Bounded buffer problem - Try 1

```
int n = 0;  semaphore s = 1;  semaphore delay = 0;

void producer()
{
  while (true) {
    produce();
    wait(s);
    append();
    n++;
    if (n==1) {
      signal(delay);
    }
    signal(s);
  }
}
```

```
void consumer()
{
  wait(delay);
  while(true) {
    wait(s);
    take();
    n--;
    signal(s);
    consume();
    if (n==0) {
      wait(delay);
    }
  }
}
```

Bounded buffer problem - Try 2

```
int n = 0;  semaphore s = 1;  semaphore delay = 0;

void producer()
{
  while (true) {
    produce();
    wait(s);
    append();
    n++;
    if (n==1) {
      signal(delay);
    }
    signal(s);
  }
}
```

```
void consumer()
{
  wait(delay);
  while(true) {
    wait(s);
    take();
    n--;
    consume();
    if (n==0) {
      wait(delay);
    }
    signal(s);
  }
}
```

Bounded buffer problem - Try 3

```
int n = 0;  semaphore s = 1;  semaphore delay = 0;
```

```
void producer()
{
  while (true) {
    produce();
    wait(s);
    append();
    n++;
    if (n==1) {
      signal(delay);
    }
    signal(s);
  }
}
```

```
void consumer()
{
  int m;
  wait(delay);
  while(true) {
    wait(s);
    take();
    n--;
    m = n;
    signal(s);
    consume();
    if (m==0) wait(delay);
  }
}
```