Manisa Celal Bayar University – Department of Computer Engineering
CSE 3237 Parallel Programming – Quiz

Full Name		Student Id		Signature	

Question

Write the code which uses multiprocessing to estimate the value of Euler's number (e) using the Monte Carlo technique. The Monte Carlo technique involves generating many random numbers and using them to approximate a mathematical constant or perform other types of numerical calculations. The estimation can be found as the average of the number of random numbers that are needed before the sum of the random numbers exceeds one. You can find an example output below.

```
Random Numbers of 50 sets                          |    n
===================================================|======
0.67 0.60                                          |    2
0.53 0.55                                          |    2
0.19 0.59 0.60                                     |    3
                          ...
                          ...
                          ...
0.93 0.34                                          |    2
0.53 0.04 0.34 0.80                                |    4
0.79 0.17 0.65                                     |    3
===================================================| + ===
Number of random numbers that are needed before    |
the sum of the random numbers exceeds one          |  136
=========================================================
Estimated Value of Euler's Number = 136/50 = 2.720000
```

You have 30 minutes, gl hf.
Assoc. Prof. Dr. Bora Canbula

Answer