

# Operating Systems

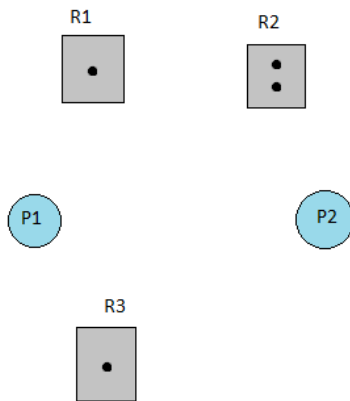
## Project 18

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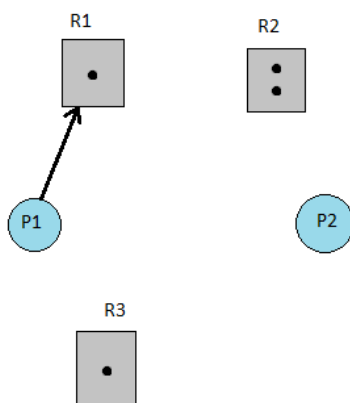
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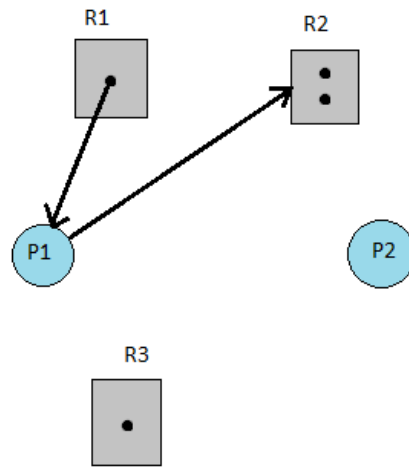
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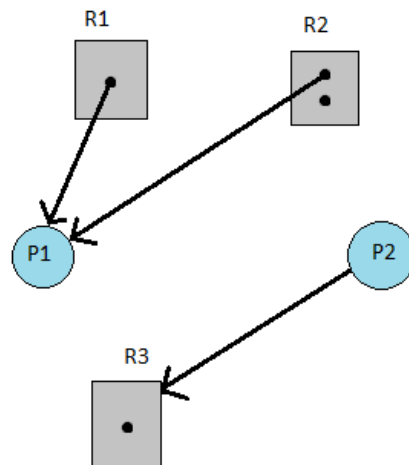
Mynd 1: At the beginning



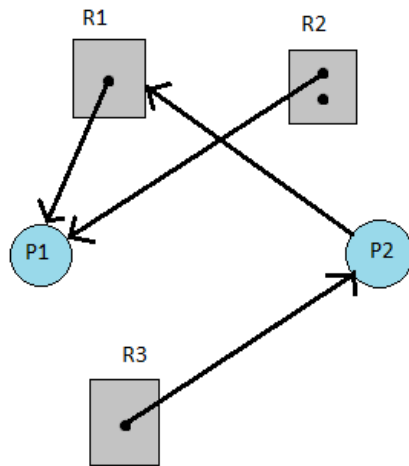
Mynd 2:  $P_1$  requests  $R_1$



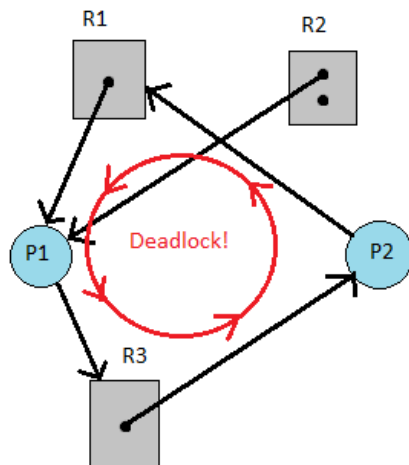
Mynd 3:  $P_1$  is assigned  $R_1$  and requests  $R_2$



Mynd 4:  $P_1$  is assigned an instance of  $R_2$  and  $P_2$  requests  $R_3$



Mynd 5:  $P_2$  is assigned  $R_3$  and requests  $R_1$



Mynd 6:  $P_2$  is not assigned  $R_1$  as  $P_1$  has it.  $P_1$  requests  $R_3$  but will not get it because  $P_2$  has it. Neither process can continue as they are both waiting for a resource the other one has but will not release until it has finished. We can also see the cycle clearly, it is a deadlock.

