Reg No. 20BCE1685
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Course code: CSE4001
Course: Parallel and distributing computing
Title: Week 5 Lab Assignment

Q: Write an open mp program to find total number of prime numbers between 2 to N.

Algorithm:

(I) Run a for loop and use #pragma omp parallel for schedule(clause,).
(II) For all powers of 2 pass the value in function to compute total no of primes.
(III) In function noofprimes count all the prime no from 2 to N.
(IV) return count of prime numbers and print.
(V) calculate the execution time and print.

Code:

```
#include<stdio.h>
#include<omp.h>
#include<math.h>
#include<stdbool.h>
#include<time.h>
#include<stdlib.h>

bool prime(int x)
{
   int flag=0;
   for(int i=2;i<=x/2;i++)
   {
      if(x%i==0)
      {
         flag=1;
         break;
      }
   }
   return (flag==0)? true:false;
}

int noofprimes(int n)
{
   int cnt=0;
   #pragma omp parallel for reduction(+:cnt)
   for(int i=2;i<=n;i++)
   {
      if(prime(i))
      {
         cnt++;
      }
   }
   return cnt;
```

```
}

int main(int argc,char *argv[])
{
   clock_t time;
   /*int N;
   printf("Enter power of 2: ");
   scanf("%d",&N);*/
   int nthreads=atoi(argv[1]);
   omp_set_num_threads(nthreads);
   time=clock();
   printf("\n--------Static Thread Scheduling--------\n");
   #pragma omp parallel for schedule(static,3)
   for (int i=0;i<18;i++)
   {
     printf("Total no. of prime numbers between 2 to %d = %d \n",
(int)pow(2,i),noofprimes(pow(2,i)));
   }
   time=clock()-time;
   double t=(double)time/CLOCKS_PER_SEC;
   printf("Execution Time = %lfms \n",t);
   time=clock();
   printf("\n--------Dynammic Thread Scheduling--------\n");
   #pragma omp parallel for schedule(dynamic,3)
   for (int i=0;i<18;i++)
   {
     printf("Total no. of prime numbers between 2 to %d = %d \n",
(int)pow(2,i),noofprimes(pow(2,i)));
   }
   time=clock()-time;
   t=(double)time/CLOCKS_PER_SEC;
   printf("Execution Time = %lfms \n",t);
   time=clock();
   printf("\n--------Guided Thread Scheduling--------\n");
   #pragma omp parallel for schedule(guided,3)
   for (int i=0;i<18;i++)
   {
     printf("Total no. of prime numbers between 2 to %d = %d \n",
(int)pow(2,i),noofprimes(pow(2,i)));
   }
   time=clock()-time;
   t=(double)time/CLOCKS_PER_SEC;
   printf("Execution Time = %lfms \n",t);
   return 0;
}
```

Output:

For Thread 1:

```
[priyanshuvyas@fedora PdcLab]$ cc week5.c -fopenmp -lm
[priyanshuvyas@fedora PdcLab]$ ./a.out 1

--------Static Thread Scheduling--------
Total no. of prime numbers between 2 to 1 = 0
Total no. of prime numbers between 2 to 2 = 1
Total no. of prime numbers between 2 to 4 = 2
Total no. of prime numbers between 2 to 8 = 4
Total no. of prime numbers between 2 to 16 = 6
Total no. of prime numbers between 2 to 32 = 11
Total no. of prime numbers between 2 to 64 = 18
Total no. of prime numbers between 2 to 128 = 31
Total no. of prime numbers between 2 to 256 = 54
Total no. of prime numbers between 2 to 512 = 97
Total no. of prime numbers between 2 to 1024 = 172
Total no. of prime numbers between 2 to 2048 = 309
Total no. of prime numbers between 2 to 4096 = 564
Total no. of prime numbers between 2 to 8192 = 1028
Total no. of prime numbers between 2 to 16384 = 1900
Total no. of prime numbers between 2 to 32768 = 3512
Total no. of prime numbers between 2 to 65536 = 6542
Total no. of prime numbers between 2 to 131072 = 12251
Execution Time = 2.370684ms

--------Dynammic Thread Scheduling--------
Total no. of prime numbers between 2 to 1 = 0
Total no. of prime numbers between 2 to 2 = 1
Total no. of prime numbers between 2 to 4 = 2
Total no. of prime numbers between 2 to 8 = 4
Total no. of prime numbers between 2 to 16 = 6
Total no. of prime numbers between 2 to 32 = 11
Total no. of prime numbers between 2 to 64 = 18
Total no. of prime numbers between 2 to 128 = 31
Total no. of prime numbers between 2 to 256 = 54
Total no. of prime numbers between 2 to 512 = 97
Total no. of prime numbers between 2 to 1024 = 172
Total no. of prime numbers between 2 to 2048 = 309
Total no. of prime numbers between 2 to 4096 = 564
Total no. of prime numbers between 2 to 8192 = 1028
Total no. of prime numbers between 2 to 16384 = 1900
Total no. of prime numbers between 2 to 32768 = 3512
Total no. of prime numbers between 2 to 65536 = 6542
Total no. of prime numbers between 2 to 131072 = 12251
```

```
--------Dynammic Thread Scheduling--------
Total no. of prime numbers between 2 to 1 = 0
Total no. of prime numbers between 2 to 2 = 1
Total no. of prime numbers between 2 to 4 = 2
Total no. of prime numbers between 2 to 8 = 4
Total no. of prime numbers between 2 to 16 = 6
Total no. of prime numbers between 2 to 32 = 11
Total no. of prime numbers between 2 to 64 = 18
Total no. of prime numbers between 2 to 128 = 31
Total no. of prime numbers between 2 to 256 = 54
Total no. of prime numbers between 2 to 512 = 97
Total no. of prime numbers between 2 to 1024 = 172
Total no. of prime numbers between 2 to 2048 = 309
Total no. of prime numbers between 2 to 4096 = 564
Total no. of prime numbers between 2 to 8192 = 1028
Total no. of prime numbers between 2 to 16384 = 1900
Total no. of prime numbers between 2 to 32768 = 3512
Total no. of prime numbers between 2 to 65536 = 6542
Total no. of prime numbers between 2 to 131072 = 12251
Execution Time = 2.366788ms

--------Guided Thread Scheduling--------
Total no. of prime numbers between 2 to 1 = 0
Total no. of prime numbers between 2 to 2 = 1
Total no. of prime numbers between 2 to 4 = 2
Total no. of prime numbers between 2 to 8 = 4
Total no. of prime numbers between 2 to 16 = 6
Total no. of prime numbers between 2 to 32 = 11
Total no. of prime numbers between 2 to 64 = 18
Total no. of prime numbers between 2 to 128 = 31
Total no. of prime numbers between 2 to 256 = 54
Total no. of prime numbers between 2 to 512 = 97
Total no. of prime numbers between 2 to 1024 = 172
Total no. of prime numbers between 2 to 2048 = 309
Total no. of prime numbers between 2 to 4096 = 564
Total no. of prime numbers between 2 to 8192 = 1028
Total no. of prime numbers between 2 to 16384 = 1900
Total no. of prime numbers between 2 to 32768 = 3512
Total no. of prime numbers between 2 to 65536 = 6542
Total no. of prime numbers between 2 to 131072 = 12251
Execution Time = 2.365559ms
[priyanshuvyas@fedora PdcLab]$
```

