C:\Users\yaels\anaconda3\envs\Gymmy\python.exe "C:\Users\yaels\יעל פרוייקט גמר\zedcheck\TrainingNew.py"

pygame 2.5.2 (SDL 2.28.3, Python 3.11.9)

Hello from the pygame community. https://www.pygame.org/contribute.html

screen start

CAMERA INITIALIZATION

ROBOT INITIALIZATION

CAMERA START

MP INITIALIZATION

MP START

Training: start exercises

ROBOT START

CAMERA: Exercise hello\_waving start

CAMERA: Exercise hello\_waving done

TRAINING: Exercise arms\_up\_and\_down\_stick start

CAMERA: Exercise arms\_up\_and\_down\_stick start

ROBOT: Exercise arms\_up\_and\_down\_stick start

33.41 33.03

147.32 160.81

first angle mean: 33.41

first angle stdev: 0.0

second angle mean: 147.32

second angle stdev: 0.0

23.28 32.49

149.63 154.24

first angle mean: 28.345001

first angle stdev: 5.0649996

second angle mean: 148.475

second angle stdev: 1.1549988

26.93 33.71

137.53 161.87

first angle mean: 27.873335

first angle stdev: 4.189004

second angle mean: 144.82668

second angle stdev: 5.2450027

28.42 32.75

133.53 166.17

first angle mean: 28.01

first angle stdev: 3.6354983

second angle mean: 142.0025

second angle stdev: 6.675351

28.57 31.63

116.06 167.28

first angle mean: 28.122

first angle stdev: 3.2593946

second angle mean: 136.814

second angle stdev: 11.972068

27.17 30.15

104.45 163.97

first angle mean: 27.963333

first angle stdev: 2.9964848

second angle mean: 131.42

second angle stdev: 16.27631

22.78 28.83

107.83 163.65

first angle mean: 27.222857

first angle stdev: 3.3145206

second angle mean: 128.05

second angle stdev: 17.181797

23.43 26.86

118.64 160.29

first angle mean: 26.748749

first angle stdev: 3.3445828

second angle mean: 126.87375

second angle stdev: 16.370625

25.15 26.79

120.15 152.52

first angle mean: 26.57111

first angle stdev: 3.1930807

second angle mean: 126.12667

second angle stdev: 15.578348

22.88 24.8

120.64 155.22

first angle mean: 26.202

first angle stdev: 3.2252715

second angle mean: 125.578

second angle stdev: 14.870297

19.92 25.33

130.18 160.43

first angle mean: 25.630909

first angle stdev: 3.566252

second angle mean: 125.99636

second angle stdev: 14.239862

18.94 26.92

136.36 161.25

first angle mean: 25.073334

first angle stdev: 3.8830535

second angle mean: 126.85999

second angle stdev: 13.931275

19.9 26.22

136.98 155.9

first angle mean: 24.675385

first angle stdev: 3.9772615

second angle mean: 127.63846

second angle stdev: 13.6536875

21.37 27.4

139.02 156.87

first angle mean: 24.439285

first angle stdev: 3.9259853

second angle mean: 128.45143

second angle stdev: 13.479584

18.98 31.04

137.96 159.64

first angle mean: 24.075335

first angle stdev: 4.029921

second angle mean: 129.08533

second angle stdev: 13.236751

21.5 32.03

128.9 160.49

first angle mean: 23.914375

first angle stdev: 3.951438

second angle mean: 129.07375

second angle stdev: 12.816508

20.54 30.33

119.15 159.01

first angle mean: 23.715883

first angle stdev: 3.9148164

second angle mean: 128.48999

second angle stdev: 12.651189

28.17 43.46

129.74 158.87

first angle mean: 23.963335

first angle stdev: 3.9389467

second angle mean: 128.55943

second angle stdev: 12.298079

19.05 54.87

117.06 150.42

first angle mean: 23.704737

first angle stdev: 3.987782

second angle mean: 127.9542

second angle stdev: 12.242392

46.84 75.1

105.39 122.93

first angle mean: 24.8615

first angle stdev: 6.3664117

second angle mean: 126.82599

second angle stdev: 12.906072

86.37 90.35

145.23 126.57

first angle mean: 27.790478

first angle stdev: 14.497559

second angle mean: 127.70237

second angle stdev: 13.190745

103.56 111.61

156.75 164.7

first angle mean: 31.234547

first angle stdev: 21.20659

second angle mean: 129.02272

second angle stdev: 14.237152

109.85 121.68

155.19 163.27

first angle mean: 34.65261

first angle stdev: 26.21442

second angle mean: 130.16042

second angle stdev: 14.911737

112.54 126.43

155.44 156.23

first angle mean: 37.897915

first angle stdev: 30.013317

second angle mean: 131.21375

second angle stdev: 15.447097

118.14 131.12

155.97 152.99

first angle mean: 41.107597

first angle stdev: 33.346916

second angle mean: 132.204

second angle stdev: 15.8934765

121.62 133.13

154.92 150.78

first angle mean: 44.204227

first angle stdev: 36.17976

second angle mean: 133.07768

second angle stdev: 16.185503

125.22 134.04

155.17 149.05

first angle mean: 47.20481

first angle stdev: 38.65987

second angle mean: 133.89592

second angle stdev: 16.421787

128.87 134.68

153.57 147.91

first angle mean: 50.121426

first angle stdev: 40.87648

second angle mean: 134.59856

second angle stdev: 16.534027

129.05 134.29

154.75 148.1

first angle mean: 52.8431

first angle stdev: 42.669434

second angle mean: 135.29344

second angle stdev: 16.657349

128.58 133.13

150.22 146.79

first angle mean: 55.367664

first angle stdev: 44.100117

second angle mean: 135.79099

second angle stdev: 16.595106

128.38 132.69

148.16 147.26

first angle mean: 57.7229

first angle stdev: 45.260338

second angle mean: 136.18999

second angle stdev: 16.470877

128.18 130.96

147.31 145.52

first angle mean: 59.924686

first angle stdev: 46.20353

second angle mean: 136.5375

second angle stdev: 16.326525

128.86 130.68

146.31 145.36

first angle mean: 62.013634

first angle stdev: 47.007603

second angle mean: 136.83365

second angle stdev: 16.16429

126.57 129.28

144.27 147.01

first angle mean: 63.912354

first angle stdev: 47.578278

second angle mean: 137.05237

second angle stdev: 15.974295

125.57 128.55

143.8 147.76

first angle mean: 65.674

first angle stdev: 48.00553

second angle mean: 137.24515

second angle stdev: 15.784516

125.49 128.81

148.27 149.21

first angle mean: 67.335556

first angle stdev: 48.34401

second angle mean: 137.55139

