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Steps to run code:

Unzip file

Traverse to project directory containing mix.exs

Run command 'mix run proj1.exs 100000 200000'

Number of actors is derived from logic.

If input range > 10000, No of actors = range/10000

else No of actors = 1

Based on observation that if input range is less than 10000, only single actor is used. In case input range is higher, the number of actors increases, each actor is assigned a sub-range of 10000. For very high input range, multiple actors are created facilitating better concurrency and better performance.

Result printed for above range:

180297 201 897  
150300 300 501  
124483 281 443  
132430 323 410  
117067 167 701  
125460 246 510 204 615  
110758 158 701  
135837 351 387  
156240 240 651  
129775 179 725  
118440 141 840  
152608 251 608  
136525 215 635  
135828 231 588  
156289 269 581  
146952 156 942  
193945 395 491  
197725 275 719  
125433 231 543  
125500 251 500  
192150 210 915  
162976 176 926  
105264 204 516  
173250 231 750  
175329 231 759  
186624 216 864  
123354 231 534  
146137 317 461  
126846 261 486  
156915 165 951  
116725 161 725

108135 135 801  
125248 152 824  
182650 281 650  
174370 371 470  
134725 317 425  
105750 150 705  
182250 225 810  
190260 210 906  
133245 315 423  
172822 221 782  
136948 146 938  
193257 327 591  
145314 351 414  
152685 261 585  
126027 201 627  
131242 311 422  
115672 152 761  
180225 225 801  
153436 356 431  
120600 201 600  
129640 140 926  
104260 260 401  
105210 210 501  
140350 350 401  
163944 396 414  
102510 201 510

Code performance for range 100000 to 200000

real 0m1.676s  
user 0m4.448s  
sys 0m0.092s

ratio = 2.68

Code was tested for largest input range -> 1,00,000 to 2,00,00,000

ratio = 3.93

Kindly refer to CPU utilization screenshot. 100% utilization for all 4 cores