For Thread 2:

```
[priyanshuvyas@fedora PdcLab]$ cc week5.c -fopenmp -lm
[priyanshuvyas@fedora PdcLab]$ ./a.out 2

--------Static Thread Scheduling--------
Total no. of prime numbers between 2 to 1 = 0
Total no. of prime numbers between 2 to 2 = 1
Total no. of prime numbers between 2 to 4 = 2
Total no. of prime numbers between 2 to 8 = 4
Total no. of prime numbers between 2 to 16 = 6
Total no. of prime numbers between 2 to 32 = 11
Total no. of prime numbers between 2 to 64 = 18
Total no. of prime numbers between 2 to 128 = 31
Total no. of prime numbers between 2 to 256 = 54
Total no. of prime numbers between 2 to 512 = 97
Total no. of prime numbers between 2 to 1024 = 172
Total no. of prime numbers between 2 to 2048 = 309
Total no. of prime numbers between 2 to 4096 = 564
Total no. of prime numbers between 2 to 8192 = 1028
Total no. of prime numbers between 2 to 16384 = 1900
Total no. of prime numbers between 2 to 32768 = 3512
Total no. of prime numbers between 2 to 65536 = 6542
Total no. of prime numbers between 2 to 131072 = 12251
Execution Time = 2.437542ms

--------Dynammic Thread Scheduling--------
Total no. of prime numbers between 2 to 8 = 4
Total no. of prime numbers between 2 to 1 = 0
Total no. of prime numbers between 2 to 2 = 1
Total no. of prime numbers between 2 to 16 = 6
Total no. of prime numbers between 2 to 32 = 11
Total no. of prime numbers between 2 to 4 = 2
Total no. of prime numbers between 2 to 64 = 18
Total no. of prime numbers between 2 to 128 = 31
Total no. of prime numbers between 2 to 256 = 54
Total no. of prime numbers between 2 to 512 = 97
Total no. of prime numbers between 2 to 1024 = 172
Total no. of prime numbers between 2 to 2048 = 309
Total no. of prime numbers between 2 to 4096 = 564
Total no. of prime numbers between 2 to 8192 = 1028
Total no. of prime numbers between 2 to 16384 = 1900
Total no. of prime numbers between 2 to 32768 = 3512
Total no. of prime numbers between 2 to 65536 = 6542
Total no. of prime numbers between 2 to 131072 = 12251
```


```
--------Dynammic Thread Scheduling--------
Total no. of prime numbers between 2 to 8 = 4
Total no. of prime numbers between 2 to 1 = 0
Total no. of prime numbers between 2 to 2 = 1
Total no. of prime numbers between 2 to 16 = 6
Total no. of prime numbers between 2 to 32 = 11
Total no. of prime numbers between 2 to 4 = 2
Total no. of prime numbers between 2 to 64 = 18
Total no. of prime numbers between 2 to 128 = 31
Total no. of prime numbers between 2 to 256 = 54
Total no. of prime numbers between 2 to 512 = 97
Total no. of prime numbers between 2 to 1024 = 172
Total no. of prime numbers between 2 to 2048 = 309
Total no. of prime numbers between 2 to 4096 = 564
Total no. of prime numbers between 2 to 8192 = 1028
Total no. of prime numbers between 2 to 16384 = 1900
Total no. of prime numbers between 2 to 32768 = 3512
Total no. of prime numbers between 2 to 65536 = 6542
Total no. of prime numbers between 2 to 131072 = 12251
```


```
Execution Time = 2.391158ms

--------Guided Thread Scheduling--------
Total no. of prime numbers between 2 to 1 = 0
Total no. of prime numbers between 2 to 2 = 1
Total no. of prime numbers between 2 to 4 = 2
Total no. of prime numbers between 2 to 8 = 4
Total no. of prime numbers between 2 to 16 = 6
Total no. of prime numbers between 2 to 32 = 11
Total no. of prime numbers between 2 to 64 = 18
Total no. of prime numbers between 2 to 128 = 31
Total no. of prime numbers between 2 to 256 = 54
Total no. of prime numbers between 2 to 512 = 97
Total no. of prime numbers between 2 to 1024 = 172
Total no. of prime numbers between 2 to 2048 = 309
Total no. of prime numbers between 2 to 4096 = 564
Total no. of prime numbers between 2 to 8192 = 1028
Total no. of prime numbers between 2 to 16384 = 1900
Total no. of prime numbers between 2 to 32768 = 3512
Total no. of prime numbers between 2 to 65536 = 6542
Total no. of prime numbers between 2 to 131072 = 12251
Execution Time = 2.398254ms
[priyanshuvyas@fedora PdcLab]$
```