second angle stdev: 15.668842

126.24 128.56

150.82 149.6

first angle mean: 68.92757

first angle stdev: 48.63352

second angle mean: 137.91

second angle stdev: 15.604705

125.08 127.69

150.0 149.8

first angle mean: 70.405266

first angle stdev: 48.823856

second angle mean: 138.22815

second angle stdev: 15.519152

122.87 126.96

149.65 152.24

first angle mean: 71.75052

first angle stdev: 48.902096

second angle mean: 138.52103

second angle stdev: 15.424911

120.48 125.88

150.37 156.33

first angle mean: 72.96875

first angle stdev: 48.882614

second angle mean: 138.81725

second angle stdev: 15.342813

119.67 123.31

151.82 156.63

first angle mean: 74.1078

first angle stdev: 48.817284

second angle mean: 139.13438

second angle stdev: 15.286709

117.92 120.13

155.27 156.24

first angle mean: 75.15095

first angle stdev: 48.69292

second angle mean: 139.51857

second angle stdev: 15.302648

116.21 117.2

160.63 156.03

first angle mean: 76.10581

first angle stdev: 48.519634

second angle mean: 140.00952

second angle stdev: 15.454743

113.21 114.23

167.61 159.49

first angle mean: 76.94909

first angle stdev: 48.282806

second angle mean: 140.63681

second angle stdev: 15.822152

108.61 110.52

168.45 162.31

first angle mean: 77.652664

first angle stdev: 47.970875

second angle mean: 141.25488

second angle stdev: 16.173616

102.77 106.08

169.47 166.81

first angle mean: 78.19869

first angle stdev: 47.587765

second angle mean: 141.86826

second angle stdev: 16.517546

94.9 96.66

171.81 168.38

first angle mean: 78.55404

first angle stdev: 47.14044

second angle mean: 142.50533

second angle stdev: 16.902464

88.71 85.81

176.04 167.21

first angle mean: 78.765625

first angle stdev: 46.669357

second angle mean: 143.20396

second angle stdev: 17.397755

79.33 78.3

174.43 168.84

first angle mean: 78.777145

first angle stdev: 46.190754

second angle mean: 143.84123

second angle stdev: 17.776329

robot count: 1

70.91 78.8

168.38 176.29

first angle mean: 78.6198

first angle stdev: 45.739773

second angle mean: 144.332

second angle stdev: 17.929865

55.61 79.26

150.64 177.33

first angle mean: 78.16863

first angle stdev: 45.401352

second angle mean: 144.45569

second angle stdev: 17.774744

51.01 70.53

107.03 163.67

first angle mean: 77.64635

first angle stdev: 45.117115

second angle mean: 143.73596

second angle stdev: 18.338045

52.4 52.76

93.33 119.95

first angle mean: 77.17

first angle stdev: 44.821278

second angle mean: 142.78491

second angle stdev: 19.415798

40.38 40.28

128.09 96.58

first angle mean: 76.48871

first angle stdev: 44.680473

second angle mean: 142.51277

second angle stdev: 19.336937

31.54 32.88

136.89 111.99

first angle mean: 75.671455

first angle stdev: 44.67789

second angle mean: 142.41055

second angle stdev: 19.175062

29.72 37.12

144.72 105.74

first angle mean: 74.8509

first angle stdev: 44.69342

second angle mean: 142.45178

second angle stdev: 19.005545

34.08 29.75

154.6 126.05

first angle mean: 74.13562

first angle stdev: 44.62184

second angle mean: 142.66492

second angle stdev: 18.905487

32.99 33.49

153.66 144.67

first angle mean: 73.426216

first angle stdev: 44.55856

second angle mean: 142.85448

second angle stdev: 18.796368

26.25 32.58

137.01 139.19

first angle mean: 72.626625

first angle stdev: 44.597034

second angle mean: 142.75542

second angle stdev: 18.651659

37.46 39.53

134.49 132.94

first angle mean: 72.04051

first angle stdev: 44.452396

second angle mean: 142.61766

second angle stdev: 18.52582

51.82 53.85

109.7 140.3

first angle mean: 71.70902

first angle stdev: 44.161232

second angle mean: 142.07803

second angle stdev: 18.842823

36.05 81.36

86.59 153.54

first angle mean: 71.13387

first angle stdev: 44.03337

second angle mean: 141.18306

second angle stdev: 19.954557

42.69 78.93

112.5 160.07

first angle mean: 70.68239

first angle stdev: 43.826923

second angle mean: 140.72777

second angle stdev: 20.117546

83.82 82.55

173.18 165.84

first angle mean: 70.88766

first angle stdev: 43.513695

second angle mean: 141.23485

second angle stdev: 20.36149

93.23 83.25

173.36 165.05

first angle mean: 71.231384

first angle stdev: 43.26515

second angle mean: 141.72908

second angle stdev: 20.587498

94.56 93.33

174.37 170.66

first angle mean: 71.58485

first angle stdev: 43.030598

second angle mean: 142.22365

second angle stdev: 20.816374

97.47 102.9

164.12 172.26

first angle mean: 71.9712

first angle stdev: 42.823444

second angle mean: 142.55046

second angle stdev: 20.830341

103.19 110.98

165.58 170.62

first angle mean: 72.4303

first angle stdev: 42.673187

second angle mean: 142.88913

second angle stdev: 20.861614

109.55 117.73

168.37 162.21

first angle mean: 72.96826

first angle stdev: 42.594475

second angle mean: 143.25842

second angle stdev: 20.93258

116.22 123.26

168.71 159.87

first angle mean: 73.58614

first angle stdev: 42.599457

second angle mean: 143.62201

second angle stdev: 21.00084

120.12 124.53

165.23 157.93

first angle mean: 74.241554

first angle stdev: 42.652355

second angle mean: 143.92636

second angle stdev: 21.007309

124.25 127.76

160.84 153.56

first angle mean: 74.93611

first angle stdev: 42.75755

second angle mean: 144.16124

second angle stdev: 20.954613

128.34 133.0

156.16 150.45

first angle mean: 75.66767

first angle stdev: 42.914997

second angle mean: 144.3256

second angle stdev: 20.857275

133.37 136.16

152.54 147.47

first angle mean: 76.44743

first angle stdev: 43.14157

second angle mean: 144.43661

second angle stdev: 20.737568

counter:1

132.5 142.82

145.51 153.7

first angle mean: 77.1948

first angle stdev: 43.33258

second angle mean: 144.45093

second angle stdev: 20.59922

127.77 141.35

142.87 152.84

first angle mean: 77.86026

