**robot@ev3dev:~/lab2$ python3 PID.py**

**Kp:4.4**

**setpoint,Kp,Ki,Kd,dt: 90 4.4 0 0 0.1**

t,pos: 0 0

t,pos: 0.1 31

t,pos: 0.2 52

t,pos: 0.30000000000000004 65

t,pos: 0.4 73

t,pos: 0.5 78

t,pos: 0.6 80

t,pos: 0.7 81

t,pos: 0.7999999999999999 82

t,pos: 0.8999999999999999 83

t,pos: 0.9999999999999999 83

t,pos: 1.0999999999999999 85

t,pos: 1.2 86

t,pos: 1.3 86

t,pos: 1.4000000000000001 86

t,pos: 1.5000000000000002 86

t,pos: 1.6000000000000003 86

t,pos: 1.7000000000000004 86

t,pos: 1.8000000000000005 86

t,pos: 1.9000000000000006 86

t,pos: 2.0000000000000004 86

t,pos: 2.1000000000000005 86

t,pos: 2.2000000000000006 86

t,pos: 2.3000000000000007 86

t,pos: 2.400000000000001 86

t,pos: 2.500000000000001 86

t,pos: 2.600000000000001 86

t,pos: 2.700000000000001 86

t,pos: 2.800000000000001 86

t,pos: 2.9000000000000012 86

t,pos: 3.0000000000000013 86

t,pos: 3.1000000000000014 89

t,pos: 3.2000000000000015 88

t,pos: 3.3000000000000016 88

t,pos: 3.4000000000000017 88

t,pos: 3.5000000000000018 88

t,pos: 3.600000000000002 88

t,pos: 3.700000000000002 88

t,pos: 3.800000000000002 88

t,pos: 3.900000000000002 88

t,pos: 4.000000000000002 88

t,pos: 4.100000000000001 88

t,pos: 4.200000000000001 88

t,pos: 4.300000000000001 88

t,pos: 4.4 88

t,pos: 4.5 88

t,pos: 4.6 88

t,pos: 4.699999999999999 88

t,pos: 4.799999999999999 88

t,pos: 4.899999999999999 88

t,pos: 4.999999999999998 88

t,pos: 5.099999999999998 88

t,pos: 5.1999999999999975 88

t,pos: 5.299999999999997 88

t,pos: 5.399999999999997 88

t,pos: 5.4999999999999964 88

t,pos: 5.599999999999996 88

t,pos: 5.699999999999996 88

t,pos: 5.799999999999995 88

t,pos: 5.899999999999995 88

t,pos: 5.999999999999995 88

t,pos: 6.099999999999994 88

t,pos: 6.199999999999994 88

t,pos: 6.299999999999994 88

t,pos: 6.399999999999993 88

t,pos: 6.499999999999993 88

t,pos: 6.5999999999999925 88

t,pos: 6.699999999999992 88

t,pos: 6.799999999999992 88

t,pos: 6.8999999999999915 88

t,pos: 6.999999999999991 88

t,pos: 7.099999999999991 88

t,pos: 7.19999999999999 88

t,pos: 7.29999999999999 88

t,pos: 7.39999999999999 88

t,pos: 7.499999999999989 88

t,pos: 7.599999999999989 88

t,pos: 7.699999999999989 88

t,pos: 7.799999999999988 88

t,pos: 7.899999999999988 88

t,pos: 7.999999999999988 88

t,pos: 8.099999999999987 88

t,pos: 8.199999999999987 88

t,pos: 8.299999999999986 88

t,pos: 8.399999999999986 89

t,pos: 8.499999999999986 89

t,pos: 8.599999999999985 90

t,pos: 8.699999999999985 90

t,pos: 8.799999999999985 90

t,pos: 8.899999999999984 90

t,pos: 8.999999999999984 90

t,pos: 9.099999999999984 90

t,pos: 9.199999999999983 90

t,pos: 9.299999999999983 90

t,pos: 9.399999999999983 90

t,pos: 9.499999999999982 90

t,pos: 9.599999999999982 90

t,pos: 9.699999999999982 90

t,pos: 9.799999999999981 90

t,pos: 9.89999999999998 90

t,pos: 9.99999999999998 90

t,pos: 10.09999999999998 90

t,pos: 10.19999999999998 90

t,pos: 10.29999999999998 90

t,pos: 10.399999999999979 90

t,pos: 10.499999999999979 90

t,pos: 10.599999999999978 90

t,pos: 10.699999999999978 90

t,pos: 10.799999999999978 90

t,pos: 10.899999999999977 90

t,pos: 10.999999999999977 90

t,pos: 11.099999999999977 90

t,pos: 11.199999999999976 90

t,pos: 11.299999999999976 90

t,pos: 11.399999999999975 90

t,pos: 11.499999999999975 90

t,pos: 11.599999999999975 90

t,pos: 11.699999999999974 90

t,pos: 11.799999999999974 90

t,pos: 11.899999999999974 90

t,pos: 11.999999999999973 90

t,pos: 12.099999999999973 90

t,pos: 12.199999999999973 90

t,pos: 12.299999999999972 90

t,pos: 12.399999999999972 90

t,pos: 12.499999999999972 90

t,pos: 12.599999999999971 90

t,pos: 12.69999999999997 90

t,pos: 12.79999999999997 90

t,pos: 12.89999999999997 90

t,pos: 12.99999999999997 90

t,pos: 13.09999999999997 90

t,pos: 13.199999999999969 90

t,pos: 13.299999999999969 90

t,pos: 13.399999999999968 90

t,pos: 13.499999999999968 90

t,pos: 13.599999999999968 90

t,pos: 13.699999999999967 90

t,pos: 13.799999999999967 90

t,pos: 13.899999999999967 90

t,pos: 13.999999999999966 90

t,pos: 14.099999999999966 90

t,pos: 14.199999999999966 90

t,pos: 14.299999999999965 90

t,pos: 14.399999999999965 90

t,pos: 14.499999999999964 90

t,pos: 14.599999999999964 90

t,pos: 14.699999999999964 90

t,pos: 14.799999999999963 90

t,pos: 14.899999999999963 90

t,pos: 14.999999999999963 90

**robot@ev3dev:~/lab2$ python3 PID.py**

**Kp:4.3**

**setpoint,Kp,Ki,Kd,dt: 90 4.3 0 0 0.1**

t,pos: 0 0

t,pos: 0.1 28

t,pos: 0.2 52

t,pos: 0.30000000000000004 64

t,pos: 0.4 79

t,pos: 0.5 80

t,pos: 0.6 84

t,pos: 0.7 85

t,pos: 0.7999999999999999 86

t,pos: 0.8999999999999999 86

t,pos: 0.9999999999999999 87

t,pos: 1.0999999999999999 87

t,pos: 1.2 87

t,pos: 1.3 87

t,pos: 1.4000000000000001 87

t,pos: 1.5000000000000002 87

t,pos: 1.6000000000000003 87

t,pos: 1.7000000000000004 87

t,pos: 1.8000000000000005 87

t,pos: 1.9000000000000006 87

t,pos: 2.0000000000000004 87

t,pos: 2.1000000000000005 87

t,pos: 2.2000000000000006 87

t,pos: 2.3000000000000007 87

t,pos: 2.400000000000001 87

t,pos: 2.500000000000001 87

t,pos: 2.600000000000001 87

t,pos: 2.700000000000001 87