For Thread 3:

```
[priyanshuvyas@fedora PdcLab]$ cc week5.c -fopenmp -lm
[priyanshuvyas@fedora PdcLab]$ ./a.out 3

--------Static Thread Scheduling--------
Total no. of prime numbers between 2 to 1 = 0
Total no. of prime numbers between 2 to 2 = 1
Total no. of prime numbers between 2 to 4 = 2
Total no. of prime numbers between 2 to 64 = 18
Total no. of prime numbers between 2 to 8 = 4
Total no. of prime numbers between 2 to 128 = 31
Total no. of prime numbers between 2 to 16 = 6
Total no. of prime numbers between 2 to 32 = 11
Total no. of prime numbers between 2 to 256 = 54
Total no. of prime numbers between 2 to 512 = 97
Total no. of prime numbers between 2 to 1024 = 172
Total no. of prime numbers between 2 to 2048 = 309
Total no. of prime numbers between 2 to 4096 = 564
Total no. of prime numbers between 2 to 8192 = 1028
Total no. of prime numbers between 2 to 16384 = 1900
Total no. of prime numbers between 2 to 32768 = 3512
Total no. of prime numbers between 2 to 65536 = 6542
Total no. of prime numbers between 2 to 131072 = 12251
Execution Time = 2.437387ms

--------Dynammic Thread Scheduling--------
Total no. of prime numbers between 2 to 1 = 0
Total no. of prime numbers between 2 to 8 = 4
Total no. of prime numbers between 2 to 64 = 18
Total no. of prime numbers between 2 to 16 = 6
Total no. of prime numbers between 2 to 2 = 1
Total no. of prime numbers between 2 to 4 = 2
Total no. of prime numbers between 2 to 128 = 31
Total no. of prime numbers between 2 to 256 = 54
Total no. of prime numbers between 2 to 512 = 97
Total no. of prime numbers between 2 to 1024 = 172
Total no. of prime numbers between 2 to 32 = 11
Total no. of prime numbers between 2 to 2048 = 309
Total no. of prime numbers between 2 to 4096 = 564
Total no. of prime numbers between 2 to 8192 = 1028
Total no. of prime numbers between 2 to 16384 = 1900
Total no. of prime numbers between 2 to 32768 = 3512
Total no. of prime numbers between 2 to 65536 = 6542
Total no. of prime numbers between 2 to 131072 = 12251
```

```
--------Dynammic Thread Scheduling--------
Total no. of prime numbers between 2 to 1 = 0
Total no. of prime numbers between 2 to 8 = 4
Total no. of prime numbers between 2 to 64 = 18
Total no. of prime numbers between 2 to 16 = 6
Total no. of prime numbers between 2 to 2 = 1
Total no. of prime numbers between 2 to 4 = 2
Total no. of prime numbers between 2 to 128 = 31
Total no. of prime numbers between 2 to 256 = 54
Total no. of prime numbers between 2 to 512 = 97
Total no. of prime numbers between 2 to 1024 = 172
Total no. of prime numbers between 2 to 32 = 11
Total no. of prime numbers between 2 to 2048 = 309
Total no. of prime numbers between 2 to 4096 = 564
Total no. of prime numbers between 2 to 8192 = 1028
Total no. of prime numbers between 2 to 16384 = 1900
Total no. of prime numbers between 2 to 32768 = 3512
Total no. of prime numbers between 2 to 65536 = 6542
Total no. of prime numbers between 2 to 131072 = 12251
Execution Time = 2.423852ms

--------Guided Thread Scheduling--------
Total no. of prime numbers between 2 to 1 = 0
Total no. of prime numbers between 2 to 2 = 1
Total no. of prime numbers between 2 to 4 = 2
Total no. of prime numbers between 2 to 8 = 4
Total no. of prime numbers between 2 to 16 = 6
Total no. of prime numbers between 2 to 32 = 11
Total no. of prime numbers between 2 to 64 = 18
Total no. of prime numbers between 2 to 128 = 31
Total no. of prime numbers between 2 to 256 = 54
Total no. of prime numbers between 2 to 1024 = 172
Total no. of prime numbers between 2 to 512 = 97
Total no. of prime numbers between 2 to 2048 = 309
Total no. of prime numbers between 2 to 4096 = 564
Total no. of prime numbers between 2 to 8192 = 1028
Total no. of prime numbers between 2 to 16384 = 1900
Total no. of prime numbers between 2 to 32768 = 3512
Total no. of prime numbers between 2 to 65536 = 6542
Total no. of prime numbers between 2 to 131072 = 12251
Execution Time = 2.458586ms
[priyanshuvyas@fedora PdcLab]$
```

