Distributed Operating Systems - Project 1

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1) Run the following command to execute the code **mix run proj1.exs 100000 200000**

2) There is a boss Genserver which prints the vampire numbers. Between 100000 and 200000 created 1000 Genservers Since our chunk size is 100.

3) Each Genserver receives a range of 100 values to be iterated for vampire numbers. Size of work unit of each worker actor is 100. This is based on the result obtained from below:

100:
real 0m50.407s
user 44m20.024s
sys 0m20.559s
500:
real 1m3.079s
user 56m11.231s
sys 0m14.263s
1000:
real 1m13.289s
user 65m1.647s
sys 0m17.156s

4) output of mix run proj1.exs 100000 200000 for optimal workers load

116725 161 725
118440 141 840
105210 210 501
105264 204 516
115672 152 761
110758 158 701
105750 150 705
108135 135 801
104260 260 401
102510 201 510
117067 167 701

120600 201 600
123354 231 534
125248 152 824
124483 281 443
132430 323 410
129640 140 926
126027 201 627
125500 251 500
125433 231 543
125460 204 615 246 510
126846 261 486
131242 311 422
129775 179 725
140350 350 401
136948 146 938
146952 156 942
133245 315 423
134725 317 425
135828 231 588
135837 351 387
136525 215 635
153436 356 431
145314 351 414
162976 176 926
152608 251 608
152685 261 585
146137 317 461
150300 300 501
156915 165 951
156240 240 651
156289 269 581
172822 221 782
163944 396 414
173250 231 750
193257 327 591
175329 231 759
182650 281 650
190260 210 906
197725 275 719

174370 371 470
182250 225 810
180225 225 801
180297 201 897
193945 395 491
186624 216 864
192150 210 915

5) As can be seen from above output the CPU time : 0m50.407s REALTIME: 44m20.024s RATIO: approx 53.2
Hence the system is using around 53 cores to run the code in parallel. System configs as follows: RAM:252GB CORES: 56

6) largest number we managed to find before having to kill the process 81559840 8510 9584