first angle stdev: 43.43062

second angle mean: 144.43013

second angle stdev: 20.464043

123.24 128.01

142.29 145.27

first angle mean: 78.449615

first angle stdev: 43.452496

second angle mean: 144.40233

second angle stdev: 20.33217

122.4 120.63

140.31 138.8

first angle mean: 79.01308

first angle stdev: 43.45526

second angle mean: 144.34985

second angle stdev: 20.20666

120.73 125.87

140.81 140.4

first angle mean: 79.54114

first angle stdev: 43.43048

second angle mean: 144.30504

second angle stdev: 20.082262

124.14 136.41

140.96 145.1

first angle mean: 80.09862

first angle stdev: 43.441708

second angle mean: 144.26324

second angle stdev: 19.959814

135.27 138.85

149.39 148.45

first angle mean: 80.77975

first angle stdev: 43.600437

second angle mean: 144.32654

second angle stdev: 19.8443

135.19 133.92

153.73 151.35

first angle mean: 81.44329

first angle stdev: 43.74332

second angle mean: 144.44122

second angle stdev: 19.74991

132.23 129.85

153.15 153.71

first angle mean: 82.055176

first angle stdev: 43.830647

second angle mean: 144.54614

second angle stdev: 19.653557

124.26 127.04

149.0 153.29

first angle mean: 82.55761

first angle stdev: 43.80877

second angle mean: 144.59917

second angle stdev: 19.54219

117.42 125.8

143.76 154.66

first angle mean: 82.96776

first angle stdev: 43.712234

second angle mean: 144.5893

second angle stdev: 19.427109

112.29 123.47

144.86 156.14

first angle mean: 83.308716

first angle stdev: 43.570896

second angle mean: 144.59244

second angle stdev: 19.31385

105.46 117.17

155.86 164.33

first angle mean: 83.563324

first angle stdev: 43.384064

second angle mean: 144.72195

second angle stdev: 19.240055

98.09 109.6

162.2 173.63

first angle mean: 83.7284

first angle stdev: 43.16433

second angle mean: 144.92056

second angle stdev: 19.219913

90.92 100.06

162.35 159.07

first angle mean: 83.80921

first angle stdev: 42.92784

second angle mean: 145.1164

second angle stdev: 19.199724

81.54 86.35

163.66 155.25

first angle mean: 83.784

first angle stdev: 42.68935

second angle mean: 145.32243

second angle stdev: 19.191452

62.69 81.18

151.79 167.53

first angle mean: 83.55219

first angle stdev: 42.511063

second angle mean: 145.39351

second angle stdev: 19.09762

45.97 80.64

139.26 172.47

first angle mean: 83.14369

first angle stdev: 42.4586

second angle mean: 145.32684

second angle stdev: 19.004189

29.92 60.59

112.04 156.29

first angle mean: 82.571396

first angle stdev: 42.584984

second angle mean: 144.96892

second angle stdev: 19.21098

29.94 40.75

122.1 139.47

first angle mean: 82.01148

first angle stdev: 42.700623

second angle mean: 144.72563

second angle stdev: 19.252016

29.34 38.73

137.04 147.02

first angle mean: 81.45705

first angle stdev: 42.814087

second angle mean: 144.64473

second angle stdev: 19.16648

robot count: 2

32.67 40.27

148.29 157.1

first angle mean: 80.94885

first angle stdev: 42.877583

second angle mean: 144.68271

second angle stdev: 19.069983

30.52 41.76

145.15 136.38

first angle mean: 80.42897

first angle stdev: 42.959057

second angle mean: 144.68753

second angle stdev: 18.971487

62.3 76.52

73.24 141.86

first angle mean: 80.24397

first angle stdev: 42.77813

second angle mean: 143.95848

second angle stdev: 20.194118

88.79 92.85

69.81 128.92

first angle mean: 80.3303

first angle stdev: 42.57011

second angle mean: 143.2095

second angle stdev: 21.416292

120.67 115.63

95.89 110.32

first angle mean: 80.733696

first angle stdev: 42.54647

second angle mean: 142.7363

second angle stdev: 21.822887

149.53 138.36

124.16 117.73

first angle mean: 81.41485

first angle stdev: 42.879787

second angle mean: 142.55238

second angle stdev: 21.792337

136.55 154.13

162.55 130.65

first angle mean: 81.95538

first angle stdev: 43.013493

second angle mean: 142.74843

second angle stdev: 21.774578

counter:2

137.41 145.7

173.01 154.79

first angle mean: 82.49378

first angle stdev: 43.148167

second angle mean: 143.04224

second angle stdev: 21.87084

145.26 150.88

174.09 160.8

first angle mean: 83.0973

first angle stdev: 43.37487

second angle mean: 143.34076

second angle stdev: 21.975306

147.79 150.59

178.84 170.3

first angle mean: 83.71342

first angle stdev: 43.622704

second angle mean: 143.67885

second angle stdev: 22.140514

149.77 151.24

176.93 179.5

first angle mean: 84.33659

first angle stdev: 43.883533

second angle mean: 143.99254

second angle stdev: 22.269035

153.61 154.16

171.12 177.02

first angle mean: 84.98401

first angle stdev: 44.183666

second angle mean: 144.24606

second angle stdev: 22.317898

157.7 158.14

166.46 177.34

first angle mean: 85.65731

first angle stdev: 44.526695

second angle mean: 144.45175

second angle stdev: 22.31599

160.88 160.33

169.07 178.21

first angle mean: 86.34742

first angle stdev: 44.89848

second angle mean: 144.67761

second angle stdev: 22.337048

163.61 162.05

174.31 178.91

first angle mean: 87.04981

first angle stdev: 45.291527

second angle mean: 144.94699

second angle stdev: 22.412449

165.29 163.76

176.24 179.06

first angle mean: 87.75468

first angle stdev: 45.6891

second angle mean: 145.22891

second angle stdev: 22.506332

167.7 165.05

173.41 179.02

first angle mean: 88.46848

first angle stdev: 46.102177

second angle mean: 145.48055

second angle stdev: 22.561914

168.85 165.82

173.35 178.97

first angle mean: 89.17982

first angle stdev: 46.511013

second angle mean: 145.72717

second angle stdev: 22.613003

166.83 165.06

161.22 178.95

first angle mean: 89.86096

first angle stdev: 46.869232

second angle mean: 145.86308

second angle stdev: 22.559908

165.15 160.25

155.16 179.34

first angle mean: 90.51565

first angle stdev: 47.185646

second angle mean: 145.94392

second angle stdev: 22.478186