For Thread 4:

```
[priyanshuvyas@fedora PdcLab]$ cc week5.c -fopenmp -lm
[priyanshuvyas@fedora PdcLab]$ ./a.out 4

--------Static Thread Scheduling--------
Total no. of prime numbers between 2 to 1 = 0
Total no. of prime numbers between 2 to 2 = 1
Total no. of prime numbers between 2 to 4 = 2
Total no. of prime numbers between 2 to 64 = 18
Total no. of prime numbers between 2 to 128 = 31
Total no. of prime numbers between 2 to 256 = 54
Total no. of prime numbers between 2 to 8 = 4
Total no. of prime numbers between 2 to 512 = 97
Total no. of prime numbers between 2 to 16 = 6
Total no. of prime numbers between 2 to 32 = 11
Total no. of prime numbers between 2 to 1024 = 172
Total no. of prime numbers between 2 to 2048 = 309
Total no. of prime numbers between 2 to 4096 = 564
Total no. of prime numbers between 2 to 8192 = 1028
Total no. of prime numbers between 2 to 16384 = 1900
Total no. of prime numbers between 2 to 32768 = 3512
Total no. of prime numbers between 2 to 65536 = 6542
Total no. of prime numbers between 2 to 131072 = 12251
Execution Time = 2.452797ms

--------Dynammic Thread Scheduling--------
Total no. of prime numbers between 2 to 1 = 0
Total no. of prime numbers between 2 to 8 = 4
Total no. of prime numbers between 2 to 16 = 6
Total no. of prime numbers between 2 to 32 = 11
Total no. of prime numbers between 2 to 64 = 18
Total no. of prime numbers between 2 to 128 = 31
Total no. of prime numbers between 2 to 512 = 97
Total no. of prime numbers between 2 to 256 = 54
Total no. of prime numbers between 2 to 1024 = 172
Total no. of prime numbers between 2 to 2 = 1
Total no. of prime numbers between 2 to 4 = 2
Total no. of prime numbers between 2 to 2048 = 309
Total no. of prime numbers between 2 to 4096 = 564
Total no. of prime numbers between 2 to 8192 = 1028
Total no. of prime numbers between 2 to 16384 = 1900
Total no. of prime numbers between 2 to 32768 = 3512
Total no. of prime numbers between 2 to 65536 = 6542
Total no. of prime numbers between 2 to 131072 = 12251
```

```
--------Dynammic Thread Scheduling--------
Total no. of prime numbers between 2 to 1 = 0
Total no. of prime numbers between 2 to 8 = 4
Total no. of prime numbers between 2 to 16 = 6
Total no. of prime numbers between 2 to 32 = 11
Total no. of prime numbers between 2 to 64 = 18
Total no. of prime numbers between 2 to 128 = 31
Total no. of prime numbers between 2 to 512 = 97
Total no. of prime numbers between 2 to 256 = 54
Total no. of prime numbers between 2 to 1024 = 172
Total no. of prime numbers between 2 to 2 = 1
Total no. of prime numbers between 2 to 4 = 2
Total no. of prime numbers between 2 to 2048 = 309
Total no. of prime numbers between 2 to 4096 = 564
Total no. of prime numbers between 2 to 8192 = 1028
Total no. of prime numbers between 2 to 16384 = 1900
Total no. of prime numbers between 2 to 32768 = 3512
Total no. of prime numbers between 2 to 65536 = 6542
Total no. of prime numbers between 2 to 131072 = 12251
Execution Time = 2.447832ms

--------Guided Thread Scheduling--------
Total no. of prime numbers between 2 to 32 = 11
Total no. of prime numbers between 2 to 64 = 18
Total no. of prime numbers between 2 to 128 = 31
Total no. of prime numbers between 2 to 256 = 54
Total no. of prime numbers between 2 to 512 = 97
Total no. of prime numbers between 2 to 1 = 0
Total no. of prime numbers between 2 to 2 = 1
Total no. of prime numbers between 2 to 4 = 2
Total no. of prime numbers between 2 to 8 = 4
Total no. of prime numbers between 2 to 16 = 6
Total no. of prime numbers between 2 to 1024 = 172
Total no. of prime numbers between 2 to 2048 = 309
Total no. of prime numbers between 2 to 4096 = 564
Total no. of prime numbers between 2 to 8192 = 1028
Total no. of prime numbers between 2 to 16384 = 1900
Total no. of prime numbers between 2 to 32768 = 3512
Total no. of prime numbers between 2 to 65536 = 6542
Total no. of prime numbers between 2 to 131072 = 12251
Execution Time = 2.460115ms
[priyanshuvyas@fedora PdcLab]$
```

