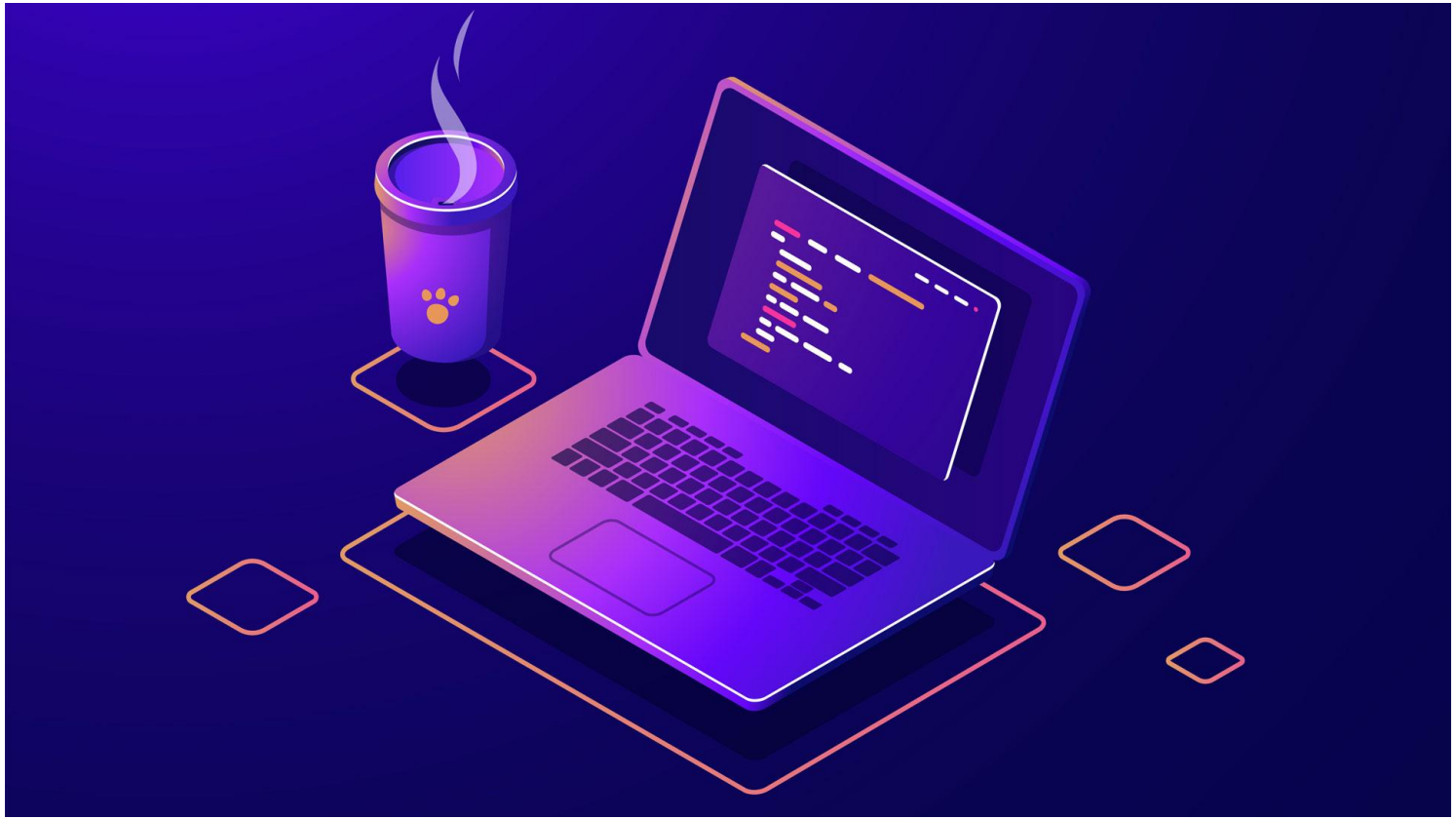
