CSC4100/CSC5100 – Midterm Exam

Watch below videos before starting to write the program

https://www.youtube.com/watch?v=ldJ8WGZVXZk

https://www.youtube.com/watch?v=raLCgPK-Igc

Reference
http://www.csc.villanova.edu/~mdamian/threads/posixthreads.html

Thread (linux only)

- **Add #include <pthread.h>**
- **Initialize a thread**

  pthread_t thread1

- Create a new thread

  pthread_create(pthread_t *thread, const pthread_attr_t *attr,
  void *(*start_routine)(void*), void *arg)

- Join thread – Allows child to complete before main thread ends

  pthread_join(tid, NULL);

- Exit

  exit(0);

- Run program for sum

```
coursework@coursework:~/Documents$ gcc sumthrd.c -o sum.o -Wall -lpthread
coursework@coursework:~/Documents$ ./sum.o
Sum of whole array = 55
coursework@coursework:~/Documents$
```

See attachment for code examples

1) **Create a C program that performs the below**
   a. **Create five threads**
   b. **Calculate sum of numbers from 1 – 100**
   c. **Thread 1 – sum from 1 – 20**
      Thread 2 – sum from 21 – 40

Thread 3 – sum from 41 – 60

Thread 4 – sum from 61 – 80

Thread 5 – sum from 81 – 100

d. Calculate the total sum from all the threads and print