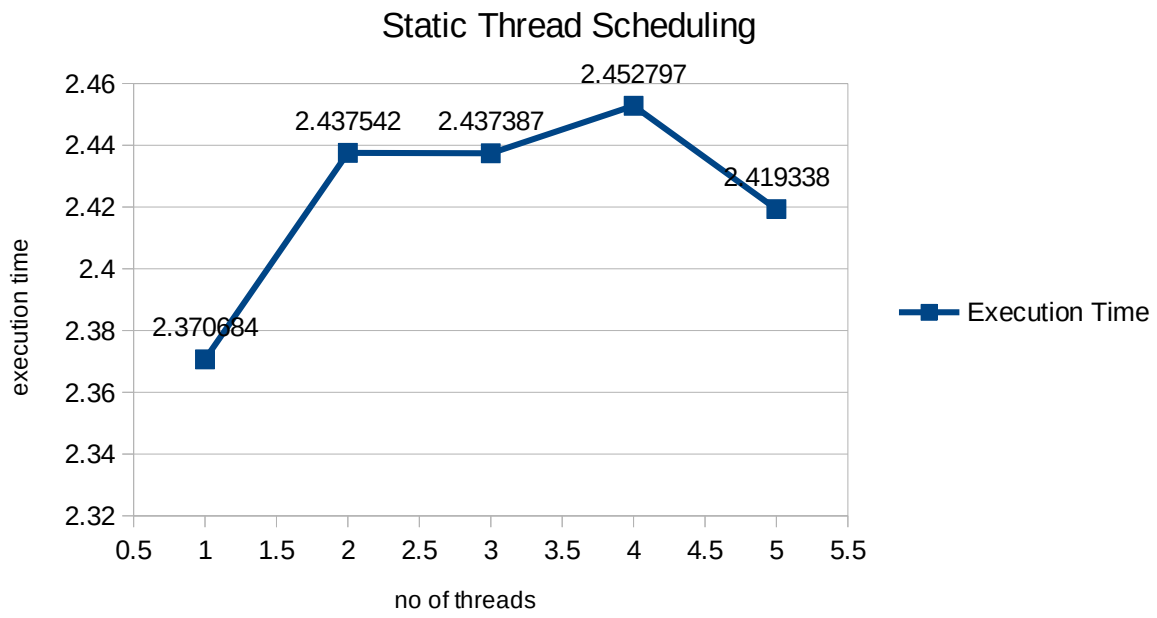
For Thread 5:

```
[priyanshuvyas@fedora PdcLab]$ cc week5.c -fopenmp -lm
[priyanshuvyas@fedora PdcLab]$ ./a.out 5

--------Static Thread Scheduling--------
Total no. of prime numbers between 2 to 8 = 4
Total no. of prime numbers between 2 to 16 = 6
Total no. of prime numbers between 2 to 64 = 18
Total no. of prime numbers between 2 to 1 = 0
Total no. of prime numbers between 2 to 128 = 31
Total no. of prime numbers between 2 to 32 = 11
Total no. of prime numbers between 2 to 2 = 1
Total no. of prime numbers between 2 to 256 = 54
Total no. of prime numbers between 2 to 4 = 2
Total no. of prime numbers between 2 to 512 = 97
Total no. of prime numbers between 2 to 1024 = 172
Total no. of prime numbers between 2 to 2048 = 309
Total no. of prime numbers between 2 to 4096 = 564
Total no. of prime numbers between 2 to 8192 = 1028
Total no. of prime numbers between 2 to 16384 = 1900
Total no. of prime numbers between 2 to 32768 = 3512
Total no. of prime numbers between 2 to 65536 = 6542
Total no. of prime numbers between 2 to 131072 = 12251
Execution Time = 2.419338ms

--------Dynammic Thread Scheduling--------
Total no. of prime numbers between 2 to 8 = 4
Total no. of prime numbers between 2 to 16 = 6
Total no. of prime numbers between 2 to 64 = 18
Total no. of prime numbers between 2 to 128 = 31
Total no. of prime numbers between 2 to 1 = 0
Total no. of prime numbers between 2 to 2 = 1
Total no. of prime numbers between 2 to 512 = 97
Total no. of prime numbers between 2 to 4 = 2
Total no. of prime numbers between 2 to 256 = 54
Total no. of prime numbers between 2 to 32 = 11
Total no. of prime numbers between 2 to 1024 = 172
Total no. of prime numbers between 2 to 2048 = 309
Total no. of prime numbers between 2 to 4096 = 564
Total no. of prime numbers between 2 to 8192 = 1028
Total no. of prime numbers between 2 to 16384 = 1900
Total no. of prime numbers between 2 to 32768 = 3512
Total no. of prime numbers between 2 to 65536 = 6542
Total no. of prime numbers between 2 to 131072 = 12251
```

