**ASSIGNMENT 7**

#include <stdio.h>

#include <pthread.h>

#include <unistd.h>

int B = 2;

int results[100];

int count = 0;

void record\_result(int val) {

for (int i = 0; i < count; i++) {

if (results[i] == val) return;

}

results[count++] = val;

}

// Version 1: P1 then P2

void\* version1(void\* arg) {

B = 2;

int C = B - 1;

B = 2 \* C;

int D = 2 \* B;

B = D - 1;

record\_result(B);

return NULL;

}

// Version 2: P2 then P1

void\* version2(void\* arg) {

B = 2;

int D = 2 \* B;

B = D - 1;

int C = B - 1;

B = 2 \* C;

record\_result(B);

return NULL;

}

// Version 3: Interleaved

void\* version3(void\* arg) {

B = 2;

int C = B - 1;

int D = 2 \* B;

B = D - 1;

B = 2 \* C;

record\_result(B);

return NULL;

}

// Version 4: Interleaved (another)

void\* version4(void\* arg) {

B = 2;

int D = 2 \* B;

int C = B - 1;

B = 2 \* C;

B = D - 1;

record\_result(B);

return NULL;

}

int main() {

pthread\_t t1, t2, t3, t4;

pthread\_create(&t1, NULL, version1, NULL);

pthread\_join(t1, NULL);

pthread\_create(&t2, NULL, version2, NULL);

pthread\_join(t2, NULL);

pthread\_create(&t3, NULL, version3, NULL);

pthread\_join(t3, NULL);

pthread\_create(&t4, NULL, version4, NULL);

pthread\_join(t4, NULL);

printf("\n🔢 Distinct values of B:\n");

for (int i = 0; i < count; i++) {

printf("B = %d\n", results[i]);

}

printf("\n🧠 Total distinct values: %d\n", count);

return 0;

}