

## Potential Functions

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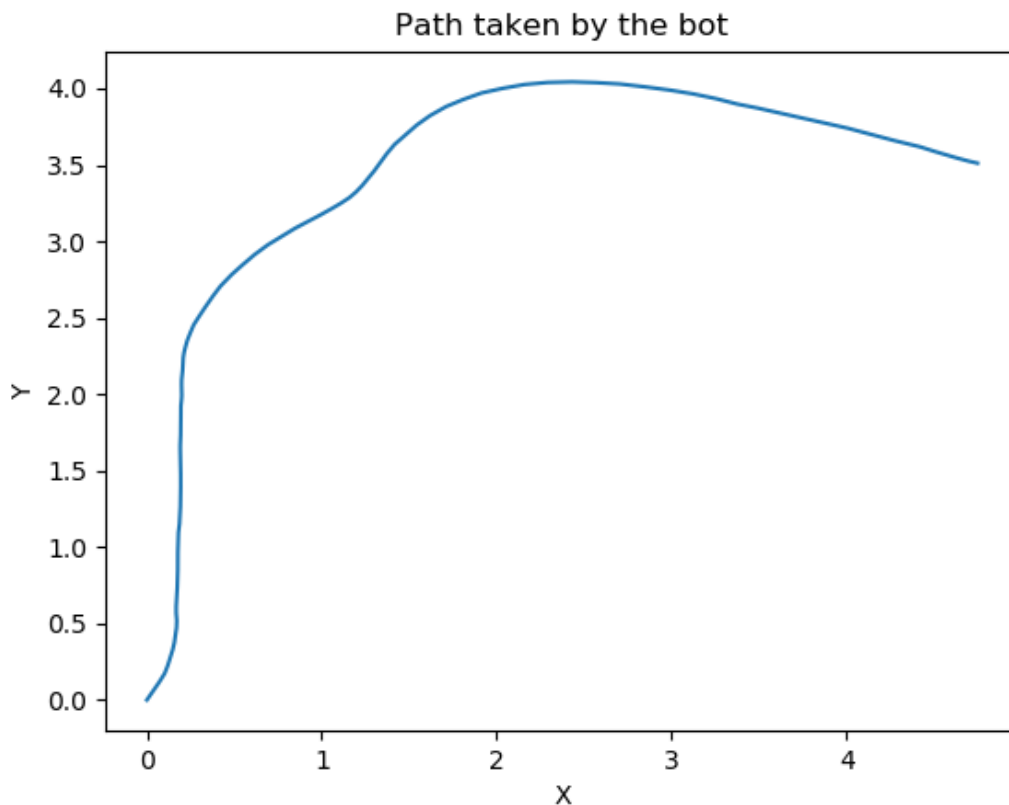
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### Reaching the Goal:

In potential-based methods, the major problem is reaching a minima point before reaching the actual goal position. This happens when the attractive and repulsive force due to the goal and obstacle creates a local minima or zero gradient location. In all such cases, the bot stops before reaching the goal pose.

A similar issue was seen in the given task when the bot stopped about 0.3m away from the goal pose. This is because of the attractive potential of the goal balanced with that of the repulsive force due to the obstacle near the goal (obstacle2).

### Path taken by the bot:



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Time vs Distance from goal:

