

MPI

1. Write a parallel program using OpenMP that counts the number of prime numbers between 1 and N
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A sequential version could be:

```
int num_primes = 0;
for (int i = 1 ; i<N ;i++){
bool is_prime = TRUE ;
for (int j=2 ; j<i ; j++){
if (i%j == 0){ is_prime = FALSE ; break ;}
} if (is_prime) num_primes++ ;
}
```

2. Write a matrix multiplication program
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$A \times B = C$. Matrix A is copied to every processor.

Matrix B is divided into blocks and distributed among processors.

The data is distributed among the workers who perform the actual multiplication in smaller blocks and send back their results to the master.