

OS-Assignment-2 Question 1

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Makefile instructions:

```
$ make run1 - To run Q1_part1.c  
$ make run2 - To run Q1_part2.c  
$ make clean - To delete the object files
```

Q1_part1.c : Processes

1. This part uses two processes i.e parent and child processes to increment and decrement the global counter variable respectively. To create a new process, fork() system call is used. The parent process waits for the completion of the child process using waitpid()
2. Individual Processes are independent of each other, Also, Processes have independent data and code segments.
3. Therefore, As seen while running the program, Each process has it's own copy of the global variable counter.
4. The child process decrements the value of the counter from 10 upto -90. The parent process increments the value of the counter from 10 upto 100

Q2_part1.c: Threads

1. This part uses two threads i.e parent and child threads to increment and decrement the global counter variable respectively. To create a new thread, <pthread.h> is included and pthread_create() function is used.
2. Individual threads are dependent on each other, Also, threads share independent data and code segments.
3. Therefore, As seen while running the program, Each thread has manipulates the same global variable counter.
4. The child thread decrements the value of the counter from 10 upto -90. The parent thread increments the same global variable upto 100.
5. The threads undergo context switches from time to time, And the value is modified for the duration of the burst time for each thread

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