**Write a program illustrating how to create a simple thread This program implements the summation function where the summation operation is run as a separate thread.**

#include <stdio.h>

#include <stdlib.h>

#include <pthread.h>

#define ARRAY\_SIZE 100000

#define NUM\_THREADS 1

int array[ARRAY\_SIZE];

long long sum = 0;

void \*sum\_thread(void \*arg) {

int start = \*(int \*) arg;

int end = start + ARRAY\_SIZE / NUM\_THREADS;

long long thread\_sum = 0;

for (int i = start; i < end; i++) {

thread\_sum += array[i];

}

sum += thread\_sum;

pthread\_exit(NULL);

}

int main() {

pthread\_t threads[NUM\_THREADS];

int thread\_args[NUM\_THREADS];

for (int i = 0; i < ARRAY\_SIZE; i++) {

array[i] = rand() % 100;

}

for (int i = 0; i < NUM\_THREADS; i++) {

thread\_args[i] = i \* ARRAY\_SIZE / NUM\_THREADS;

pthread\_create(&threads[i], NULL, sum\_thread, (void \*) &thread\_args[i]);

}

for (int i = 0; i < NUM\_THREADS; i++) {

pthread\_join(threads[i], NULL);

}

printf("Sum of array elements: %lld\n", sum);

return 0;

}