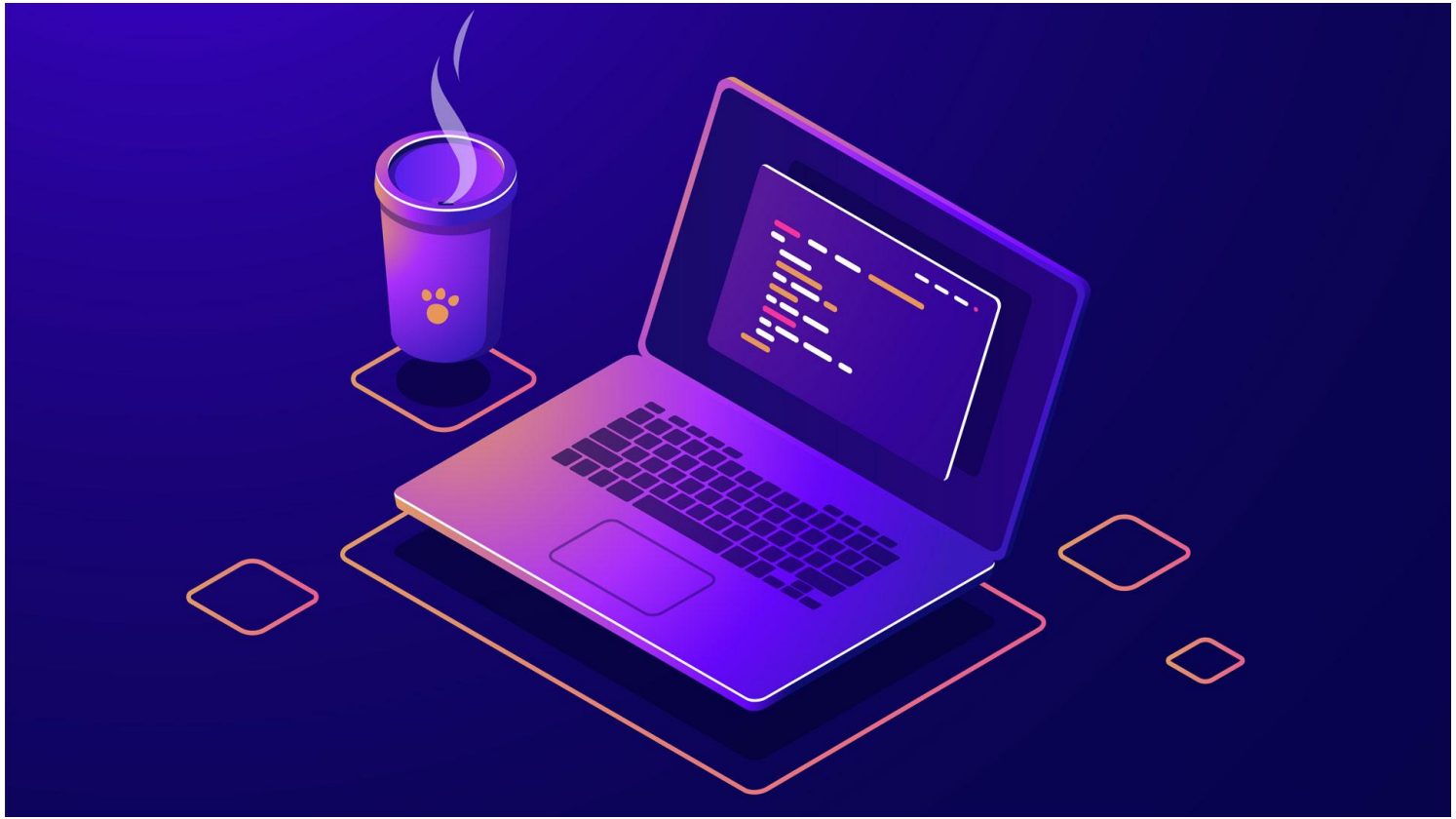
# Parallelism Fundamentals Problems