t,pos: 2.800000000000001 87

t,pos: 2.9000000000000012 87

t,pos: 3.0000000000000013 87

t,pos: 3.1000000000000014 87

t,pos: 3.2000000000000015 87

t,pos: 3.3000000000000016 87

t,pos: 3.4000000000000017 87

t,pos: 3.5000000000000018 87

t,pos: 3.600000000000002 87

t,pos: 3.700000000000002 87

t,pos: 3.800000000000002 87

t,pos: 3.900000000000002 87

t,pos: 4.000000000000002 87

t,pos: 4.100000000000001 87

t,pos: 4.200000000000001 87

t,pos: 4.300000000000001 87

t,pos: 4.4 87

t,pos: 4.5 87

t,pos: 4.6 87

t,pos: 4.699999999999999 87

t,pos: 4.799999999999999 87

t,pos: 4.899999999999999 87

t,pos: 4.999999999999998 87

t,pos: 5.099999999999998 87

t,pos: 5.1999999999999975 87

t,pos: 5.299999999999997 87

t,pos: 5.399999999999997 87

t,pos: 5.4999999999999964 87

t,pos: 5.599999999999996 87

t,pos: 5.699999999999996 87

t,pos: 5.799999999999995 87

t,pos: 5.899999999999995 87

t,pos: 5.999999999999995 87

t,pos: 6.099999999999994 87

t,pos: 6.199999999999994 87

t,pos: 6.299999999999994 87

t,pos: 6.399999999999993 87

t,pos: 6.499999999999993 87

t,pos: 6.5999999999999925 87

t,pos: 6.699999999999992 87

t,pos: 6.799999999999992 87

t,pos: 6.8999999999999915 87

t,pos: 6.999999999999991 87

t,pos: 7.099999999999991 87

t,pos: 7.19999999999999 87

t,pos: 7.29999999999999 87

t,pos: 7.39999999999999 87

t,pos: 7.499999999999989 87

t,pos: 7.599999999999989 87

t,pos: 7.699999999999989 87

t,pos: 7.799999999999988 87

t,pos: 7.899999999999988 87

t,pos: 7.999999999999988 87

t,pos: 8.099999999999987 87

t,pos: 8.199999999999987 87

t,pos: 8.299999999999986 87

t,pos: 8.399999999999986 87

t,pos: 8.499999999999986 87

t,pos: 8.599999999999985 87

t,pos: 8.699999999999985 87

t,pos: 8.799999999999985 87

t,pos: 8.899999999999984 87

t,pos: 8.999999999999984 87

t,pos: 9.099999999999984 87

t,pos: 9.199999999999983 87

t,pos: 9.299999999999983 87

t,pos: 9.399999999999983 87

t,pos: 9.499999999999982 87

t,pos: 9.599999999999982 87

t,pos: 9.699999999999982 87

t,pos: 9.799999999999981 87

t,pos: 9.89999999999998 87

t,pos: 9.99999999999998 87

t,pos: 10.09999999999998 87

t,pos: 10.19999999999998 87

t,pos: 10.29999999999998 87

t,pos: 10.399999999999979 87

t,pos: 10.499999999999979 87

t,pos: 10.599999999999978 87

t,pos: 10.699999999999978 87

t,pos: 10.799999999999978 87

t,pos: 10.899999999999977 87

t,pos: 10.999999999999977 87

t,pos: 11.099999999999977 87

t,pos: 11.199999999999976 87

t,pos: 11.299999999999976 87

t,pos: 11.399999999999975 87

t,pos: 11.499999999999975 87

t,pos: 11.599999999999975 87

t,pos: 11.699999999999974 87

t,pos: 11.799999999999974 87

t,pos: 11.899999999999974 87

t,pos: 11.999999999999973 87

t,pos: 12.099999999999973 87

t,pos: 12.199999999999973 87

t,pos: 12.299999999999972 87

t,pos: 12.399999999999972 87

t,pos: 12.499999999999972 87

t,pos: 12.599999999999971 87

t,pos: 12.69999999999997 87

t,pos: 12.79999999999997 87

t,pos: 12.89999999999997 87

t,pos: 12.99999999999997 87

t,pos: 13.09999999999997 87

t,pos: 13.199999999999969 87

t,pos: 13.299999999999969 87

t,pos: 13.399999999999968 87

t,pos: 13.499999999999968 87

t,pos: 13.599999999999968 87

t,pos: 13.699999999999967 87

t,pos: 13.799999999999967 87

t,pos: 13.899999999999967 87

t,pos: 13.999999999999966 87

t,pos: 14.099999999999966 87

t,pos: 14.199999999999966 87

t,pos: 14.299999999999965 87

t,pos: 14.399999999999965 87

t,pos: 14.499999999999964 87

t,pos: 14.599999999999964 87

t,pos: 14.699999999999964 87

t,pos: 14.799999999999963 87

t,pos: 14.899999999999963 87

t,pos: 14.999999999999963 87

**robot@ev3dev:~/lab2$ python3 PID.py**

**Kp:4.2**

**setpoint,Kp,Ki,Kd,dt: 90 4.2 0 0 0.1**

t,pos: 0 0

t,pos: 0.1 28

t,pos: 0.2 51

t,pos: 0.30000000000000004 65

t,pos: 0.4 72

t,pos: 0.5 77

t,pos: 0.6 80

t,pos: 0.7 83

t,pos: 0.7999999999999999 83

t,pos: 0.8999999999999999 85

t,pos: 0.9999999999999999 87

t,pos: 1.0999999999999999 87

t,pos: 1.2 87

t,pos: 1.3 87

t,pos: 1.4000000000000001 87

t,pos: 1.5000000000000002 87

t,pos: 1.6000000000000003 87

t,pos: 1.7000000000000004 87

t,pos: 1.8000000000000005 87

t,pos: 1.9000000000000006 87

t,pos: 2.0000000000000004 88

t,pos: 2.1000000000000005 91

t,pos: 2.2000000000000006 89

t,pos: 2.3000000000000007 91

t,pos: 2.400000000000001 91

t,pos: 2.500000000000001 91

t,pos: 2.600000000000001 91

t,pos: 2.700000000000001 91

t,pos: 2.800000000000001 91

t,pos: 2.9000000000000012 91

t,pos: 3.0000000000000013 91

t,pos: 3.1000000000000014 91

t,pos: 3.2000000000000015 91

t,pos: 3.3000000000000016 91

t,pos: 3.4000000000000017 91

t,pos: 3.5000000000000018 91

t,pos: 3.600000000000002 91

t,pos: 3.700000000000002 91

t,pos: 3.800000000000002 91

t,pos: 3.900000000000002 91

t,pos: 4.000000000000002 91

t,pos: 4.100000000000001 91

t,pos: 4.200000000000001 91

t,pos: 4.300000000000001 91

t,pos: 4.4 91

t,pos: 4.5 91

t,pos: 4.6 91

t,pos: 4.699999999999999 91

t,pos: 4.799999999999999 91

t,pos: 4.899999999999999 91

t,pos: 4.999999999999998 91

t,pos: 5.099999999999998 91

t,pos: 5.1999999999999975 91

t,pos: 5.299999999999997 91

t,pos: 5.399999999999997 91

t,pos: 5.4999999999999964 91

t,pos: 5.599999999999996 91