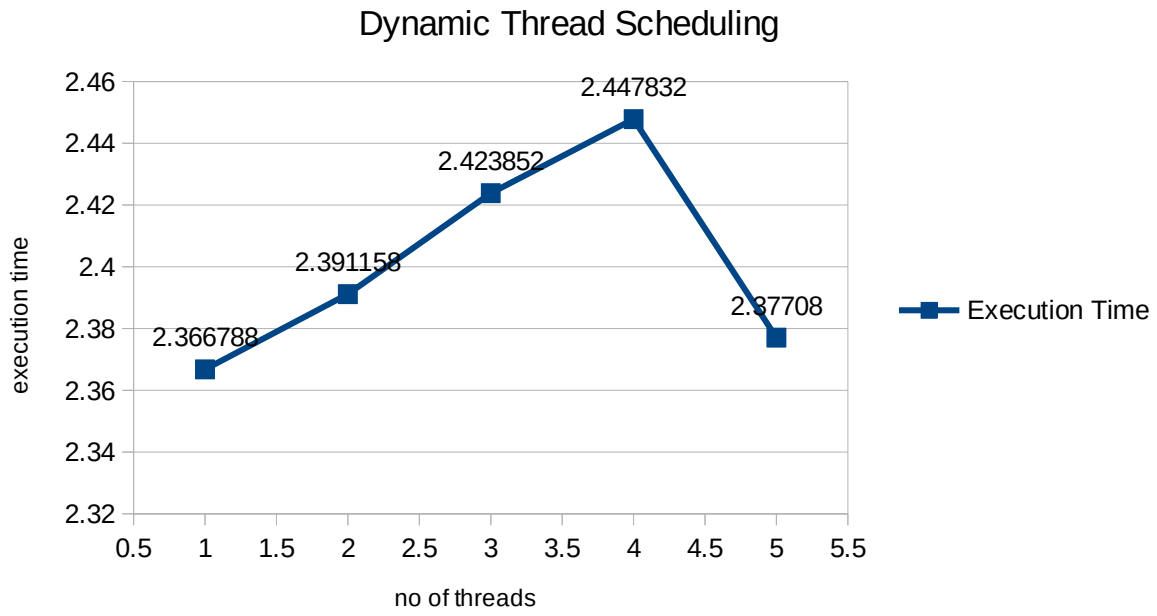
```
--------Dynammic Thread Scheduling--------
Total no. of prime numbers between 2 to 8 = 4
Total no. of prime numbers between 2 to 16 = 6
Total no. of prime numbers between 2 to 64 = 18
Total no. of prime numbers between 2 to 128 = 31
Total no. of prime numbers between 2 to 1 = 0
Total no. of prime numbers between 2 to 2 = 1
Total no. of prime numbers between 2 to 512 = 97
Total no. of prime numbers between 2 to 4 = 2
Total no. of prime numbers between 2 to 256 = 54
Total no. of prime numbers between 2 to 32 = 11
Total no. of prime numbers between 2 to 1024 = 172
Total no. of prime numbers between 2 to 2048 = 309
Total no. of prime numbers between 2 to 4096 = 564
Total no. of prime numbers between 2 to 8192 = 1028
Total no. of prime numbers between 2 to 16384 = 1900
Total no. of prime numbers between 2 to 32768 = 3512
Total no. of prime numbers between 2 to 65536 = 6542
Total no. of prime numbers between 2 to 131072 = 12251
Execution Time = 2.377080ms

--------Guided Thread Scheduling--------
Total no. of prime numbers between 2 to 16 = 6
Total no. of prime numbers between 2 to 32 = 11
Total no. of prime numbers between 2 to 64 = 18
Total no. of prime numbers between 2 to 1024 = 172
Total no. of prime numbers between 2 to 2048 = 309
Total no. of prime numbers between 2 to 1 = 0
Total no. of prime numbers between 2 to 2 = 1
Total no. of prime numbers between 2 to 4 = 2
Total no. of prime numbers between 2 to 8 = 4
Total no. of prime numbers between 2 to 128 = 31
Total no. of prime numbers between 2 to 256 = 54
Total no. of prime numbers between 2 to 512 = 97
Total no. of prime numbers between 2 to 4096 = 564
Total no. of prime numbers between 2 to 8192 = 1028
Total no. of prime numbers between 2 to 16384 = 1900
Total no. of prime numbers between 2 to 32768 = 3512
Total no. of prime numbers between 2 to 65536 = 6542
Total no. of prime numbers between 2 to 131072 = 12251
Execution Time = 2.379559ms
[priyanshuvyas@fedora PdcLab]$
```