# Problem 1



# Problem 1

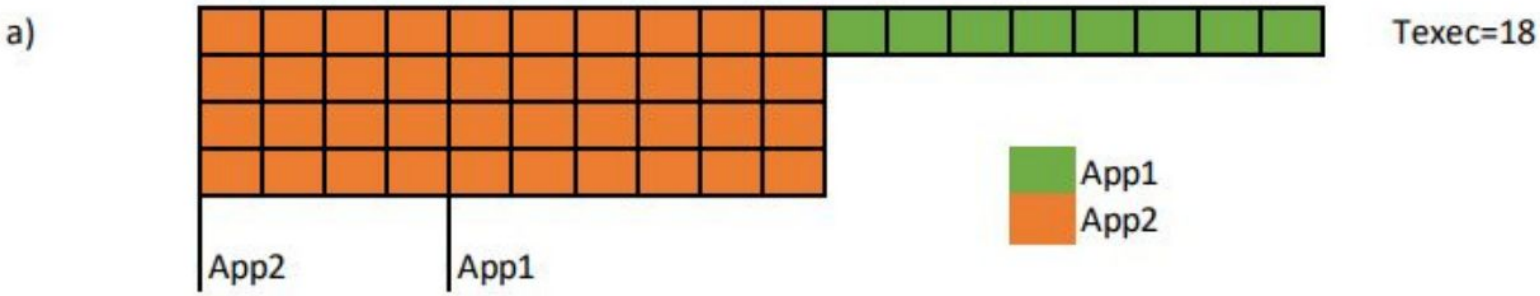
1. Assume we want to execute two different applications in our parallel machine with 4 processors: application *App1* is sequential; *App2* is parallelised defining 4 tasks, each task executing one fourth of the total application. The sequential time for the applications is 8 and 40 time units, respectively. Assuming: that *App1* starts its execution at time 4 and *App2* starts at time 0, draw a time line showing how they will be executed if the operating system:

   (a) Does not allow multiprogramming, i.e. only one application can be executed at the same time in the system.

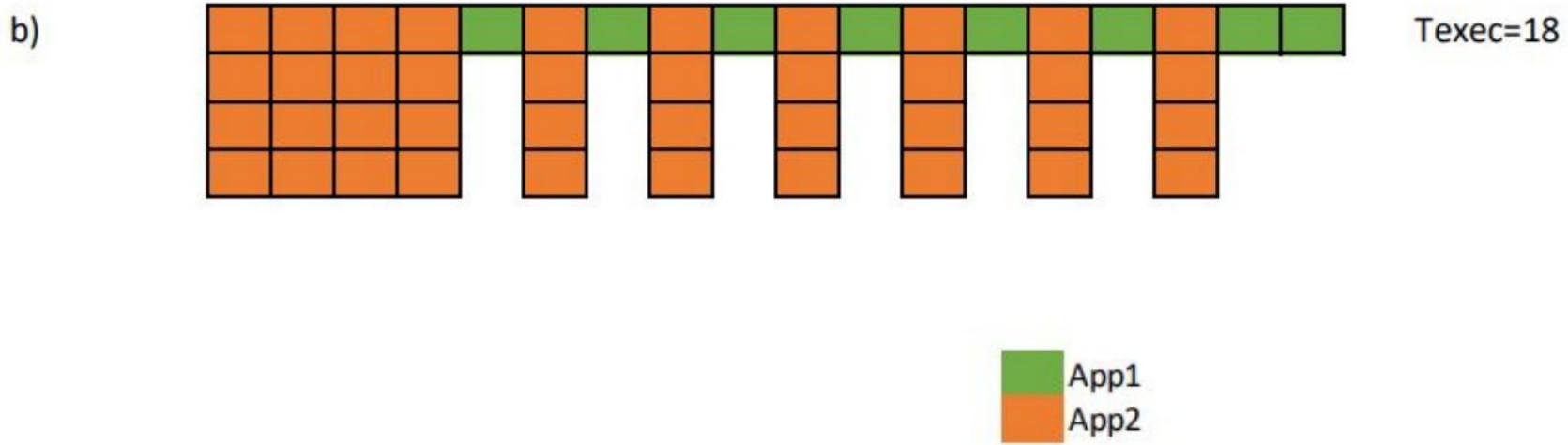
   (b) Allows multiprogramming so that the system tries to have both applications running concurrently, each application making use of the number of processors is able to use.

   (c) The same as in the second case, but now *App2* is parallelised defining 3 tasks, each task executing one third of the total application.

# Point a)

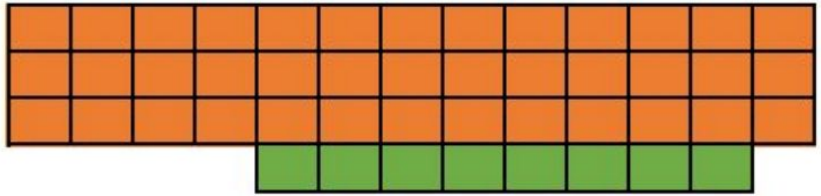


# Point b)



# Point c)

c)



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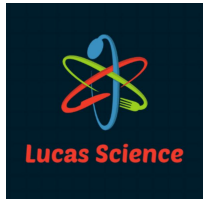
# Instructor Social Media

**Youtube: Lucas Science**

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