1. **Please mention group members names and UFID. Also write the steps to run your code.**
   Name: Smrati Pandey
   UFID: ********

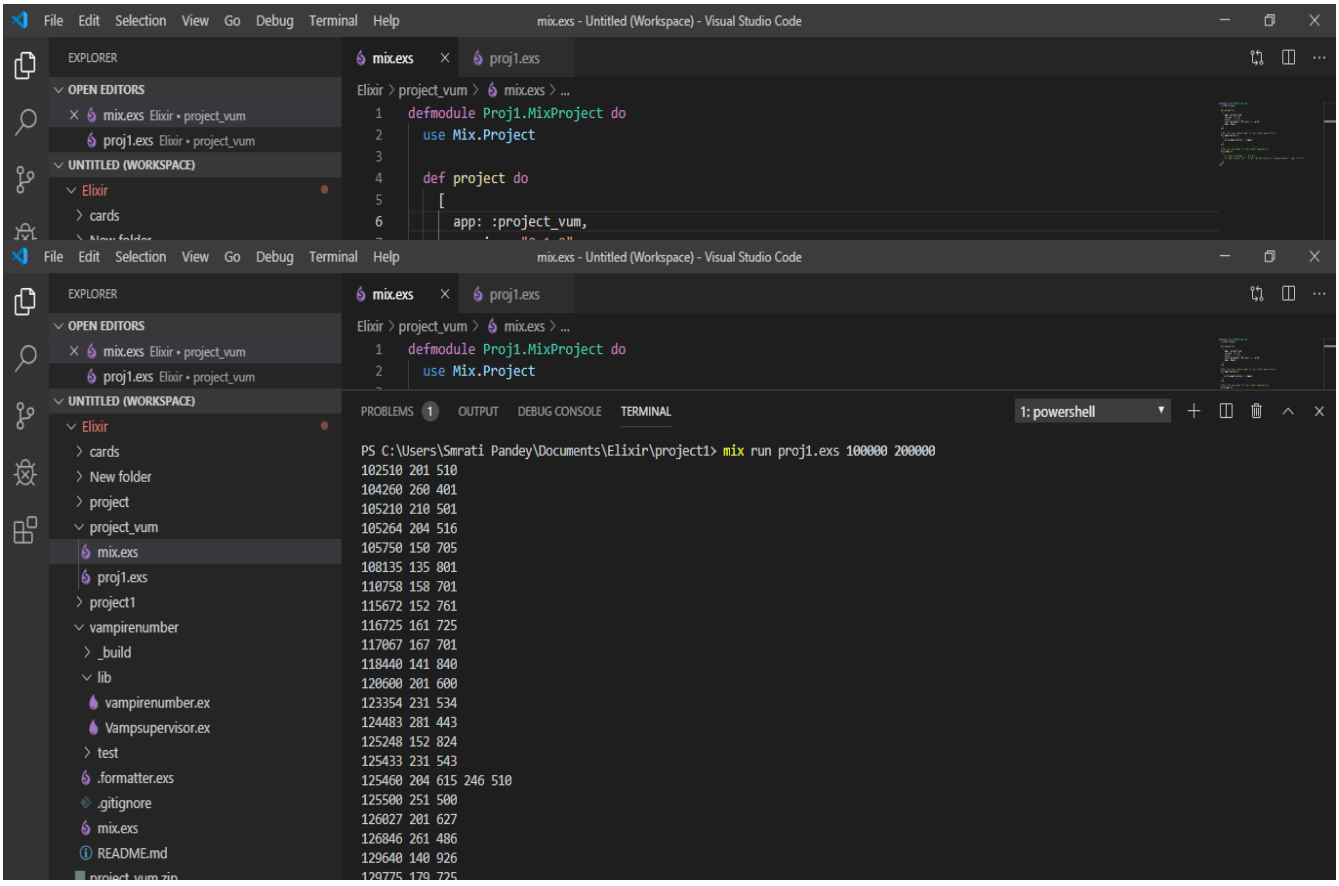
   Nidhi Sharma
   UFID: ********
   Download the file
   Run the command: **mix run proj1.exs 100000 200000**

2. **The number of worker actors that you created.**
   The number of workers will vary according to the range given.
   For example, if the range is 1000 to 2000
   Total number to be run by the system = 2000-1000 = 1000, this will be divided in chunks of 10 and total number of workers created = (1000/10) = 100
   Total number of workers created for this scenario is 100.

3. **Size of the work unit of each worker actor that you determined results in best performance for your implementation and an explanation on how you determined it. Size of the work unit refers to the number of sub-problems that a worker gets in a single request from the boss.**

   The size of the worker was determined on the bases of best distribution in the cores.
   The best performance obtained (user+sys)/real. If the distribution is high then accordingly, we select the unit of worker module.

4. **The result of running your program for: mix run proj1.exs 100000 200000**



Result:102510 201 510

104260 260 401
105210 210 501

105264 204 516
105750 150 705
108135 135 801
110758 158 701
115672 152 761
116725 161 725
117067 167 701
118440 141 840
120600 201 600
123354 231 534
124483 281 443
125248 152 824
125433 231 543
125460 204 615 246 510
125500 251 500
126027 201 627
126846 261 486
129640 140 926
129775 179 725
131242 311 422
132430 323 410
133245 315 423
134725 317 425
135828 231 588
135837 351 387
136525 215 635
136948 146 938
140350 350 401
145314 351 414
146137 317 461
146952 156 942
150300 300 501
152608 251 608
152685 261 585
153436 356 431
156240 240 651
156289 269 581
156915 165 951
162976 176 926
163944 396 414
172822 221 782
173250 231 750
174370 371 470
175329 231 759
180225 225 801
180297 201 897
182250 225 810
182650 281 650
186624 216 864
190260 210 906
192150 210 915
193257 327 591
193945 395 491

197725 275 719

5. **Report the running time for the above problem (4). The ratio of CPU time to REAL TIME tells you how many cores were effectively used in the computation. If you are close to 1 you have almost no parallelism (points will be subtracted).**

```
132430 323 410
133245 315 423
134725 317 425
135828 231 588
135837 351 387
136525 215 635
136948 146 938
140350 350 401
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190260 210 906
192150 210 915
193257 327 591
193945 395 491
197725 275 719

real    0m7.592s
user    0m26.683s
sys     0m0.979s
project_vum $
```

Running time = (26.683+.979)/7.592 = 3.6436 approx.

6. **The largest problem you managed to solve (For example You can try finding out bigger vampire numbers than 200000).**

   The highest range achieved by the program is around 500000