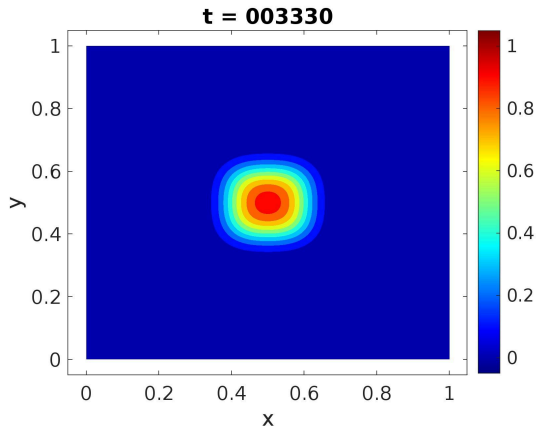
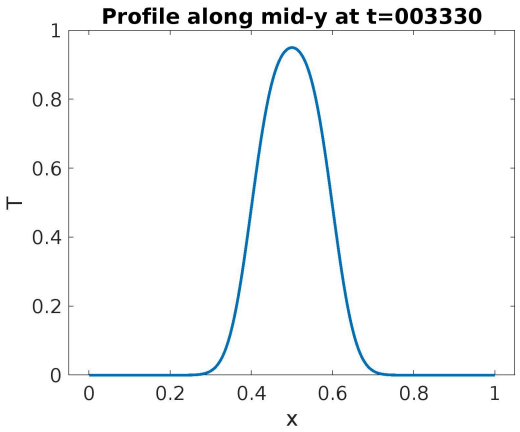
HW5 Report

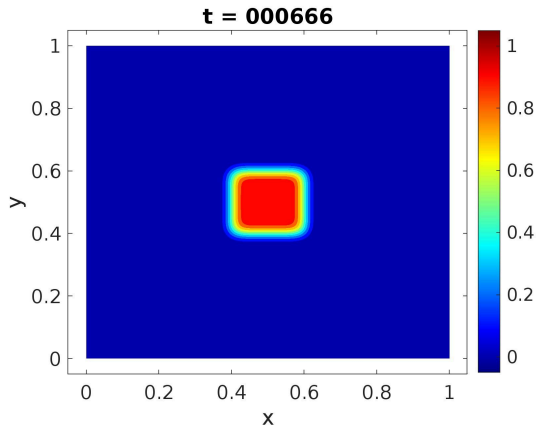
Question 1)

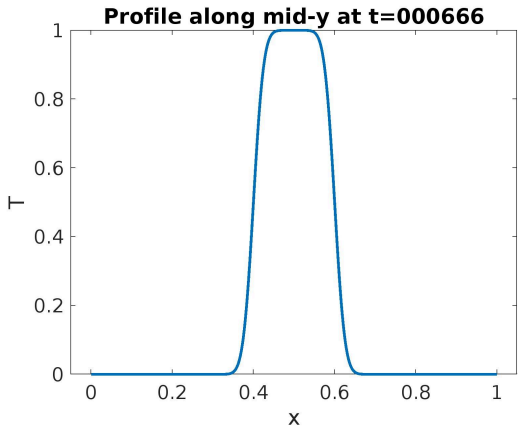
a)

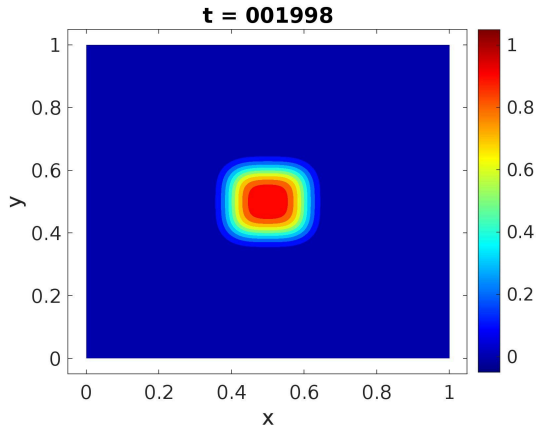
Serial Code:

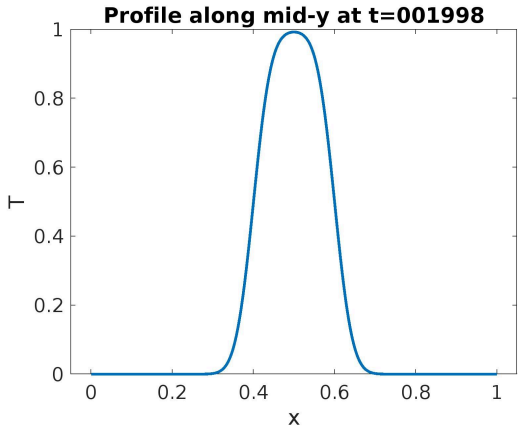




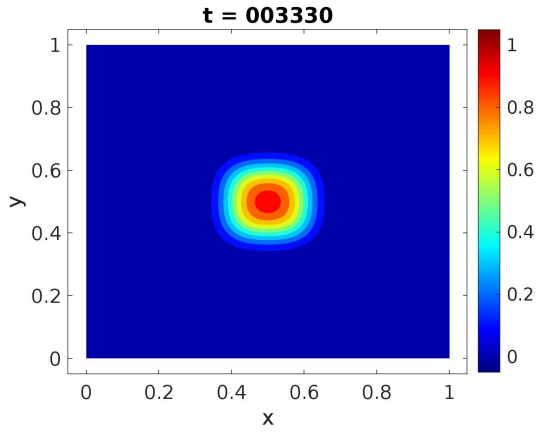


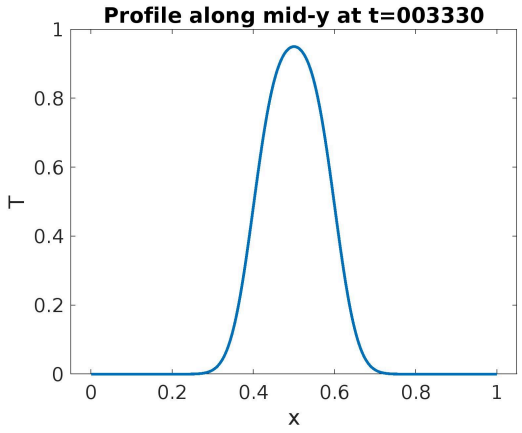


