Week 4

#include <stdio.h>

#include <stdlib.h>

int mutex = 1;

int full = 0;

int empty = 3;

int x = 0;

void wait() {

--mutex;

}

void signal() {

++mutex;

}

void producer() {

wait();

++full;

--empty;

x++;

printf("Producer has produced: Item %d\n", x);

signal();

}

void consumer() {

wait();

--full;

++empty;

printf("Consumer has consumed: Item %d\n", x);

x--;

signal();

}

int main() {

int choice;

while (1) {

printf("\nEnter 1.Producer 2.Consumer 3.Exit\n");

printf("Enter your choice: ");

scanf("%d", &choice);

switch (choice) {

case 1:

if ((mutex == 1) && (empty != 0)) {

producer();

} else {

printf("Buffer is full!\n");

}

break;

case 2:

if ((mutex == 1) && (full != 0)) {

consumer();

} else {

printf("Buffer is empty!\n");

}

break;

case 3:

exit(0);

default:

printf("Invalid choice!\n");

}

}

return 0;

}

