**Using Thread Sanitizer to debug Data races:**  
  
A data race is when multiple threads in a process each access the same piece of state, leading to the program behaviour change based on which thread access the state first.  
  
Below is the sample c code to verify the data race.  
  
These two threads incrementing and decrementing the global variable and final value of global variable should be 0. But increment and decrement is non-atomic and happen in parallel leading to the data race.  
  
Compile the code and run with Tsan:  
# **gcc -g -fsanitize=thread <program\_name.c> -o <program\_name> -lpthread**  
  
Thread sanitizer has analyzed that two threads reading from and writing to the same global variable without any sort synchronization.

