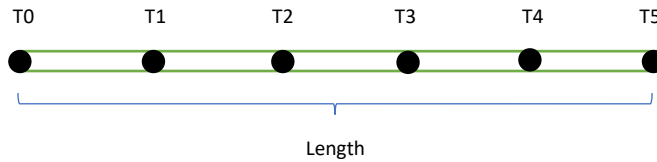**Reservoir Simulation**
Homework #2
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Problem: Solve numerically the following PDE with the given boundary conditions and initial value for 1 second using explicit and implicit scheme.

$$\frac{\partial^2 T}{\partial x^2} = \frac{1}{\alpha}\frac{\partial T}{\partial t}$$

$$\begin{cases} I.C : T_i^0 = 0 \\ B.C\,1 : T_0 = 100 \\ B.C\,2 : T_5 = 60 \end{cases}$$

$\alpha = 0.08$

$length = 1m$

$Time = 1s$

No. of Time steps=5

No. of Nodes=6

(Optional) Write a MATLAB code to solve the problem for the any number of time steps and nodes using explicit and implicit schema and then check the stability condition for the explicit scheme. (Max point=0.5)