168.6 160.93

166.9 179.14

first angle mean: 91.18879

first angle stdev: 47.53315

second angle mean: 146.12457

second angle stdev: 22.464779

169.34 161.58

175.39 179.03

first angle mean: 91.85674

first angle stdev: 47.87321

second angle mean: 146.37471

second angle stdev: 22.530212

163.18 157.68

178.67 178.94

first angle mean: 92.461174

first angle stdev: 48.11618

second angle mean: 146.6484

second angle stdev: 22.629023

157.86 151.64

178.01 178.98

first angle mean: 93.01075

first angle stdev: 48.28407

second angle mean: 146.91194

second angle stdev: 22.714869

152.05 147.29

178.41 178.98

first angle mean: 93.502754

first angle stdev: 48.38107

second angle mean: 147.17441

second angle stdev: 22.800535

145.66 145.87

179.06 179.02

first angle mean: 93.93381

first angle stdev: 48.411568

second angle mean: 147.43794

second angle stdev: 22.888882

141.43 144.74

170.65 179.29

first angle mean: 94.32311

first angle stdev: 48.40257

second angle mean: 147.6282

second angle stdev: 22.89076

139.34 145.82

161.71 170.1

first angle mean: 94.6891

first angle stdev: 48.374615

second angle mean: 147.74269

second angle stdev: 22.832561

135.92 146.04

155.45 147.71

first angle mean: 95.021614

first angle stdev: 48.320087

second angle mean: 147.80484

second angle stdev: 22.750755

130.47 143.72

161.09 140.52

first angle mean: 95.3052

first angle stdev: 48.229908

second angle mean: 147.91112

second angle stdev: 22.690454

118.97 139.4

177.41 138.16

first angle mean: 95.49301

first angle stdev: 48.08401

second angle mean: 148.14525

second angle stdev: 22.751307

109.77 138.55

178.01 128.29

first angle mean: 95.60542

first angle stdev: 47.910954

second angle mean: 148.3804

second angle stdev: 22.814774

104.84 133.31

178.55 124.25

first angle mean: 95.67758

first angle stdev: 47.730354

second angle mean: 148.61609

second angle stdev: 22.88018

102.36 132.9

179.17 115.45

first angle mean: 95.72938

first angle stdev: 47.548607

second angle mean: 148.85295

second angle stdev: 22.948315

120.21 115.31

125.72 104.8

first angle mean: 95.917694

first angle stdev: 47.413643

second angle mean: 148.675

second angle stdev: 22.94905

96.3 94.49

90.67 123.05

first angle mean: 95.92061

first angle stdev: 47.232334

second angle mean: 148.23221

second angle stdev: 23.412098

68.29 79.18

84.55 142.03

first angle mean: 95.71129

first angle stdev: 47.11404

second angle mean: 147.74976

second angle stdev: 23.96798

41.35 53.33

98.47 135.95

first angle mean: 95.30256

first angle stdev: 47.170914

second angle mean: 147.37924

second angle stdev: 24.254211

28.58 37.49

137.18 137.39

first angle mean: 94.80463

first angle stdev: 47.344116

second angle mean: 147.30313

second angle stdev: 24.17948

35.78 34.49

151.5 136.99

first angle mean: 94.3674

first angle stdev: 47.439198

second angle mean: 147.33421

second angle stdev: 24.09245

33.8 36.31

151.22 148.1

first angle mean: 93.92206

first angle stdev: 47.54687

second angle mean: 147.3628

second angle stdev: 24.006008

35.84 43.56

142.44 152.27

first angle mean: 93.4981

first angle stdev: 47.63033

second angle mean: 147.32687

second angle stdev: 23.921904

49.64 53.63

142.13 150.9

first angle mean: 93.18028

first angle stdev: 47.603004

second angle mean: 147.2892

second angle stdev: 23.839148

58.71 62.22

131.11 152.81

first angle mean: 92.932304

first angle stdev: 47.520844

second angle mean: 147.1728

second angle stdev: 23.792564

robot count: 3

72.89 83.34

138.88 128.21

first angle mean: 92.78913

first angle stdev: 47.380894

second angle mean: 147.11357

second angle stdev: 23.717722

90.86 92.79

163.33 112.11

first angle mean: 92.77546

first angle stdev: 47.212856

second angle mean: 147.22859

second angle stdev: 23.672611

100.76 104.7

168.35 152.28

first angle mean: 92.83169

first angle stdev: 47.051056

second angle mean: 147.37732

second angle stdev: 23.65514

101.61 113.07

163.82 158.63

first angle mean: 92.89307

first angle stdev: 46.891956

second angle mean: 147.49231

second angle stdev: 23.612074

105.1 120.69

159.14 149.29

first angle mean: 92.977844

first angle stdev: 46.739853

second angle mean: 147.57318

second angle stdev: 23.54982

111.16 123.97

158.47 149.78

first angle mean: 93.10324

first angle stdev: 46.6027

second angle mean: 147.64833

second angle stdev: 23.485792

116.18 125.52

156.84 151.45

first angle mean: 93.26131

first angle stdev: 46.481808

second angle mean: 147.71129

second angle stdev: 23.417496

120.37 126.48

153.66 151.88

first angle mean: 93.44571

first angle stdev: 46.377

second angle mean: 147.75175

second angle stdev: 23.34283

122.6 126.42

152.14 152.29

first angle mean: 93.6427

first angle stdev: 46.281723

second angle mean: 147.7814

second angle stdev: 23.266615

126.53 125.78

151.83 151.44

first angle mean: 93.86343

first angle stdev: 46.204247

second angle mean: 147.80858

second angle stdev: 23.190762

127.85 126.2

152.55 149.76

first angle mean: 94.09

first angle stdev: 46.132954

second angle mean: 147.84018

second angle stdev: 23.11655

126.48 126.66

157.33 149.85

first angle mean: 94.304504

first angle stdev: 46.054928

second angle mean: 147.90305

second angle stdev: 23.052732

124.65 126.72

160.05 149.86

first angle mean: 94.504135

first angle stdev: 45.96869

second angle mean: 147.98296

second angle stdev: 22.997751

122.03 125.63

160.93 151.7

first angle mean: 94.68405

first angle stdev: 45.87188

second angle mean: 148.06758

second angle stdev: 22.9462

118.95 124.13

159.27 150.49

first angle mean: 94.84162

first angle stdev: 45.76422

second angle mean: 148.14032

second angle stdev: 22.88927

114.92 119.23

162.15 150.46

first angle mean: 94.97115

first angle stdev: 45.644672

second angle mean: 148.2307

