1. **Potential Field Based Control.** Consider a point like robot in the workspace with the area $[0,100] \times [0,100]$. Represent the obstacles in the environment as circles with centers at $[40,30]$ and $[70,40]$ each with radius 5. Assume that the initial position of the robot is $x_0 = [50,50]$. Write down a function $\text{GoToObst}(x_g, y_g)$, which takes as input arbitrary goal position in the workspace and returns the trajectory which the robot followed to get to the goal using potential field based method. The parameters of the potential functions can be set as variables inside of $\text{GoToObst}$. Post the Matlab code and two plots demonstrating the capability of the robot to avoid obstacles and reach the goal. The control commands generated by potential field based controller are $\dot{x}, \dot{y}$. 