

Go to goal robot

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The robot starts at 0,0 and wants to go to 5,5

After 10000 iterations with proportional gain the robot wanders around every ware and reaches upto 4.1,4.1

```
from scipy import *
```

```
from pylab import *
```

```
from scipy.integrate import odeint
```

```
import math
```

```
init=[0,0]
```

```
final=[5,5]
```

```
vel=-6
```

```
phid=math.atan((final[1]-init[1])/(final[0]-init[0]))
```

```
t=0
```

```
start=[vel,vel]
```

```
phi=math.atan((final[1]-start[1])/(final[0]-start[0]))
```

```
omg=-3
```

```
phi=phi*omg
```

```
print(phi)
```

```
k=1.5 #pid term
```

```
x=[]
```

```
y=[]
```

```
while(phi!=phid and t<100000):
```

```
curr=[vel*math.cos(phi),vel*math.sin(phi)]
```

```
phi=omg*(math.atan((final[1]-curr[1])/(final[0]-curr[0])))
```

```
err=phid-phi # error calculation for pid
```

```
omg=k*err    # PID with only p taken to account
```

```
phi=phi*omg
```

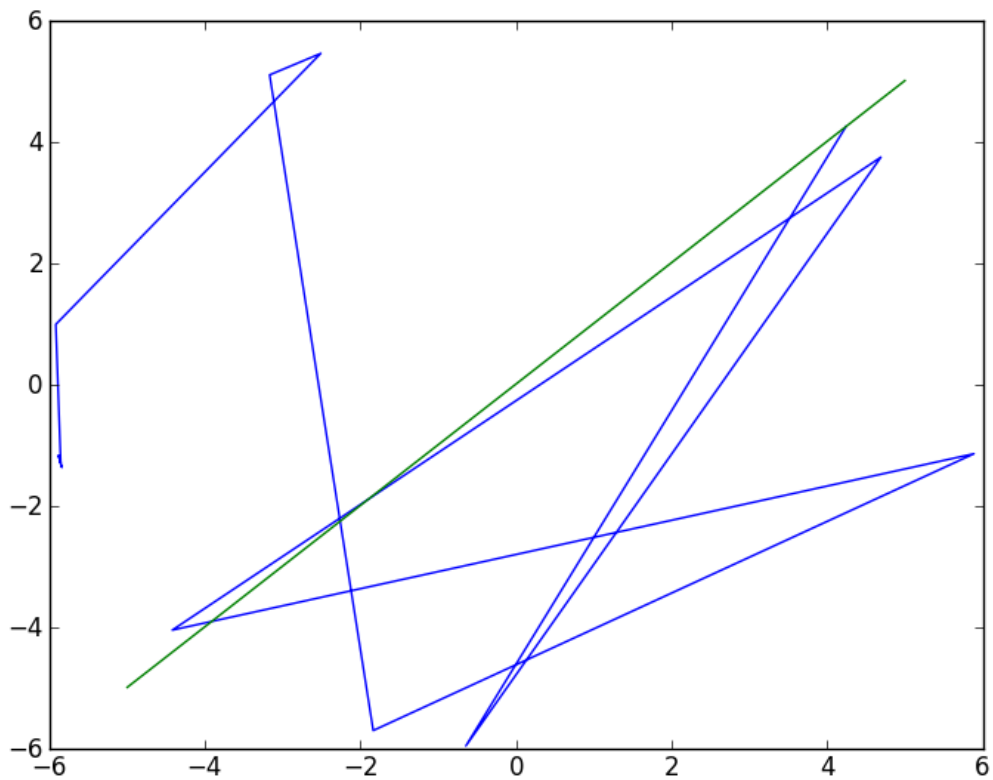
```
x.append(curr[0])
```

```
y.append(curr[1])
```

```
t=t+1
```

```
plot(x,y,[-5,5],[-5,5])
```

```
show()
```



The blue lines represent the path taken by the robot