t,pos: 5.699999999999996 91

t,pos: 5.799999999999995 91

t,pos: 5.899999999999995 91

t,pos: 5.999999999999995 91

t,pos: 6.099999999999994 91

t,pos: 6.199999999999994 91

t,pos: 6.299999999999994 91

t,pos: 6.399999999999993 91

t,pos: 6.499999999999993 91

t,pos: 6.5999999999999925 91

t,pos: 6.699999999999992 91

t,pos: 6.799999999999992 91

t,pos: 6.8999999999999915 91

t,pos: 6.999999999999991 91

t,pos: 7.099999999999991 91

t,pos: 7.19999999999999 91

t,pos: 7.29999999999999 91

t,pos: 7.39999999999999 91

t,pos: 7.499999999999989 91

t,pos: 7.599999999999989 91

t,pos: 7.699999999999989 91

t,pos: 7.799999999999988 91

t,pos: 7.899999999999988 91

t,pos: 7.999999999999988 91

t,pos: 8.099999999999987 91

t,pos: 8.199999999999987 91

t,pos: 8.299999999999986 91

t,pos: 8.399999999999986 91

t,pos: 8.499999999999986 91

t,pos: 8.599999999999985 91

t,pos: 8.699999999999985 91

t,pos: 8.799999999999985 91

t,pos: 8.899999999999984 91

t,pos: 8.999999999999984 91

t,pos: 9.099999999999984 91

t,pos: 9.199999999999983 91

t,pos: 9.299999999999983 91

t,pos: 9.399999999999983 91

t,pos: 9.499999999999982 91

t,pos: 9.599999999999982 91

t,pos: 9.699999999999982 91

t,pos: 9.799999999999981 91

t,pos: 9.89999999999998 91

t,pos: 9.99999999999998 91

t,pos: 10.09999999999998 91

t,pos: 10.19999999999998 91

t,pos: 10.29999999999998 91

t,pos: 10.399999999999979 91

t,pos: 10.499999999999979 91

t,pos: 10.599999999999978 91

t,pos: 10.699999999999978 91

t,pos: 10.799999999999978 91

t,pos: 10.899999999999977 91

t,pos: 10.999999999999977 91

t,pos: 11.099999999999977 91

t,pos: 11.199999999999976 91

t,pos: 11.299999999999976 91

t,pos: 11.399999999999975 91

t,pos: 11.499999999999975 91

t,pos: 11.599999999999975 91

t,pos: 11.699999999999974 91

t,pos: 11.799999999999974 91

t,pos: 11.899999999999974 91

t,pos: 11.999999999999973 91

t,pos: 12.099999999999973 91

t,pos: 12.199999999999973 91

t,pos: 12.299999999999972 91

t,pos: 12.399999999999972 91

t,pos: 12.499999999999972 91

t,pos: 12.599999999999971 91

t,pos: 12.69999999999997 91

t,pos: 12.79999999999997 91

t,pos: 12.89999999999997 91

t,pos: 12.99999999999997 91

t,pos: 13.09999999999997 91

t,pos: 13.199999999999969 91

t,pos: 13.299999999999969 91

t,pos: 13.399999999999968 91

t,pos: 13.499999999999968 91

t,pos: 13.599999999999968 91

t,pos: 13.699999999999967 91

t,pos: 13.799999999999967 91

t,pos: 13.899999999999967 91

t,pos: 13.999999999999966 91

t,pos: 14.099999999999966 91

t,pos: 14.199999999999966 91

t,pos: 14.299999999999965 91

t,pos: 14.399999999999965 91

t,pos: 14.499999999999964 91

t,pos: 14.599999999999964 91

t,pos: 14.699999999999964 91

t,pos: 14.799999999999963 91

t,pos: 14.899999999999963 91

t,pos: 14.999999999999963 91

**robot@ev3dev:~/lab2$ python3 PID.py**

**Kp:4.1**

**setpoint,Kp,Ki,Kd,dt: 90 4.1 0 0 0.1**

t,pos: 0 0

t,pos: 0.1 28

t,pos: 0.2 50

t,pos: 0.30000000000000004 63

t,pos: 0.4 71

t,pos: 0.5 75

t,pos: 0.6 80

t,pos: 0.7 81

t,pos: 0.7999999999999999 83

t,pos: 0.8999999999999999 85

t,pos: 0.9999999999999999 86

t,pos: 1.0999999999999999 85

t,pos: 1.2 86

t,pos: 1.3 86

t,pos: 1.4000000000000001 86

t,pos: 1.5000000000000002 86

t,pos: 1.6000000000000003 86

t,pos: 1.7000000000000004 86

t,pos: 1.8000000000000005 85

t,pos: 1.9000000000000006 86

t,pos: 2.0000000000000004 86

t,pos: 2.1000000000000005 86

t,pos: 2.2000000000000006 86

t,pos: 2.3000000000000007 86

t,pos: 2.400000000000001 88

t,pos: 2.500000000000001 88

t,pos: 2.600000000000001 88

t,pos: 2.700000000000001 88

t,pos: 2.800000000000001 88

t,pos: 2.9000000000000012 88

t,pos: 3.0000000000000013 88

t,pos: 3.1000000000000014 88

t,pos: 3.2000000000000015 88

t,pos: 3.3000000000000016 88

t,pos: 3.4000000000000017 88

t,pos: 3.5000000000000018 88

t,pos: 3.600000000000002 88

t,pos: 3.700000000000002 88

t,pos: 3.800000000000002 88

t,pos: 3.900000000000002 88

t,pos: 4.000000000000002 88

t,pos: 4.100000000000001 88

t,pos: 4.200000000000001 88

t,pos: 4.300000000000001 88

t,pos: 4.4 88

t,pos: 4.5 88

t,pos: 4.6 90

t,pos: 4.699999999999999 90

t,pos: 4.799999999999999 90

t,pos: 4.899999999999999 90

t,pos: 4.999999999999998 90

t,pos: 5.099999999999998 90

t,pos: 5.1999999999999975 90

t,pos: 5.299999999999997 90

t,pos: 5.399999999999997 90

t,pos: 5.4999999999999964 90

t,pos: 5.599999999999996 90

t,pos: 5.699999999999996 90

t,pos: 5.799999999999995 90

t,pos: 5.899999999999995 90

t,pos: 5.999999999999995 90

t,pos: 6.099999999999994 90

t,pos: 6.199999999999994 90

t,pos: 6.299999999999994 90

t,pos: 6.399999999999993 90

t,pos: 6.499999999999993 90

t,pos: 6.5999999999999925 90

t,pos: 6.699999999999992 90

t,pos: 6.799999999999992 90

t,pos: 6.8999999999999915 90

t,pos: 6.999999999999991 90

t,pos: 7.099999999999991 90

t,pos: 7.19999999999999 90

t,pos: 7.29999999999999 90

t,pos: 7.39999999999999 90

t,pos: 7.499999999999989 90

t,pos: 7.599999999999989 90

t,pos: 7.699999999999989 90

t,pos: 7.799999999999988 90

t,pos: 7.899999999999988 90

t,pos: 7.999999999999988 90

t,pos: 8.099999999999987 90

t,pos: 8.199999999999987 90

t,pos: 8.299999999999986 90

t,pos: 8.399999999999986 90