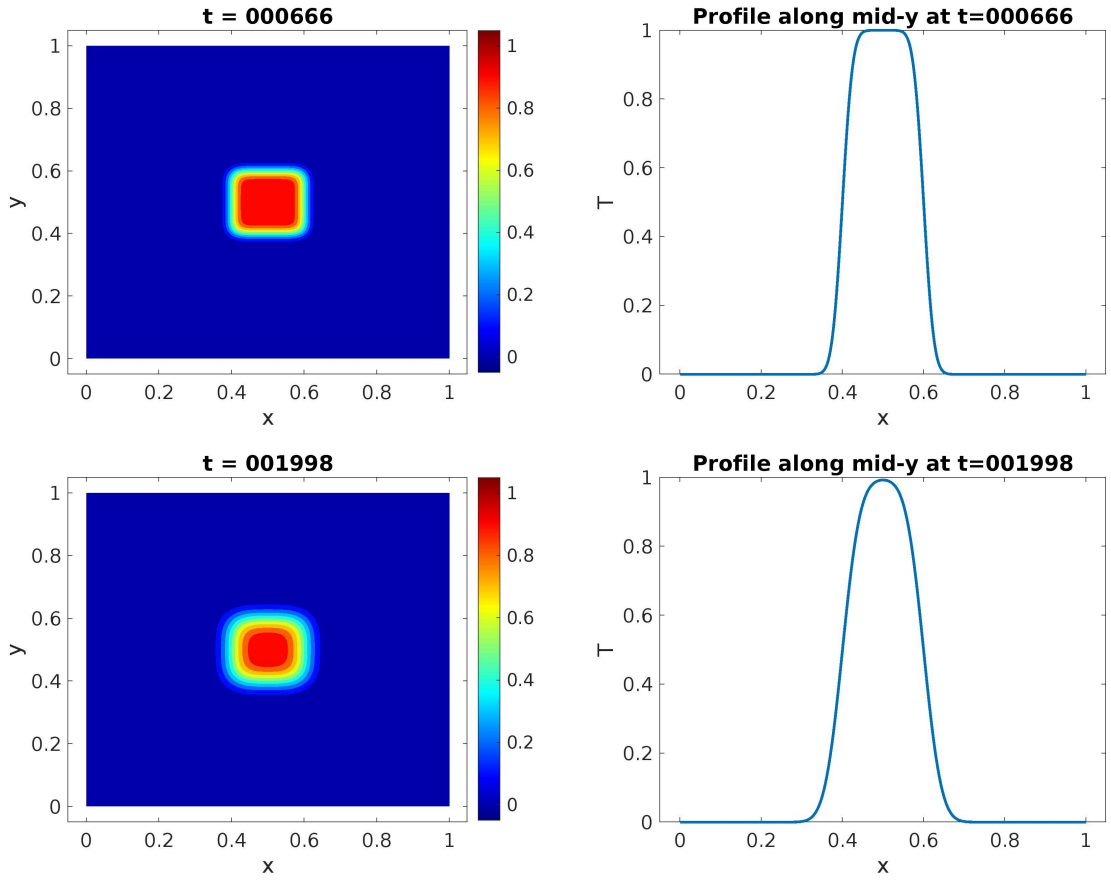




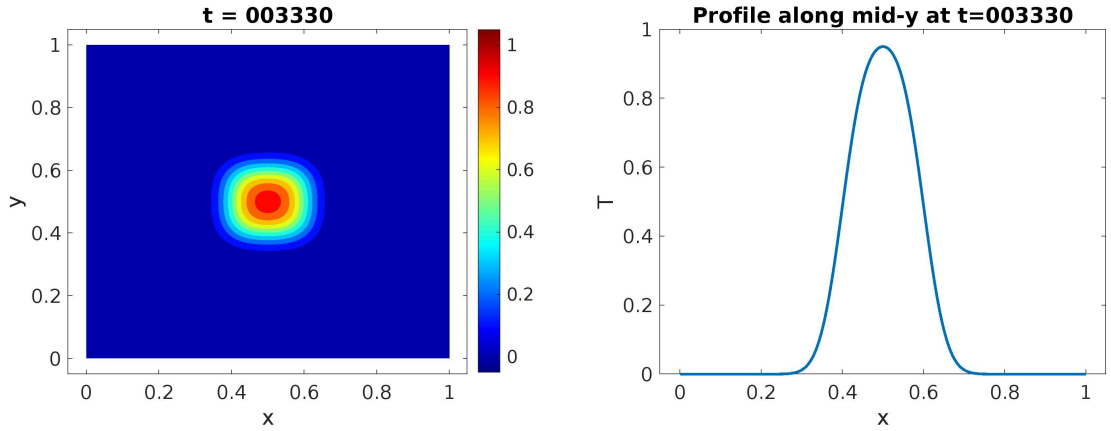
Parallel Code Contours:
2by2:

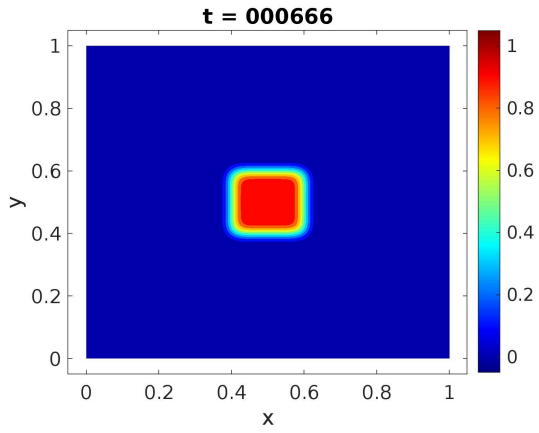


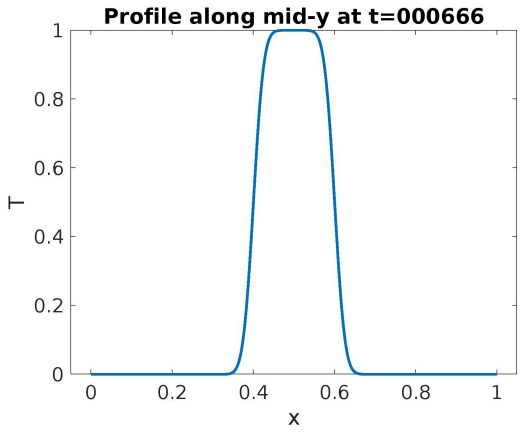


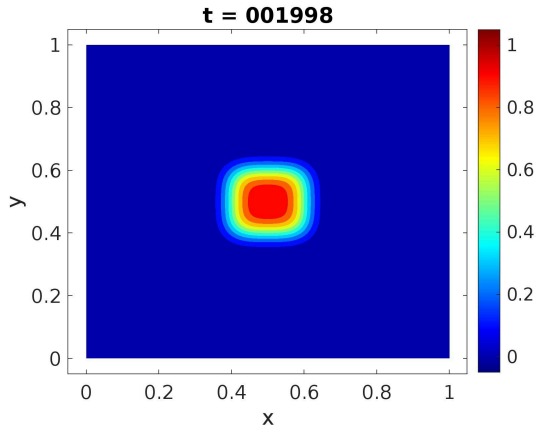

t = 000666
Profile along mid-y at t=000666
t = 001998
Profile along mid-y at t=001998
x
y
T

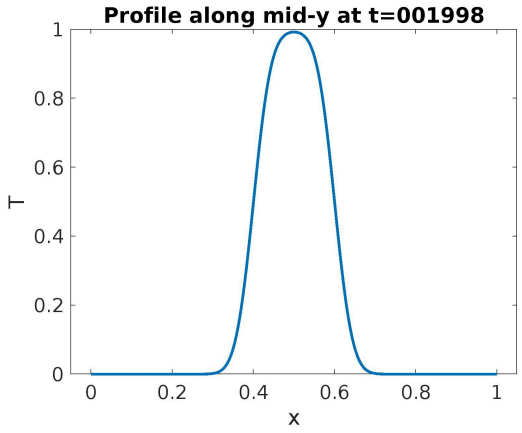
2by4:


t = 003330
Profile along mid-y at t=003330
x
y
T

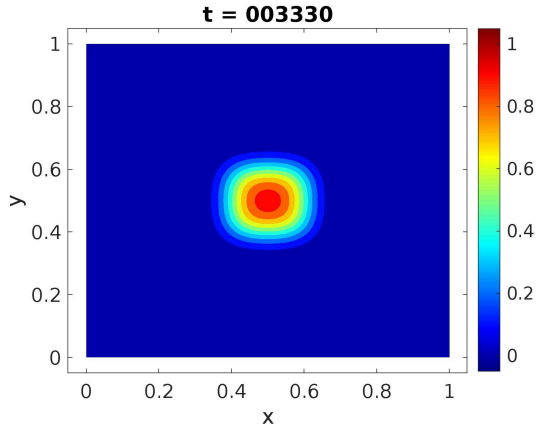

t = 000666
y
x

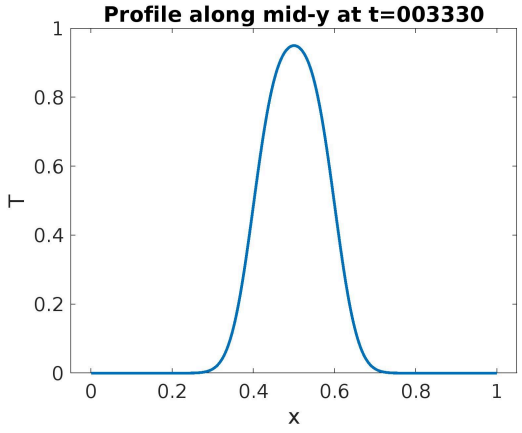

Profile along mid-y at t=000666
T
x

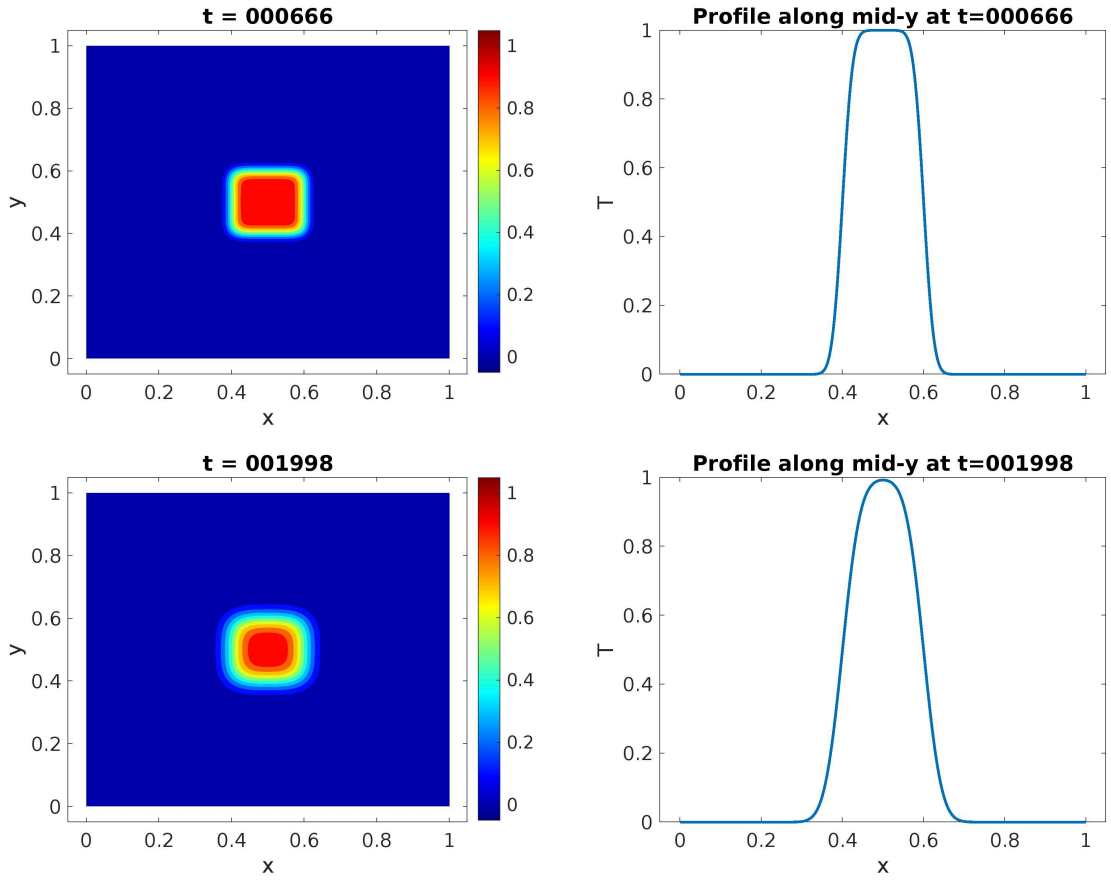

t = 001998
y
x


Profile along mid-y at t=001998
T
x

4by4:

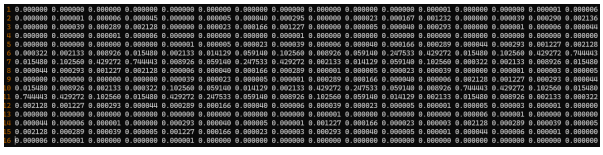
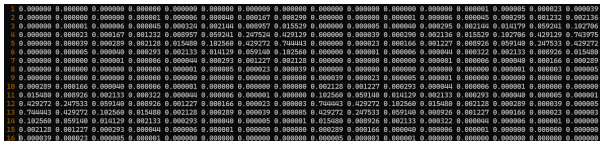

t = 003330
y
x

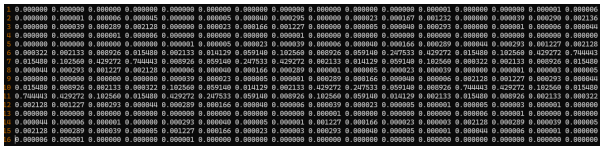
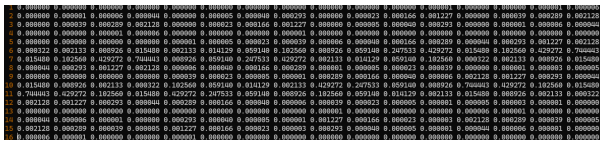

Profile along mid-y at t=003330
T
x



b)

Observing for a smaller matrix (16 by 16):

Serial	
2 by 2	

2 by 4	
4 by 4	

The difference is almost close to machine precision.

c)

Processors	Time Taken
Serial	0.018898
2 by 2	0.032050
2 by 4	0.040644
4 by 4	0.040726

Serial seems to be working faster. The communication overhead is more than the computational benefits of parallel processing.