second angle stdev: 22.84287

110.32 115.02

163.63 153.5

first angle mean: 95.06955

first angle stdev: 45.514626

second angle mean: 148.32942

second angle stdev: 22.802681

106.3 112.41

164.66 159.43

first angle mean: 95.14108

first angle stdev: 45.378242

second angle mean: 148.43343

second angle stdev: 22.767042

96.93 106.11

163.66 176.26

first angle mean: 95.152405

first angle stdev: 45.23463

second angle mean: 148.5298

second angle stdev: 22.726982

93.15 95.38

169.44 169.08

first angle mean: 95.13982

first angle stdev: 45.092438

second angle mean: 148.66132

second angle stdev: 22.715628

85.83 83.97

168.58 158.82

first angle mean: 95.08162

first angle stdev: 44.957294

second angle mean: 148.78581

second angle stdev: 22.698877

76.87 79.6

167.06 166.84

first angle mean: 94.968506

first angle stdev: 44.840286

second angle mean: 148.8993

second angle stdev: 22.673775

67.6 72.14

164.54 165.62

first angle mean: 94.79956

first angle stdev: 44.753048

second angle mean: 148.99585

second angle stdev: 22.636858

56.49 60.52

125.39 148.15

first angle mean: 94.56454

first angle stdev: 44.715733

second angle mean: 148.85103

second angle stdev: 22.642466

48.05 51.73

107.27 133.79

first angle mean: 94.280914

first angle stdev: 44.726017

second angle mean: 148.59749

second angle stdev: 22.804241

32.4 43.02

124.03 140.92

first angle mean: 93.905876

first angle stdev: 44.848186

second angle mean: 148.44861

second angle stdev: 22.814856

26.0 37.13

139.4 151.91

first angle mean: 93.4968

first angle stdev: 45.020596

second angle mean: 148.39409

second angle stdev: 22.756805

25.84 33.44

146.18 153.06

first angle mean: 93.091675

first angle stdev: 45.188084

second angle mean: 148.38083

second angle stdev: 22.689213

24.57 32.88

145.6 150.87

first angle mean: 92.68381

first angle stdev: 45.36067

second angle mean: 148.36429

second angle stdev: 22.622595

32.51 37.69

145.4 146.23

first angle mean: 92.32775

first angle stdev: 45.46112

second angle mean: 148.34676

second angle stdev: 22.556711

38.38 42.61

141.03 143.59

first angle mean: 92.01041

first angle stdev: 45.514565

second angle mean: 148.30371

second angle stdev: 22.497229

45.13 50.41

119.97 139.37

first angle mean: 91.73625

first angle stdev: 45.521843

second angle mean: 148.13802

second angle stdev: 22.535145

53.93 67.16

130.85 146.89

first angle mean: 91.51645

first angle stdev: 45.48024

second angle mean: 148.03749

second angle stdev: 22.50795

77.82 81.76

163.54 157.32

first angle mean: 91.43728

first angle stdev: 45.360485

second angle mean: 148.1271

second angle stdev: 22.473553

95.82 88.36

178.21 157.26

first angle mean: 91.46247

first angle stdev: 45.231163

second angle mean: 148.3

second angle stdev: 22.523966

100.36 95.66

174.19 161.14

first angle mean: 91.51331

first angle stdev: 45.106735

second angle mean: 148.44795

second angle stdev: 22.544142

102.78 105.47

166.37 169.28

first angle mean: 91.577324

first angle stdev: 44.986378

second angle mean: 148.54977

second angle stdev: 22.52033

105.87 114.51

164.7 172.3

first angle mean: 91.65807

first angle stdev: 44.87191

second angle mean: 148.64102

second angle stdev: 22.489225

110.07 122.49

164.08 171.34

first angle mean: 91.76151

first angle stdev: 44.76684

second angle mean: 148.72775

second angle stdev: 22.455633

114.73 127.55

158.12 167.25

first angle mean: 91.88984

first angle stdev: 44.67443

second angle mean: 148.78023

second angle stdev: 22.403759

119.25 129.25

149.54 161.06

first angle mean: 92.04184

first angle stdev: 44.596558

second angle mean: 148.78444

second angle stdev: 22.34151

122.08 128.61

143.62 154.47

first angle mean: 92.20779

first angle stdev: 44.528893

second angle mean: 148.75592

second angle stdev: 22.282999

121.99 127.53

142.52 149.76

first angle mean: 92.37144

first angle stdev: 44.46093

second angle mean: 148.72165

second angle stdev: 22.226477

119.89 126.84

142.55 148.63

first angle mean: 92.521805

first angle stdev: 44.38567

second angle mean: 148.68793

second angle stdev: 22.170334

118.45 126.94

142.67 148.73

first angle mean: 92.66271

first angle stdev: 44.30592

second angle mean: 148.65521

second angle stdev: 22.114433

117.8 125.55

145.1 149.28

first angle mean: 92.798584

first angle stdev: 44.224438

second angle mean: 148.636

second angle stdev: 22.056124

118.57 124.67

145.58 149.71

first angle mean: 92.93714

first angle stdev: 44.145638

second angle mean: 148.61957

second angle stdev: 21.997889

118.91 123.19

148.1 149.55

first angle mean: 93.076035

first angle stdev: 44.068172

second angle mean: 148.61679

second angle stdev: 21.939024

119.29 121.62

151.64 149.08

first angle mean: 93.21548

first angle stdev: 43.992157

second angle mean: 148.63286

second angle stdev: 21.881702

118.59 120.33

153.65 150.42

first angle mean: 93.34973

first angle stdev: 43.91422

second angle mean: 148.65941

second angle stdev: 21.826773

114.84robot count: 4

116.84

157.1 156.69

first angle mean: 93.46284

first angle stdev: 43.8261

second angle mean: 148.70383

second angle stdev: 21.777822

111.38 114.85

158.53 160.46

first angle mean: 93.55665

first angle stdev: 43.73034

second angle mean: 148.75528

second angle stdev: 21.732311

108.29 112.6

162.04 162.31

first angle mean: 93.633385

first angle stdev: 43.6292

second angle mean: 148.82448

second angle stdev: 21.696726

101.26 107.8

162.82 163.62

first angle mean: 93.6729

first angle stdev: 43.51947

second angle mean: 148.897

second angle stdev: 21.66376

94.79 102.06

162.44 167.72

first angle mean: 93.67866

first angle stdev: 43.407234

second angle mean: 148.96681

second angle stdev: 21.629604

89.5 89.81

167.9 166.28

first angle mean: 93.657234

