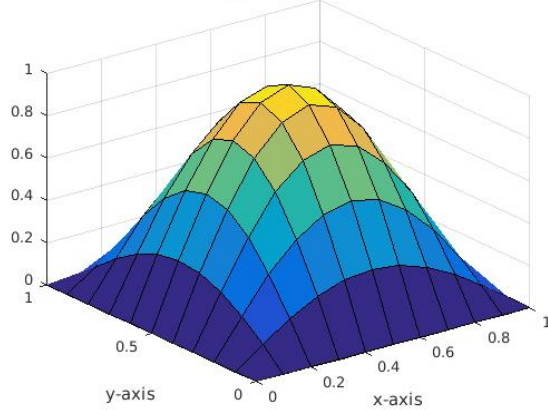


Assignment 10
Abhishek Agrahari
Roll No = 190123066

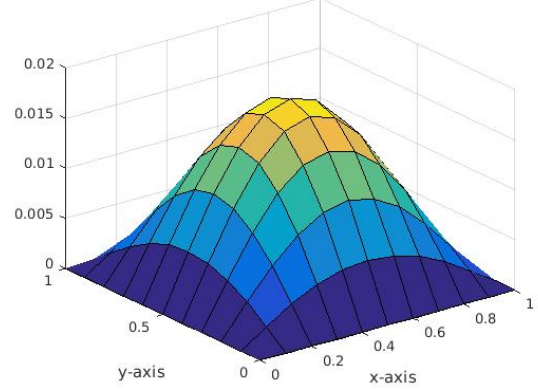
Output

Question 1

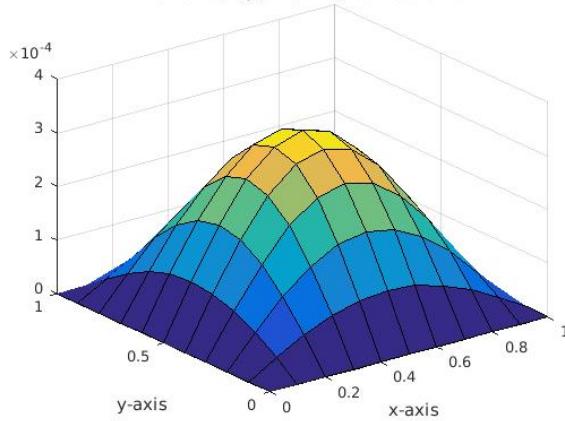
Plot of $U(x,y,0.0)$: Explicit Scheme



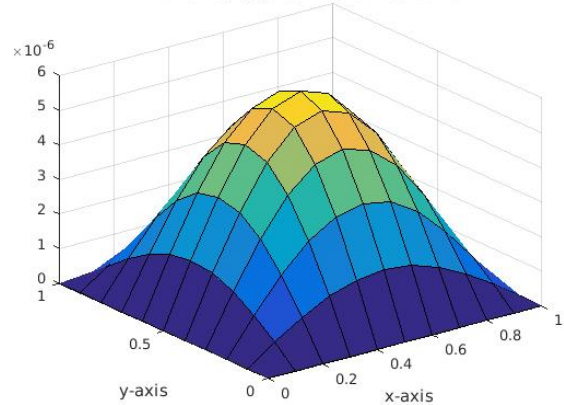
Plot of $U(x,y,0.2)$: Explicit Scheme



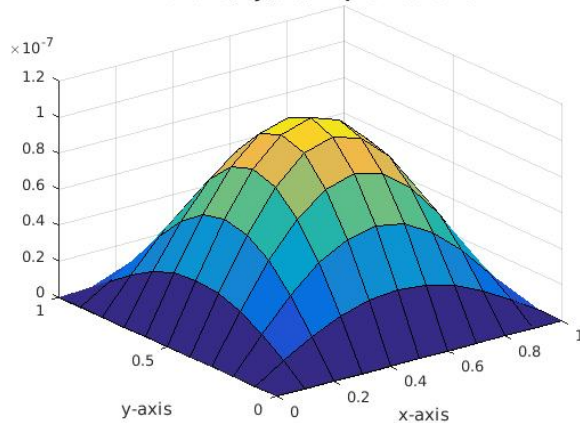
Plot of $U(x,y,0.4)$: Explicit Scheme



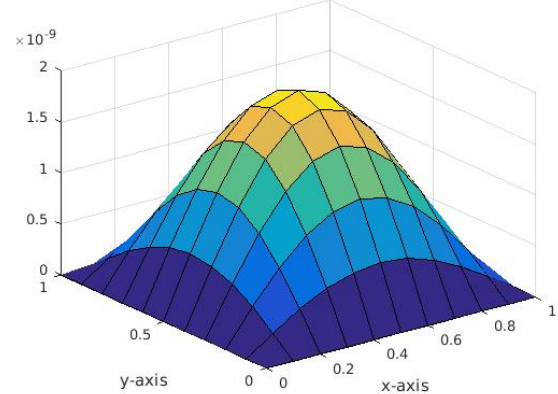
Plot of $U(x,y,0.6)$: Explicit Scheme



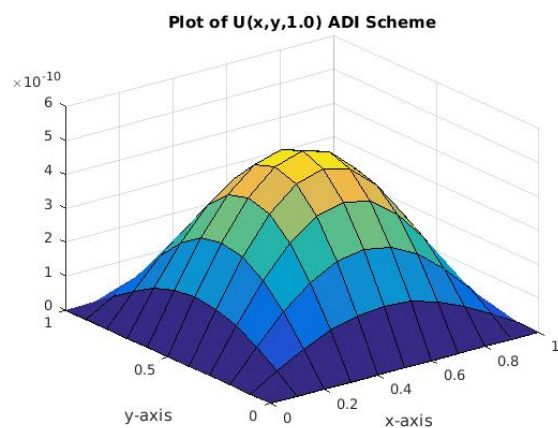
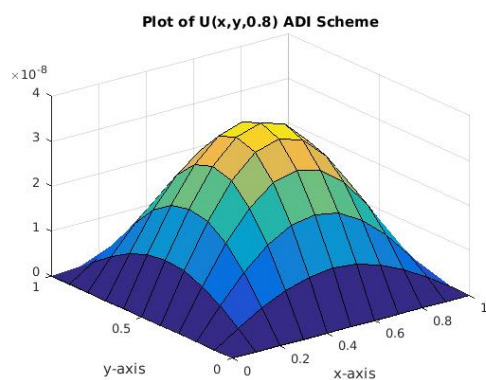
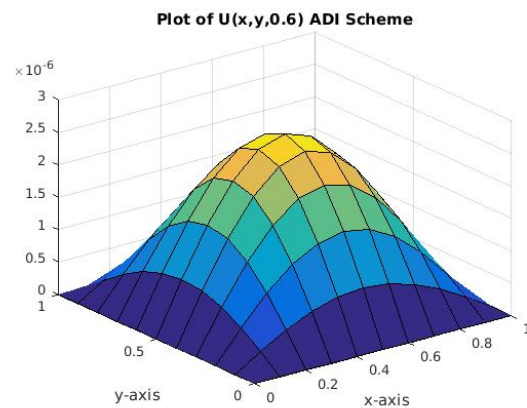
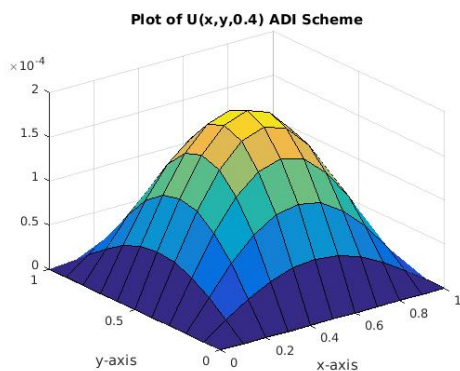
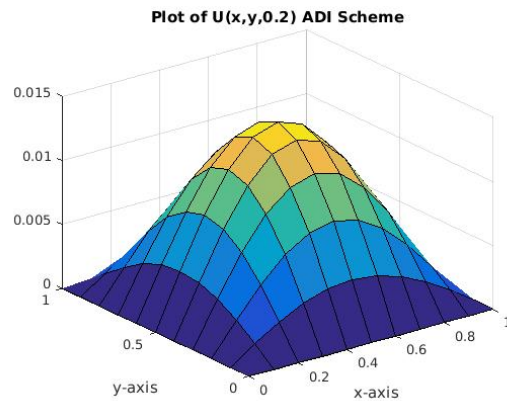
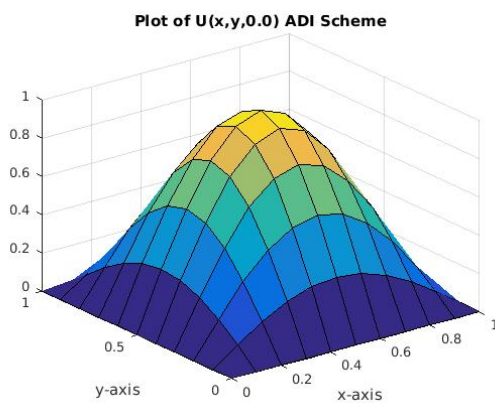
Plot of $U(x,y,0.8)$: Explicit Scheme



Plot of $U(x,y,1.0)$: Explicit Scheme



Question 2



Remarks

Question1 : I have taken $h = 0.1$ and $r = 0.25$ in this question. We have used explicit scheme in this question. It is conditionally stable for r in 0 to $1/2$. Because we have used $r = 0.25$ solution is stable.

Question2: We have used ADI scheme in this question. Here $k = h = 0.1$ is taken.