t,pos: 8.499999999999986 90

t,pos: 8.599999999999985 90

t,pos: 8.699999999999985 90

t,pos: 8.799999999999985 90

t,pos: 8.899999999999984 90

t,pos: 8.999999999999984 90

t,pos: 9.099999999999984 90

t,pos: 9.199999999999983 90

t,pos: 9.299999999999983 90

t,pos: 9.399999999999983 90

t,pos: 9.499999999999982 90

t,pos: 9.599999999999982 90

t,pos: 9.699999999999982 90

t,pos: 9.799999999999981 90

t,pos: 9.89999999999998 90

t,pos: 9.99999999999998 90

t,pos: 10.09999999999998 90

t,pos: 10.19999999999998 90

t,pos: 10.29999999999998 90

t,pos: 10.399999999999979 90

t,pos: 10.499999999999979 90

t,pos: 10.599999999999978 90

t,pos: 10.699999999999978 90

t,pos: 10.799999999999978 90

t,pos: 10.899999999999977 90

t,pos: 10.999999999999977 90

t,pos: 11.099999999999977 90

t,pos: 11.199999999999976 90

t,pos: 11.299999999999976 90

t,pos: 11.399999999999975 90

t,pos: 11.499999999999975 90

t,pos: 11.599999999999975 90

t,pos: 11.699999999999974 90

t,pos: 11.799999999999974 90

t,pos: 11.899999999999974 90

t,pos: 11.999999999999973 90

t,pos: 12.099999999999973 90

t,pos: 12.199999999999973 90

t,pos: 12.299999999999972 90

t,pos: 12.399999999999972 90

t,pos: 12.499999999999972 90

t,pos: 12.599999999999971 90

t,pos: 12.69999999999997 90

t,pos: 12.79999999999997 90

t,pos: 12.89999999999997 90

t,pos: 12.99999999999997 90

t,pos: 13.09999999999997 90

t,pos: 13.199999999999969 90

t,pos: 13.299999999999969 90

t,pos: 13.399999999999968 90

t,pos: 13.499999999999968 90

t,pos: 13.599999999999968 90

t,pos: 13.699999999999967 90

t,pos: 13.799999999999967 90

t,pos: 13.899999999999967 90

t,pos: 13.999999999999966 90

t,pos: 14.099999999999966 90

t,pos: 14.199999999999966 90

t,pos: 14.299999999999965 90

t,pos: 14.399999999999965 90

t,pos: 14.499999999999964 90

t,pos: 14.599999999999964 90

t,pos: 14.699999999999964 90

t,pos: 14.799999999999963 90

t,pos: 14.899999999999963 90

t,pos: 14.999999999999963 90

**robot@ev3dev:~/lab2$ python3 PID.py**

**Kp:4.05**

**setpoint,Kp,Ki,Kd,dt: 90 4.05 0 0 0.1**

t,pos: 0 0

t,pos: 0.1 31

t,pos: 0.2 53

t,pos: 0.30000000000000004 64

t,pos: 0.4 72

t,pos: 0.5 76

t,pos: 0.6 79

t,pos: 0.7 80

t,pos: 0.7999999999999999 84

t,pos: 0.8999999999999999 86

t,pos: 0.9999999999999999 85

t,pos: 1.0999999999999999 86

t,pos: 1.2 86

t,pos: 1.3 86

t,pos: 1.4000000000000001 86

t,pos: 1.5000000000000002 86

t,pos: 1.6000000000000003 86

t,pos: 1.7000000000000004 85

t,pos: 1.8000000000000005 86

t,pos: 1.9000000000000006 86

t,pos: 2.0000000000000004 86

t,pos: 2.1000000000000005 86

t,pos: 2.2000000000000006 86

t,pos: 2.3000000000000007 86

t,pos: 2.400000000000001 86

t,pos: 2.500000000000001 86

t,pos: 2.600000000000001 86

t,pos: 2.700000000000001 86

t,pos: 2.800000000000001 85

t,pos: 2.9000000000000012 86

t,pos: 3.0000000000000013 86

t,pos: 3.1000000000000014 86

t,pos: 3.2000000000000015 86

t,pos: 3.3000000000000016 86

t,pos: 3.4000000000000017 86

t,pos: 3.5000000000000018 85

t,pos: 3.600000000000002 86

t,pos: 3.700000000000002 90

t,pos: 3.800000000000002 91

t,pos: 3.900000000000002 91

t,pos: 4.000000000000002 91

t,pos: 4.100000000000001 91

t,pos: 4.200000000000001 91

t,pos: 4.300000000000001 91

t,pos: 4.4 91

t,pos: 4.5 91

t,pos: 4.6 91

t,pos: 4.699999999999999 91

t,pos: 4.799999999999999 91

t,pos: 4.899999999999999 91

t,pos: 4.999999999999998 91

t,pos: 5.099999999999998 91

t,pos: 5.1999999999999975 91

t,pos: 5.299999999999997 91

t,pos: 5.399999999999997 91

t,pos: 5.4999999999999964 91

t,pos: 5.599999999999996 91

t,pos: 5.699999999999996 91

t,pos: 5.799999999999995 91

t,pos: 5.899999999999995 91

t,pos: 5.999999999999995 91

t,pos: 6.099999999999994 91

t,pos: 6.199999999999994 91

t,pos: 6.299999999999994 91

t,pos: 6.399999999999993 91

t,pos: 6.499999999999993 91

t,pos: 6.5999999999999925 91

t,pos: 6.699999999999992 91

t,pos: 6.799999999999992 91

t,pos: 6.8999999999999915 91

t,pos: 6.999999999999991 91

t,pos: 7.099999999999991 91

t,pos: 7.19999999999999 91

t,pos: 7.29999999999999 91

t,pos: 7.39999999999999 91

t,pos: 7.499999999999989 91

t,pos: 7.599999999999989 91

t,pos: 7.699999999999989 91

t,pos: 7.799999999999988 91

t,pos: 7.899999999999988 91

t,pos: 7.999999999999988 91

t,pos: 8.099999999999987 91

t,pos: 8.199999999999987 91

t,pos: 8.299999999999986 91

t,pos: 8.399999999999986 91

t,pos: 8.499999999999986 91

t,pos: 8.599999999999985 91

t,pos: 8.699999999999985 91

t,pos: 8.799999999999985 91

t,pos: 8.899999999999984 91

t,pos: 8.999999999999984 91

t,pos: 9.099999999999984 91

t,pos: 9.199999999999983 91

t,pos: 9.299999999999983 91

t,pos: 9.399999999999983 91

t,pos: 9.499999999999982 91

t,pos: 9.599999999999982 91

t,pos: 9.699999999999982 91

t,pos: 9.799999999999981 91

t,pos: 9.89999999999998 91

t,pos: 9.99999999999998 91

t,pos: 10.09999999999998 91

t,pos: 10.19999999999998 91

t,pos: 10.29999999999998 91

t,pos: 10.399999999999979 91

t,pos: 10.499999999999979 91

t,pos: 10.599999999999978 91

t,pos: 10.699999999999978 91

t,pos: 10.799999999999978 91

t,pos: 10.899999999999977 91

t,pos: 10.999999999999977 91

t,pos: 11.099999999999977 91