first angle stdev: 43.29682

second angle mean: 149.0639

second angle stdev: 21.616417

86.7 80.35

175.9 163.48

first angle mean: 93.621735

first angle stdev: 43.18907

second angle mean: 149.20082

second angle stdev: 21.645811

78.96 71.65

173.36 159.09

first angle mean: 93.54731

first angle stdev: 43.09192

second angle mean: 149.32347

second angle stdev: 21.658958

68.56 69.09

161.48 162.04

first angle mean: 93.421104

first angle stdev: 43.01944

second angle mean: 149.38486

second angle stdev: 21.621374

59.35 63.07

158.73 163.29

first angle mean: 93.24989

first angle stdev: 42.97879

second angle mean: 149.43182

second angle stdev: 21.5771

53.31 61.82

142.86 162.09

first angle mean: 93.05019

first angle stdev: 42.96367

second angle mean: 149.39896

second angle stdev: 21.528082

44.5 56.16

129.43 131.35

first angle mean: 92.808655

first angle stdev: 42.99258

second angle mean: 149.2996

second angle stdev: 21.520376

37.4 50.26

109.29 110.4

first angle mean: 92.53436

first angle stdev: 43.061985

second angle mean: 149.10155

second angle stdev: 21.649923

36.21 42.64

103.38 124.13

first angle mean: 92.2569

first angle stdev: 43.13642

second angle mean: 148.87631

second angle stdev: 21.832483

29.46 36.61

121.16 129.93

first angle mean: 91.949066

first angle stdev: 43.2535

second angle mean: 148.74045

second angle stdev: 21.864765

33.19 38.76

146.26 148.1

first angle mean: 91.662445

first angle stdev: 43.34166

second angle mean: 148.72833

second angle stdev: 21.812057

38.12 45.14

147.98 156.79

first angle mean: 91.402534

first angle stdev: 43.39619

second angle mean: 148.7247

second angle stdev: 21.759111

41.84 46.7

147.78 153.79

first angle mean: 91.1631

first angle stdev: 43.427425

second angle mean: 148.72015

second angle stdev: 21.706589

45.61 50.5

134.41 145.86

first angle mean: 90.944084

first angle stdev: 43.43734

second angle mean: 148.65135

second angle stdev: 21.67696

55.61 71.32

135.91 153.7

first angle mean: 90.775024

first angle stdev: 43.40184

second angle mean: 148.5904

second angle stdev: 21.642904

68.07 89.16

145.65 155.56

first angle mean: 90.66691

first angle stdev: 43.326584

second angle mean: 148.57637

second angle stdev: 21.59226

84.15 92.68

153.74 134.44

first angle mean: 90.63602

first angle stdev: 43.22611

second angle mean: 148.60085

second angle stdev: 21.543953

96.6 89.0

164.72 130.52

first angle mean: 90.664154

first angle stdev: 43.125977

second angle mean: 148.67688

second angle stdev: 21.52144

103.65 98.22

167.24 155.1

first angle mean: 90.72511

first angle stdev: 43.03378

second angle mean: 148.76404

second angle stdev: 21.508326

108.2 107.71

165.54 168.74

first angle mean: 90.80678

first angle stdev: 42.949654

second angle mean: 148.84242

second angle stdev: 21.488491

112.64 117.92

161.38 167.99

first angle mean: 90.90832

first angle stdev: 42.875397

second angle mean: 148.90074

second angle stdev: 21.455425

116.65 124.06

158.84 162.0

first angle mean: 91.0275

first angle stdev: 42.81171

second angle mean: 148.94676

second angle stdev: 21.416334

121.13 128.93

155.07 156.63

first angle mean: 91.16622

first angle stdev: 42.76158

second angle mean: 148.97498

second angle stdev: 21.370956

122.72 132.83

149.66 152.58

first angle mean: 91.31096

first angle stdev: 42.71664

second angle mean: 148.97812

second angle stdev: 21.321932

125.54 134.86

146.04 148.53

first angle mean: 91.467255

first angle stdev: 42.681435

second angle mean: 148.9647

second angle stdev: 21.274118

129.34 136.14

146.54 146.63

first angle mean: 91.6394

first angle stdev: 42.660454

second angle mean: 148.95367

second angle stdev: 21.226341

135.38 137.87

148.72 144.06

first angle mean: 91.837326

first angle stdev: 42.664948

second angle mean: 148.95264

second angle stdev: 21.178267

counter:3

141.81 142.4

152.51 148.38

first angle mean: 92.06243

first angle stdev: 42.700073

second angle mean: 148.96864

second angle stdev: 21.131859

136.8 143.36

151.59 150.99

first angle mean: 92.26304

first angle stdev: 42.708958

second angle mean: 148.9804

second angle stdev: 21.085152

134.4 133.84

154.22 145.07

first angle mean: 92.45116

first angle stdev: 42.706005

second angle mean: 149.0038

second angle stdev: 21.040934

139.19 135.35

154.79 140.77

first angle mean: 92.65889

first angle stdev: 42.724266

second angle mean: 149.02951

second angle stdev: 20.997652

141.06 137.87

152.35 144.17

first angle mean: 92.87305

first angle stdev: 42.75051

second angle mean: 149.04419

second angle stdev: 20.952305

138.17 137.42

151.38 149.49

first angle mean: 93.0726

first angle stdev: 42.761593

second angle mean: 149.05447

second angle stdev: 20.906675

132.5 132.56

148.17 151.56

first angle mean: 93.24553

first angle stdev: 42.747185

second angle mean: 149.05061

second angle stdev: 20.860859

128.95 128.37

145.62 150.57

first angle mean: 93.40144

first angle stdev: 42.718674

second angle mean: 149.03561

second angle stdev: 20.81649

124.7 126.9

145.75 152.93

first angle mean: 93.53751

first angle stdev: 42.67542

second angle mean: 149.02133

second angle stdev: 20.772312

118.38 126.26

145.45 157.41

first angle mean: 93.645065

first angle stdev: 42.614166

second angle mean: 149.00589

second angle stdev: 20.728628

112.45 121.61

149.91 158.77

first angle mean: 93.72612

first angle stdev: 42.540073

second angle mean: 149.0098

second angle stdev: 20.683992

105.58 115.77

157.93 162.87

first angle mean: 93.77699

first angle stdev: 42.455757

second angle mean: 149.04808

second angle stdev: 20.647793

97.43 105.75

165.76 168.88

first angle mean: 93.7926

first angle stdev: 42.365612

second angle mean: 149.11949

second angle stdev: 20.632446

88.71 91.45