Graph:

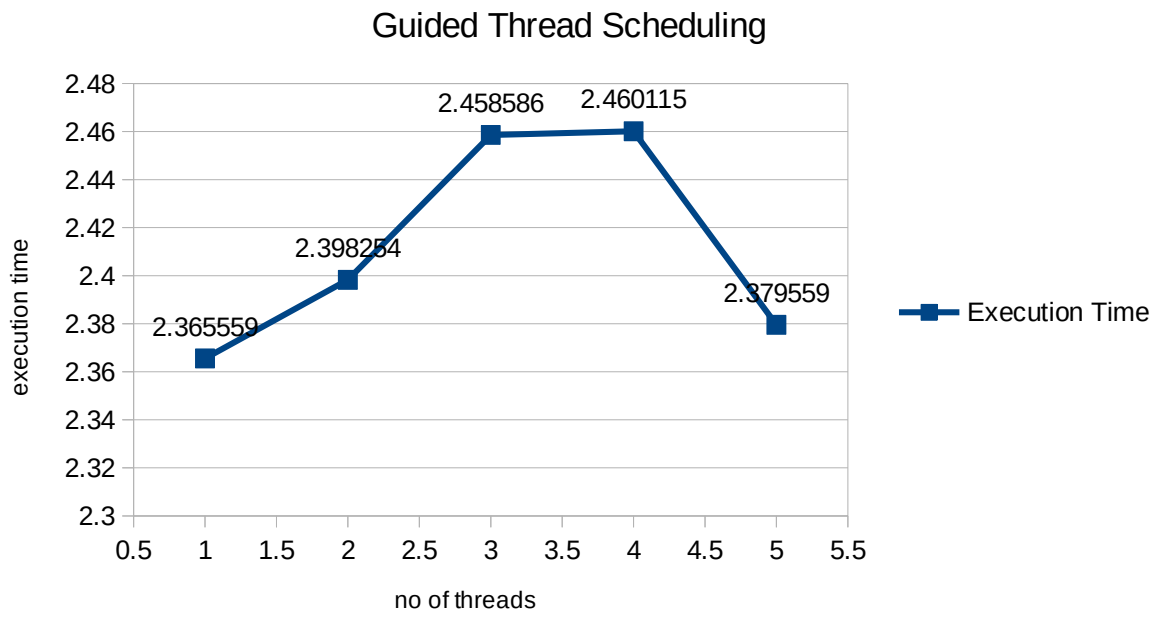
For Static Thread Scheduling:



For Dynamic Thread Scheduling:



For Guided Thread Scheduling:



Result:

Hence all programs are successfully implemented and executed.