t,pos: 11.199999999999976 91

t,pos: 11.299999999999976 91

t,pos: 11.399999999999975 91

t,pos: 11.499999999999975 91

t,pos: 11.599999999999975 91

t,pos: 11.699999999999974 91

t,pos: 11.799999999999974 91

t,pos: 11.899999999999974 91

t,pos: 11.999999999999973 91

t,pos: 12.099999999999973 91

t,pos: 12.199999999999973 91

t,pos: 12.299999999999972 91

t,pos: 12.399999999999972 91

t,pos: 12.499999999999972 91

t,pos: 12.599999999999971 91

t,pos: 12.69999999999997 91

t,pos: 12.79999999999997 91

t,pos: 12.89999999999997 91

t,pos: 12.99999999999997 91

t,pos: 13.09999999999997 91

t,pos: 13.199999999999969 91

t,pos: 13.299999999999969 91

t,pos: 13.399999999999968 91

t,pos: 13.499999999999968 91

t,pos: 13.599999999999968 91

t,pos: 13.699999999999967 91

t,pos: 13.799999999999967 91

t,pos: 13.899999999999967 91

t,pos: 13.999999999999966 91

t,pos: 14.099999999999966 91

t,pos: 14.199999999999966 91

t,pos: 14.299999999999965 91

t,pos: 14.399999999999965 91

t,pos: 14.499999999999964 91

t,pos: 14.599999999999964 91

t,pos: 14.699999999999964 91

t,pos: 14.799999999999963 91

t,pos: 14.899999999999963 91

t,pos: 14.999999999999963 91

**robot@ev3dev:~/lab2$ python3 PID.py**

**Kp:4**

**setpoint,Kp,Ki,Kd,dt: 90 4.0 0 0 0.1**

t,pos: 0 0

t,pos: 0.1 30

t,pos: 0.2 49

t,pos: 0.30000000000000004 62

t,pos: 0.4 69

t,pos: 0.5 75

t,pos: 0.6 79

t,pos: 0.7 81

t,pos: 0.7999999999999999 83

t,pos: 0.8999999999999999 83

t,pos: 0.9999999999999999 84

t,pos: 1.0999999999999999 84

t,pos: 1.2 86

t,pos: 1.3 87

t,pos: 1.4000000000000001 87

t,pos: 1.5000000000000002 87

t,pos: 1.6000000000000003 87

t,pos: 1.7000000000000004 87

t,pos: 1.8000000000000005 88

t,pos: 1.9000000000000006 88

t,pos: 2.0000000000000004 88

t,pos: 2.1000000000000005 88

t,pos: 2.2000000000000006 88

t,pos: 2.3000000000000007 88

t,pos: 2.400000000000001 88

t,pos: 2.500000000000001 88

t,pos: 2.600000000000001 88

t,pos: 2.700000000000001 88

t,pos: 2.800000000000001 88

t,pos: 2.9000000000000012 88

t,pos: 3.0000000000000013 88

t,pos: 3.1000000000000014 88

t,pos: 3.2000000000000015 88

t,pos: 3.3000000000000016 88

t,pos: 3.4000000000000017 88

t,pos: 3.5000000000000018 88

t,pos: 3.600000000000002 88

t,pos: 3.700000000000002 88

t,pos: 3.800000000000002 88

t,pos: 3.900000000000002 88

t,pos: 4.000000000000002 88

t,pos: 4.100000000000001 88

t,pos: 4.200000000000001 88

t,pos: 4.300000000000001 88

t,pos: 4.4 88

t,pos: 4.5 88

t,pos: 4.6 88

t,pos: 4.699999999999999 88

t,pos: 4.799999999999999 88

t,pos: 4.899999999999999 88

t,pos: 4.999999999999998 88

t,pos: 5.099999999999998 88

t,pos: 5.1999999999999975 88

t,pos: 5.299999999999997 88

t,pos: 5.399999999999997 88

t,pos: 5.4999999999999964 88

t,pos: 5.599999999999996 88

t,pos: 5.699999999999996 88

t,pos: 5.799999999999995 88

t,pos: 5.899999999999995 88

t,pos: 5.999999999999995 88

t,pos: 6.099999999999994 88

t,pos: 6.199999999999994 88

t,pos: 6.299999999999994 88

t,pos: 6.399999999999993 88

t,pos: 6.499999999999993 88

t,pos: 6.5999999999999925 88

t,pos: 6.699999999999992 88

t,pos: 6.799999999999992 88

t,pos: 6.8999999999999915 88

t,pos: 6.999999999999991 88

t,pos: 7.099999999999991 88

t,pos: 7.19999999999999 88

t,pos: 7.29999999999999 88

t,pos: 7.39999999999999 88

t,pos: 7.499999999999989 88

t,pos: 7.599999999999989 88

t,pos: 7.699999999999989 88

t,pos: 7.799999999999988 88

t,pos: 7.899999999999988 88

t,pos: 7.999999999999988 88

t,pos: 8.099999999999987 88

t,pos: 8.199999999999987 88

t,pos: 8.299999999999986 88

t,pos: 8.399999999999986 88

t,pos: 8.499999999999986 88

t,pos: 8.599999999999985 88

t,pos: 8.699999999999985 88

t,pos: 8.799999999999985 88

t,pos: 8.899999999999984 88

t,pos: 8.999999999999984 88

t,pos: 9.099999999999984 88

t,pos: 9.199999999999983 88

t,pos: 9.299999999999983 88

t,pos: 9.399999999999983 88

t,pos: 9.499999999999982 88

t,pos: 9.599999999999982 88

t,pos: 9.699999999999982 88

t,pos: 9.799999999999981 88

t,pos: 9.89999999999998 88

t,pos: 9.99999999999998 88

t,pos: 10.09999999999998 88

t,pos: 10.19999999999998 88

t,pos: 10.29999999999998 88

t,pos: 10.399999999999979 88

t,pos: 10.499999999999979 88

t,pos: 10.599999999999978 88

t,pos: 10.699999999999978 88

t,pos: 10.799999999999978 88

t,pos: 10.899999999999977 88

t,pos: 10.999999999999977 88

t,pos: 11.099999999999977 88

t,pos: 11.199999999999976 88

t,pos: 11.299999999999976 88

t,pos: 11.399999999999975 88

t,pos: 11.499999999999975 88

t,pos: 11.599999999999975 88

t,pos: 11.699999999999974 88

t,pos: 11.799999999999974 88

t,pos: 11.899999999999974 88

t,pos: 11.999999999999973 88

t,pos: 12.099999999999973 88

t,pos: 12.199999999999973 88

t,pos: 12.299999999999972 88

t,pos: 12.399999999999972 88

t,pos: 12.499999999999972 88

t,pos: 12.599999999999971 88

t,pos: 12.69999999999997 88

t,pos: 12.79999999999997 88

t,pos: 12.89999999999997 88

t,pos: 12.99999999999997 88

t,pos: 13.09999999999997 88

t,pos: 13.199999999999969 88

t,pos: 13.299999999999969 88

t,pos: 13.399999999999968 88

t,pos: 13.499999999999968 88

t,pos: 13.599999999999968 88

t,pos: 13.699999999999967 88

t,pos: 13.799999999999967 88