168.85 164.78

first angle mean: 93.77098

first angle stdev: 42.276672

second angle mean: 149.20346

second angle stdev: 20.628523

76.6 77.41

161.45 154.86

first angle mean: 93.69821

first angle stdev: 42.201748

second angle mean: 149.25533

second angle stdev: 20.600136

65.13 70.35

159.32 163.3

first angle mean: 93.577675

first angle stdev: 42.153316

second angle mean: 149.29779

second angle stdev: 20.566978

57.04 68.55

152.42 174.06

first angle mean: 93.42416

first angle stdev: 42.13101

second angle mean: 149.31093

second angle stdev: 20.52472

51.49 61.65

129.38 166.18

first angle mean: 93.248695

first angle stdev: 42.129818

second angle mean: 149.22754

second angle stdev: 20.522102

robot count: 543.95

50.52

130.47 145.38

first angle mean: 93.0433

first angle stdev: 42.16172

second angle mean: 149.14938

second angle stdev: 20.514915

34.57 45.06

136.17 141.91

first angle mean: 92.80067

first angle stdev: 42.24172

second angle mean: 149.09552

second angle stdev: 20.489304

34.27 40.87

143.4 142.42

first angle mean: 92.55881

first angle stdev: 42.32124

second angle mean: 149.07199

second angle stdev: 20.450191

31.86 38.12

145.08 145.27

first angle mean: 92.30901

first angle stdev: 42.412457

second angle mean: 149.05556

second angle stdev: 20.409668

30.88 39.88

142.93 150.04

first angle mean: 92.05726

first angle stdev: 42.507008

second angle mean: 149.03046

second angle stdev: 20.371561

33.96 44.83

127.63 145.49

first angle mean: 91.82012

first angle stdev: 42.581585

second angle mean: 148.94312

second angle stdev: 20.375679

30.34 59.75

106.22 143.67

first angle mean: 91.5702

first angle stdev: 42.674625

second angle mean: 148.76944

second angle stdev: 20.515121

38.16 71.89

116.23 144.87

first angle mean: 91.353966

first angle stdev: 42.722977

second angle mean: 148.6377

second angle stdev: 20.577553

77.59 82.36

149.72 128.1

first angle mean: 91.29847

first angle stdev: 42.645676

second angle mean: 148.64206

second angle stdev: 20.536139

96.9 101.26

156.8 127.73

first angle mean: 91.32096

first angle stdev: 42.56143

second angle mean: 148.67482

second angle stdev: 20.501352

99.96 109.7

156.01 135.28

first angle mean: 91.355515

first angle stdev: 42.47972

second angle mean: 148.70416

second angle stdev: 20.465546

103.9 110.82

161.84 147.12

first angle mean: 91.405495

first angle stdev: 42.40238

second angle mean: 148.75648

second angle stdev: 20.441494

110.45 116.49

161.89 155.65

first angle mean: 91.48107

first angle stdev: 42.335102

second angle mean: 148.80861

second angle stdev: 20.417597

114.87 120.84

159.57 157.99

first angle mean: 91.57352

first angle stdev: 42.276833

second angle mean: 148.85115

second angle stdev: 20.38839

120.5 126.87

157.1 156.64

first angle mean: 91.6874

first angle stdev: 42.23239

second angle mean: 148.8836

second angle stdev: 20.35477

123.27 128.5

158.64 152.52

first angle mean: 91.81126

first angle stdev: 42.195698

second angle mean: 148.92188

second angle stdev: 20.323969

127.67 131.23

157.37 151.17

first angle mean: 91.951324

first angle stdev: 42.172565

second angle mean: 148.95488

second angle stdev: 20.291079

131.95 133.3

158.82 149.03

first angle mean: 92.106964

first angle stdev: 42.164036

second angle mean: 148.99327

second angle stdev: 20.260876

counter:4

133.19 136.13

152.13 146.14

first angle mean: 92.2662

first angle stdev: 42.159595

second angle mean: 149.00542

second angle stdev: 20.22251

132.88 136.37

148.42 146.39

first angle mean: 92.42301

first angle stdev: 42.153446

second angle mean: 149.00317

second angle stdev: 20.183466

133.8 139.27

149.13 149.42

first angle mean: 92.58215

first angle stdev: 42.150185

second angle mean: 149.00365

second angle stdev: 20.144617

132.03 139.46

150.91 152.13

first angle mean: 92.7333

first angle stdev: 42.139893

second angle mean: 149.01096

second angle stdev: 20.106333

129.19 134.59

157.7 152.21

first angle mean: 92.872444

first angle stdev: 42.119427

second angle mean: 149.04411

second angle stdev: 20.075077

126.52 130.76

159.42 154.33

first angle mean: 93.00038

first angle stdev: 42.090252

second angle mean: 149.08357

second angle stdev: 20.047049

124.99 128.44

157.25 155.06

first angle mean: 93.12155

first angle stdev: 42.056393

second angle mean: 149.1145

second angle stdev: 20.015333

121.86 126.88

154.59 152.58

first angle mean: 93.229996

first angle stdev: 42.013935

second angle mean: 149.13518

second angle stdev: 19.980352

117.01 122.08

155.65 152.47

first angle mean: 93.319405

first angle stdev: 41.960133

second angle mean: 149.15965

second angle stdev: 19.946743

113.88 118.19

159.41 155.85

first angle mean: 93.3964

first angle stdev: 41.900307

second angle mean: 149.19804

second angle stdev: 19.919199

108.47 113.02

162.57 165.32

first angle mean: 93.45265

first angle stdev: 41.83216

second angle mean: 149.24794

second angle stdev: 19.89871

99.53 103.99

165.08 174.05

first angle mean: 93.47524

first angle stdev: 41.75597

second angle mean: 149.30681

second angle stdev: 19.885046

93.54 95.8

165.68 173.52

first angle mean: 93.47548

first angle stdev: 41.678574

second angle mean: 149.36745

second angle stdev: 19.873093

82.79 81.82

167.11 166.94

first angle mean: 93.43605

first angle stdev: 41.606647

second angle mean: 149.43292

second angle stdev: 19.865543

72.97 76.12

166.52 174.89

first angle mean: 93.36081

first angle stdev: 41.54856

second angle mean: 149.49573

second angle stdev: 19.855942

61.7 70.88

155.31 179.9

first angle mean: 93.24484

first angle stdev: 41.51648

second angle mean: 149.51703

second angle stdev: 19.822653

54.72 65.08

136.31 173.59

first angle mean: 93.10424

first angle stdev: 41.505714

