothing while (S<=0)
    S--; 
}

signal (S) { 
    S++; 
}
```

Paper “Monitors”
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• Examples:
  – Condition variables
  – Bounded Buffer
  – Scheduled Waits
  – Readers and Writers