t,pos: 13.899999999999967 88

t,pos: 13.999999999999966 88

t,pos: 14.099999999999966 88

t,pos: 14.199999999999966 88

t,pos: 14.299999999999965 88

t,pos: 14.399999999999965 88

t,pos: 14.499999999999964 88

t,pos: 14.599999999999964 88

t,pos: 14.699999999999964 88

t,pos: 14.799999999999963 88

t,pos: 14.899999999999963 88

t,pos: 14.999999999999963 88

**robot@ev3dev:~/lab2$ python3 PID.py**

**Kp:3.95**

**setpoint,Kp,Ki,Kd,dt: 90 3.95 0 0 0.1**

t,pos: 0 0

t,pos: 0.1 27

t,pos: 0.2 47

t,pos: 0.30000000000000004 61

t,pos: 0.4 69

t,pos: 0.5 74

t,pos: 0.6 78

t,pos: 0.7 85

t,pos: 0.7999999999999999 85

t,pos: 0.8999999999999999 85

t,pos: 0.9999999999999999 85

t,pos: 1.0999999999999999 89

t,pos: 1.2 87

t,pos: 1.3 89

t,pos: 1.4000000000000001 88

t,pos: 1.5000000000000002 88

t,pos: 1.6000000000000003 87

t,pos: 1.7000000000000004 87

t,pos: 1.8000000000000005 87

t,pos: 1.9000000000000006 87

t,pos: 2.0000000000000004 87

t,pos: 2.1000000000000005 87

t,pos: 2.2000000000000006 87

t,pos: 2.3000000000000007 87

t,pos: 2.400000000000001 87

t,pos: 2.500000000000001 87

t,pos: 2.600000000000001 87

t,pos: 2.700000000000001 87

t,pos: 2.800000000000001 87

t,pos: 2.9000000000000012 87

t,pos: 3.0000000000000013 87

t,pos: 3.1000000000000014 87

t,pos: 3.2000000000000015 87

t,pos: 3.3000000000000016 87

t,pos: 3.4000000000000017 87

t,pos: 3.5000000000000018 87

t,pos: 3.600000000000002 87

t,pos: 3.700000000000002 87

t,pos: 3.800000000000002 87

t,pos: 3.900000000000002 87

t,pos: 4.000000000000002 87

t,pos: 4.100000000000001 87

t,pos: 4.200000000000001 87

t,pos: 4.300000000000001 87

t,pos: 4.4 87

t,pos: 4.5 87

t,pos: 4.6 87

t,pos: 4.699999999999999 87

t,pos: 4.799999999999999 87

t,pos: 4.899999999999999 87

t,pos: 4.999999999999998 87

t,pos: 5.099999999999998 87

t,pos: 5.1999999999999975 87

t,pos: 5.299999999999997 87

t,pos: 5.399999999999997 88

t,pos: 5.4999999999999964 87

t,pos: 5.599999999999996 87

t,pos: 5.699999999999996 87

t,pos: 5.799999999999995 87

t,pos: 5.899999999999995 87

t,pos: 5.999999999999995 87

t,pos: 6.099999999999994 87

t,pos: 6.199999999999994 87

t,pos: 6.299999999999994 87

t,pos: 6.399999999999993 87

t,pos: 6.499999999999993 87

t,pos: 6.5999999999999925 87

t,pos: 6.699999999999992 87

t,pos: 6.799999999999992 87

t,pos: 6.8999999999999915 87

t,pos: 6.999999999999991 87

t,pos: 7.099999999999991 87

t,pos: 7.19999999999999 87

t,pos: 7.29999999999999 87

t,pos: 7.39999999999999 87

t,pos: 7.499999999999989 87

t,pos: 7.599999999999989 87

t,pos: 7.699999999999989 87

t,pos: 7.799999999999988 87

t,pos: 7.899999999999988 87

t,pos: 7.999999999999988 88

t,pos: 8.099999999999987 87

t,pos: 8.199999999999987 87

t,pos: 8.299999999999986 87

t,pos: 8.399999999999986 87

t,pos: 8.499999999999986 87

t,pos: 8.599999999999985 87

t,pos: 8.699999999999985 87

t,pos: 8.799999999999985 87

t,pos: 8.899999999999984 87

t,pos: 8.999999999999984 87

t,pos: 9.099999999999984 87

t,pos: 9.199999999999983 87

t,pos: 9.299999999999983 87

t,pos: 9.399999999999983 87

t,pos: 9.499999999999982 87

t,pos: 9.599999999999982 87

t,pos: 9.699999999999982 87

t,pos: 9.799999999999981 87

t,pos: 9.89999999999998 87

t,pos: 9.99999999999998 87

t,pos: 10.09999999999998 87

t,pos: 10.19999999999998 87

t,pos: 10.29999999999998 87

t,pos: 10.399999999999979 87

t,pos: 10.499999999999979 87

t,pos: 10.599999999999978 87

t,pos: 10.699999999999978 87

t,pos: 10.799999999999978 87

t,pos: 10.899999999999977 87

t,pos: 10.999999999999977 87

t,pos: 11.099999999999977 87

t,pos: 11.199999999999976 87

t,pos: 11.299999999999976 87

t,pos: 11.399999999999975 87

t,pos: 11.499999999999975 87

t,pos: 11.599999999999975 87

t,pos: 11.699999999999974 87

t,pos: 11.799999999999974 87

t,pos: 11.899999999999974 88

t,pos: 11.999999999999973 87

t,pos: 12.099999999999973 87

t,pos: 12.199999999999973 87

t,pos: 12.299999999999972 87

t,pos: 12.399999999999972 87

t,pos: 12.499999999999972 87

t,pos: 12.599999999999971 87

t,pos: 12.69999999999997 87

t,pos: 12.79999999999997 88

t,pos: 12.89999999999997 87

t,pos: 12.99999999999997 87

t,pos: 13.09999999999997 87

t,pos: 13.199999999999969 87

t,pos: 13.299999999999969 87

t,pos: 13.399999999999968 87

t,pos: 13.499999999999968 87

t,pos: 13.599999999999968 88

t,pos: 13.699999999999967 87

t,pos: 13.799999999999967 87

t,pos: 13.899999999999967 87

t,pos: 13.999999999999966 87

t,pos: 14.099999999999966 87

t,pos: 14.199999999999966 87

t,pos: 14.299999999999965 87

t,pos: 14.399999999999965 87

t,pos: 14.499999999999964 87

t,pos: 14.599999999999964 87

t,pos: 14.699999999999964 87

t,pos: 14.799999999999963 87

t,pos: 14.899999999999963 87

t,pos: 14.999999999999963 87

**robot@ev3dev:~/lab2$ python3 PID.py**

**Kp:3.9**

**setpoint,Kp,Ki,Kd,dt: 90 3.9 0 0 0.1**

t,pos: 0 0

t,pos: 0.1 28

t,pos: 0.2 47

t,pos: 0.30000000000000004 60

t,pos: 0.4 69

t,pos: 0.5 79

t,pos: 0.6 80

t,pos: 0.7 84

t,pos: 0.7999999999999999 84

t,pos: 0.8999999999999999 86

t,pos: 0.9999999999999999 86

t,pos: 1.0999999999999999 87

t,pos: 1.2 87

t,pos: 1.3 87

t,pos: 1.4000000000000001 87

t,pos: 1.5000000000000002 87

