P&C

#include <stdio.h>

#define SIZE 5

int buffer[SIZE]; // Shared buffer

int in = 0; // Index for producer

int out = 0; // Index for consumer

int count = 0; // Number of items in buffer

void produce(int item) {

if (count == SIZE) {

printf("Buffer is full. Cannot produce.\n");

} else {

buffer[in] = item;

printf("Produced: %d at index %d\n", item, in);

in = (in + 1) % SIZE;

count++;

}

}

void consume() {

if (count == 0) {

printf("Buffer is empty. Cannot consume.\n");

} else {

int item = buffer[out];

printf("Consumed: %d from index %d\n", item, out);

out = (out + 1) % SIZE;

count--;

}

}

int main() {

int choice, item;

while (1) {

printf("\n1. Produce\n2. Consume\n3. Exit\nEnter choice: ");

scanf("%d", &choice);

switch (choice) {

case 1:

printf("Enter item to produce: ");

scanf("%d", &item);

produce(item);

break;

case 2:

consume();

break;

case 3:

return 0;

default:

printf("Invalid choice!\n");

}

}

}