

Question 1

Write a program in C which creates 10 POSIX threads. These threads must individually generate arrays of 1.000 random integers between 1.000 and 9.999 (inclusive) and count how many of these numbers are prime numbers.

Sample Run

```
$ ./program1
Thread 1 - 1 primes.
Thread 0 - 1 primes.
Thread 3 - 1 primes.
Thread 5 - 2 primes.
Thread 9 - 1 primes.
Thread 2 - 0 primes.
Thread 6 - 1 primes.
Thread 4 - 1 primes.
Thread 8 - 3 primes.
Thread 7 - 0 primes.
```

Question 2

Now alter the program in Question 1, such that now the main thread creates a single array of 10.000 random integers between 1.000 and 9.999 and each thread gets one tenth of this array (instead of generating their individual arrays).

Question 1

Write a program in C which creates 5 POSIX threads. These threads must individually generate arrays of 2.000 random integers between 0 and 50.000 (inclusive) and classify these integers according to their number of digits.

Sample Run

```
$ ./program1
Thread 0: 1-9: 0, 10-99: 7, 100-999: 34, 1000-9999: 358, 10000-99999: 1601
Thread 2: 1-9: 0, 10-99: 5, 100-999: 38, 1000-9999: 366, 10000-99999: 1591
Thread 3: 1-9: 0, 10-99: 2, 100-999: 35, 1000-9999: 373, 10000-99999: 1590
Thread 1: 1-9: 0, 10-99: 2, 100-999: 24, 1000-9999: 356, 10000-99999: 1618
Thread 5: 1-9: 1, 10-99: 5, 100-999: 45, 1000-9999: 346, 10000-99999: 1603
```

Question 2

Now alter the program in Question 1, such that now the main thread creates and fills a single array of 10.000 random integers and each thread gets one fifth of this array (instead of generating their individual arrays).

Question 1

Write a program in C which creates 10 POSIX threads. These threads must individually generate arrays of 5.000 random lowercase characters (a-z) and count number of vowel and consonant characters.

Sample Run

```
$ ./program1
Thread 140026609727232: Vowels: 364, consonants: 4636
Thread 140026601334528: Vowels: 370, consonants: 4630
Thread 140026592941824: Vowels: 386, consonants: 4614
Thread 140026584549120: Vowels: 406, consonants: 4594
Thread 140026576156416: Vowels: 395, consonants: 4605
Thread 140026567763712: Vowels: 385, consonants: 4615
Thread 140026550978304: Vowels: 403, consonants: 4597
Thread 140026534192896: Vowels: 430, consonants: 4570
Thread 140026542585600: Vowels: 416, consonants: 4584
Thread 140026559371008: Vowels: 385, consonants: 4615
```

Question 2

Now alter the program in Question 1, such that now the main thread creates and fills a single array of 50.000 random characters and each thread gets one tenth of this array (instead of generating their individual arrays).