t,pos: 1.6000000000000003 87

t,pos: 1.7000000000000004 87

t,pos: 1.8000000000000005 87

t,pos: 1.9000000000000006 90

t,pos: 2.0000000000000004 92

t,pos: 2.1000000000000005 92

t,pos: 2.2000000000000006 92

t,pos: 2.3000000000000007 92

t,pos: 2.400000000000001 92

t,pos: 2.500000000000001 92

t,pos: 2.600000000000001 92

t,pos: 2.700000000000001 92

t,pos: 2.800000000000001 92

t,pos: 2.9000000000000012 92

t,pos: 3.0000000000000013 92

t,pos: 3.1000000000000014 92

t,pos: 3.2000000000000015 92

t,pos: 3.3000000000000016 92

t,pos: 3.4000000000000017 92

t,pos: 3.5000000000000018 92

t,pos: 3.600000000000002 92

t,pos: 3.700000000000002 92

t,pos: 3.800000000000002 92

t,pos: 3.900000000000002 92

t,pos: 4.000000000000002 92

t,pos: 4.100000000000001 92

t,pos: 4.200000000000001 92

t,pos: 4.300000000000001 92

t,pos: 4.4 92

t,pos: 4.5 92

t,pos: 4.6 92

t,pos: 4.699999999999999 92

t,pos: 4.799999999999999 92

t,pos: 4.899999999999999 92

t,pos: 4.999999999999998 92

t,pos: 5.099999999999998 92

t,pos: 5.1999999999999975 92

t,pos: 5.299999999999997 92

t,pos: 5.399999999999997 92

t,pos: 5.4999999999999964 92

t,pos: 5.599999999999996 92

t,pos: 5.699999999999996 92

t,pos: 5.799999999999995 92

t,pos: 5.899999999999995 92

t,pos: 5.999999999999995 92

t,pos: 6.099999999999994 92

t,pos: 6.199999999999994 92

t,pos: 6.299999999999994 92

t,pos: 6.399999999999993 92

t,pos: 6.499999999999993 92

t,pos: 6.5999999999999925 92

t,pos: 6.699999999999992 92

t,pos: 6.799999999999992 92

t,pos: 6.8999999999999915 92

t,pos: 6.999999999999991 92

t,pos: 7.099999999999991 92

t,pos: 7.19999999999999 92

t,pos: 7.29999999999999 92

t,pos: 7.39999999999999 92

t,pos: 7.499999999999989 92

t,pos: 7.599999999999989 92

t,pos: 7.699999999999989 92

t,pos: 7.799999999999988 92

t,pos: 7.899999999999988 92

t,pos: 7.999999999999988 92

t,pos: 8.099999999999987 92

t,pos: 8.199999999999987 92

t,pos: 8.299999999999986 92

t,pos: 8.399999999999986 92

t,pos: 8.499999999999986 92

t,pos: 8.599999999999985 92

t,pos: 8.699999999999985 92

t,pos: 8.799999999999985 92

t,pos: 8.899999999999984 92

t,pos: 8.999999999999984 92

t,pos: 9.099999999999984 92

t,pos: 9.199999999999983 92

t,pos: 9.299999999999983 92

t,pos: 9.399999999999983 92

t,pos: 9.499999999999982 92

t,pos: 9.599999999999982 92

t,pos: 9.699999999999982 92

t,pos: 9.799999999999981 92

t,pos: 9.89999999999998 92

t,pos: 9.99999999999998 92

t,pos: 10.09999999999998 92

t,pos: 10.19999999999998 92

t,pos: 10.29999999999998 92

t,pos: 10.399999999999979 92

t,pos: 10.499999999999979 92

t,pos: 10.599999999999978 92

t,pos: 10.699999999999978 92

t,pos: 10.799999999999978 92

t,pos: 10.899999999999977 92

t,pos: 10.999999999999977 92

t,pos: 11.099999999999977 92

t,pos: 11.199999999999976 92

t,pos: 11.299999999999976 92

t,pos: 11.399999999999975 92

t,pos: 11.499999999999975 92

t,pos: 11.599999999999975 92

t,pos: 11.699999999999974 92

t,pos: 11.799999999999974 92

t,pos: 11.899999999999974 92

t,pos: 11.999999999999973 92

t,pos: 12.099999999999973 92

t,pos: 12.199999999999973 92

t,pos: 12.299999999999972 92

t,pos: 12.399999999999972 92

t,pos: 12.499999999999972 92

t,pos: 12.599999999999971 92

t,pos: 12.69999999999997 92

t,pos: 12.79999999999997 92

t,pos: 12.89999999999997 92

t,pos: 12.99999999999997 92

t,pos: 13.09999999999997 92

t,pos: 13.199999999999969 92

t,pos: 13.299999999999969 92

t,pos: 13.399999999999968 92

t,pos: 13.499999999999968 92

t,pos: 13.599999999999968 92

t,pos: 13.699999999999967 92

t,pos: 13.799999999999967 92

t,pos: 13.899999999999967 92

t,pos: 13.999999999999966 92

t,pos: 14.099999999999966 92

t,pos: 14.199999999999966 92

t,pos: 14.299999999999965 92

t,pos: 14.399999999999965 92

t,pos: 14.499999999999964 92

t,pos: 14.599999999999964 92

t,pos: 14.699999999999964 92

t,pos: 14.799999999999963 92

t,pos: 14.899999999999963 92

t,pos: 14.999999999999963 92

**robot@ev3dev:~/lab2$ python3 PID.py**

**Kp:3.8**

**setpoint,Kp,Ki,Kd,dt: 90 3.8 0 0 0.1**

t,pos: 0 0

t,pos: 0.1 26

t,pos: 0.2 46

t,pos: 0.30000000000000004 58

t,pos: 0.4 67

t,pos: 0.5 73

t,pos: 0.6 78

t,pos: 0.7 79

t,pos: 0.7999999999999999 82

t,pos: 0.8999999999999999 83

t,pos: 0.9999999999999999 84

t,pos: 1.0999999999999999 84

t,pos: 1.2 85

t,pos: 1.3 85

t,pos: 1.4000000000000001 85

t,pos: 1.5000000000000002 85

t,pos: 1.6000000000000003 85

t,pos: 1.7000000000000004 85

t,pos: 1.8000000000000005 85

t,pos: 1.9000000000000006 85

t,pos: 2.0000000000000004 85

t,pos: 2.1000000000000005 85

t,pos: 2.2000000000000006 85

t,pos: 2.3000000000000007 85

t,pos: 2.400000000000001 85

t,pos: 2.500000000000001 85

t,pos: 2.600000000000001 85

t,pos: 2.700000000000001 85

t,pos: 2.800000000000001 85

t,pos: 2.9000000000000012 85

t,pos: 3.0000000000000013 85

t,pos: 3.1000000000000014 85

t,pos: 3.2000000000000015 85

t,pos: 3.3000000000000016 85

t,pos: 3.4000000000000017 85

t,pos: 3.5000000000000018 85

t,pos: 3.600000000000002 89

t,pos: 3.700000000000002 88

t,pos: 3.800000000000002 90

t,pos: 3.900000000000002 90

t,pos: 4.000000000000002 90

t,pos: 4.100000000000001 90

t,pos: 4.200000000000001 90

t,pos: 4.300000000000001 90

t,pos: 4.4 90

t,pos: 4.5 90

t,pos: 4.6 90

t,pos: 4.699999999999999 90

t,pos: 4.799999999999999 90

t,pos: 4.899999999999999 90

t,pos: 4.999999999999998 90

t,pos: 5.099999999999998 90

t,pos: 5.1999999999999975 90

t,pos: 5.299999999999997 90

t,pos: 5.399999999999997 90

t,pos: 5.4999999999999964 90

t,pos: 5.599999999999996 90

t,pos: 5.699999999999996 90

t,pos: 5.799999999999995 90

t,pos: 5.899999999999995 90

t,pos: 5.999999999999995 90

t,pos: 6.099999999999994 90

t,pos: 6.199999999999994 90

t,pos: 6.299999999999994 90

t,pos: 6.399999999999993 90

t,pos: 6.499999999999993 90

t,pos: 6.5999999999999925 90

t,pos: 6.699999999999992 90

t,pos: 6.799999999999992 90

t,pos: 6.8999999999999915 90

t,pos: 6.999999999999991 90

t,pos: 7.099999999999991 90

t,pos: 7.19999999999999 90

t,pos: 7.29999999999999 90

t,pos: 7.39999999999999 90

t,pos: 7.499999999999989 90

t,pos: 7.599999999999989 90

t,pos: 7.699999999999989 90

t,pos: 7.799999999999988 90

t,pos: 7.899999999999988 90

t,pos: 7.999999999999988 90

t,pos: 8.099999999999987 90

t,pos: 8.199999999999987 90

t,pos: 8.299999999999986 90

t,pos: 8.399999999999986 90

t,pos: 8.499999999999986 90

t,pos: 8.599999999999985 90

t,pos: 8.699999999999985 90

t,pos: 8.799999999999985 90

t,pos: 8.899999999999984 90

t,pos: 8.999999999999984 90

t,pos: 9.099999999999984 90

t,pos: 9.199999999999983 90

t,pos: 9.299999999999983 90

t,pos: 9.399999999999983 90

t,pos: 9.499999999999982 90

t,pos: 9.599999999999982 90

t,pos: 9.699999999999982 90

t,pos: 9.799999999999981 90

t,pos: 9.89999999999998 90

t,pos: 9.99999999999998 90

t,pos: 10.09999999999998 90

t,pos: 10.19999999999998 90

t,pos: 10.29999999999998 90

t,pos: 10.399999999999979 90

t,pos: 10.499999999999979 90

t,pos: 10.599999999999978 90

t,pos: 10.699999999999978 90

t,pos: 10.799999999999978 90

t,pos: 10.899999999999977 90

t,pos: 10.999999999999977 90

t,pos: 11.099999999999977 90

t,pos: 11.199999999999976 90

t,pos: 11.299999999999976 90

t,pos: 11.399999999999975 90

t,pos: 11.499999999999975 90

t,pos: 11.599999999999975 90

t,pos: 11.699999999999974 90

t,pos: 11.799999999999974 90

t,pos: 11.899999999999974 90

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t,pos: 12.099999999999973 90

t,pos: 12.199999999999973 90

t,pos: 12.299999999999972 90

t,pos: 12.399999999999972 90

t,pos: 12.499999999999972 90

t,pos: 12.599999999999971 90

t,pos: 12.69999999999997 90

t,pos: 12.79999999999997 90

t,pos: 12.89999999999997 90

t,pos: 12.99999999999997 90

t,pos: 13.09999999999997 90

t,pos: 13.199999999999969 90

t,pos: 13.299999999999969 90

t,pos: 13.399999999999968 90

t,pos: 13.499999999999968 90

t,pos: 13.599999999999968 90

t,pos: 13.699999999999967 90

t,pos: 13.799999999999967 90

t,pos: 13.899999999999967 90

t,pos: 13.999999999999966 90

t,pos: 14.099999999999966 90

t,pos: 14.199999999999966 90

t,pos: 14.299999999999965 90

t,pos: 14.399999999999965 90

t,pos: 14.499999999999964 90

t,pos: 14.599999999999964 90

t,pos: 14.699999999999964 90

t,pos: 14.799999999999963 90

t,pos: 14.899999999999963 90

t,pos: 14.999999999999963 90

**robot@ev3dev:~/lab2$ python3 PID.py**

**Kp:3.5**

**setpoint,Kp,Ki,Kd,dt: 90 3.5 0 0 0.1**

t,pos: 0 0

t,pos: 0.1 24

t,pos: 0.2 42

t,pos: 0.30000000000000004 56

t,pos: 0.4 64

t,pos: 0.5 71

t,pos: 0.6 74

t,pos: 0.7 78

t,pos: 0.7999999999999999 81

t,pos: 0.8999999999999999 81

t,pos: 0.9999999999999999 82

t,pos: 1.0999999999999999 84

t,pos: 1.2 84

t,pos: 1.3 84

t,pos: 1.4000000000000001 84

t,pos: 1.5000000000000002 86

t,pos: 1.6000000000000003 86

t,pos: 1.7000000000000004 86

t,pos: 1.8000000000000005 86

t,pos: 1.9000000000000006 86

t,pos: 2.0000000000000004 86

t,pos: 2.1000000000000005 86

t,pos: 2.2000000000000006 86

t,pos: 2.3000000000000007 87

t,pos: 2.400000000000001 88

t,pos: 2.500000000000001 88

t,pos: 2.600000000000001 87

t,pos: 2.700000000000001 87

t,pos: 2.800000000000001 87

t,pos: 2.9000000000000012 87

t,pos: 3.0000000000000013 87

t,pos: 3.1000000000000014 87

t,pos: 3.2000000000000015 87

t,pos: 3.3000000000000016 87

t,pos: 3.4000000000000017 87

t,pos: 3.5000000000000018 87

t,pos: 3.600000000000002 87

t,pos: 3.700000000000002 87

t,pos: 3.800000000000002 87

t,pos: 3.900000000000002 87

t,pos: 4.000000000000002 87

t,pos: 4.100000000000001 87

t,pos: 4.200000000000001 87

t,pos: 4.300000000000001 87

t,pos: 4.4 87

t,pos: 4.5 87

t,pos: 4.6 87

t,pos: 4.699999999999999 87

t,pos: 4.799999999999999 87

t,pos: 4.899999999999999 87

t,pos: 4.999999999999998 87

t,pos: 5.099999999999998 87

t,pos: 5.1999999999999975 87

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t,pos: 5.4999999999999964 87

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t,pos: 5.799999999999995 88

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t,pos: 6.199999999999994 87

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t,pos: 7.19999999999999 87

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t,pos: 13.09999999999997 87

t,pos: 13.199999999999969 87

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t,pos: 14.899999999999963 87

t,pos: 14.999999999999963 87