second angle mean: 149.46884

second angle stdev: 19.80247

47.28 56.1

135.02 160.01

first angle mean: 92.93761

first angle stdev: 41.521896

second angle mean: 149.41629

second angle stdev: 19.785555

39.02 49.36

143.15 157.47

first angle mean: 92.74225

first angle stdev: 41.57302

second angle mean: 149.39359

second angle stdev: 19.753267

32.08 43.67

143.86 155.61

first angle mean: 92.523254

first angle stdev: 41.657097

second angle mean: 149.37361

second angle stdev: 19.720373

31.56 40.79

144.49 151.23

first angle mean: 92.30396

first angle stdev: 41.74197

second angle mean: 149.35605

second angle stdev: 19.687044

35.49 41.5

141.79 141.31

first angle mean: 92.100334

first angle stdev: 41.805202

second angle mean: 149.32892

second angle stdev: 19.65693

41.01 48.77

127.9 135.31

first angle mean: 91.917854

first angle stdev: 41.841633

second angle mean: 149.25238

second angle stdev: 19.663397

75.99 74.14

87.43 148.26

first angle mean: 91.861176

first angle stdev: 41.77788

second angle mean: 149.03238

second angle stdev: 19.970633

98.67 96.52

85.17 151.54

first angle mean: 91.88532

first angle stdev: 41.705708

second angle mean: 148.80592

second angle stdev: 20.293425

128.39 102.85

114.29 152.08

first angle mean: 92.01431

first angle stdev: 41.68827

second angle mean: 148.68396

second angle stdev: 20.360813

151.65 98.34

130.91 148.55

first angle mean: 92.2243

first angle stdev: 41.76447

second angle mean: 148.62137

second angle stdev: 20.352184

137.73 108.97

159.57 160.16

first angle mean: 92.383965

first angle stdev: 41.777878

second angle mean: 148.65979

second angle stdev: 20.326761

121.47 115.31

176.24 172.5

first angle mean: 92.485664

first angle stdev: 41.7401

second angle mean: 148.75623

second angle stdev: 20.356396

robot count: 6128.94

122.47

179.31 167.56

first angle mean: 92.612686

first angle stdev: 41.722652

second angle mean: 148.86269

second angle stdev: 20.400501

136.96 128.31

174.24 165.57

first angle mean: 92.76667

first angle stdev: 41.73177

second angle mean: 148.95079

second angle stdev: 20.419691

146.35 132.68

166.58 163.22

first angle mean: 92.95207

first angle stdev: 41.77816

second angle mean: 149.01178

second angle stdev: 20.4106

counter:5

152.24 134.33

166.37 151.5

first angle mean: 93.15652

first angle stdev: 41.85063

second angle mean: 149.07164

second angle stdev: 20.400772

151.35 132.96

162.5 151.07

first angle mean: 93.3565

first angle stdev: 41.917225

second angle mean: 149.1178

second angle stdev: 20.380844

152.4 133.17

158.02 152.09

first angle mean: 93.5587

first angle stdev: 41.987312

second angle mean: 149.14827

second angle stdev: 20.352562

151.44 133.17

161.49 154.89

first angle mean: 93.75625

first angle stdev: 42.05131

second angle mean: 149.1904

second angle stdev: 20.330547

152.42 130.57

162.42 155.2

first angle mean: 93.95578

first angle stdev: 42.11845

second angle mean: 149.2354

second angle stdev: 20.31055

149.58 128.75

161.86 157.06

first angle mean: 94.14434

first angle stdev: 42.17112

second angle mean: 149.2782

second angle stdev: 20.289371

146.18 127.26

158.24 158.15

first angle mean: 94.32014

first angle stdev: 42.207962

second angle mean: 149.30847

second angle stdev: 20.261744

141.36 124.64

154.83 161.3

first angle mean: 94.47852

first angle stdev: 42.22486

second angle mean: 149.32706

second angle stdev: 20.230133

135.05 122.81

155.78 165.26

first angle mean: 94.61466

first angle stdev: 42.2192

second angle mean: 149.34872

second angle stdev: 20.199608

123.89 119.2

165.23 169.2

first angle mean: 94.71257

first angle stdev: 42.182415

second angle mean: 149.40184

second angle stdev: 20.186636

114.01 114.34

177.05 172.97

first angle mean: 94.7769

first angle stdev: 42.12674

second angle mean: 149.494

second angle stdev: 20.215874

104.26 101.85

177.83 168.51

first angle mean: 94.808395

first angle stdev: 42.060246

second angle mean: 149.58813

second angle stdev: 20.248024

96.84 87.28

177.95 157.67

first angle mean: 94.815125

first angle stdev: 41.99071

second angle mean: 149.68204

second angle stdev: 20.280031

99.09 80.8

156.82 161.18

first angle mean: 94.82923

first angle stdev: 41.92208

second angle mean: 149.7056

second angle stdev: 20.250675

79.45 74.54

179.25 167.24

first angle mean: 94.77865

first angle stdev: 41.862335

second angle mean: 149.80278

second angle stdev: 20.287994

64.81 60.88

174.25 130.06

first angle mean: 94.68039

first angle stdev: 41.828754

second angle mean: 149.88293

second angle stdev: 20.302866

52.42 58.04

177.85 98.28

first angle mean: 94.54228

first angle stdev: 41.82994

second angle mean: 149.97433

second angle stdev: 20.332413

47.05 55.15

179.37 98.69

first angle mean: 94.38758

first angle stdev: 41.849346

second angle mean: 150.0701

second angle stdev: 20.368256

44.7 41.31

179.31 119.78

first angle mean: 94.226265

first angle stdev: 41.876854

second angle mean: 150.16502

second angle stdev: 20.403082

45.73 40.97

178.84 139.75

first angle mean: 94.06932

first angle stdev: 41.899673

second angle mean: 150.25783

second angle stdev: 20.435043

49.61 46.96

178.47 148.07

first angle mean: 93.92591

first angle stdev: 41.907932

second angle mean: 150.34883

second angle stdev: 20.464682

55.41 54.07

178.45 127.0

first angle mean: 93.80206

first angle stdev: 41.89728

second angle mean: 150.43918

second angle stdev: 20.493597

68.26 69.8

178.5 159.72

first angle mean: 93.72019

first angle stdev: 41.854996

second angle mean: 150.52913

second angle stdev: 20.522112

85.25 81.23

179.19 172.18

first angle mean: 93.69313

first angle stdev: 41.790813

second angle mean: 150.62071

second angle stdev: 20.553041

101.53 86.31

179.9 156.3

first angle mean: 93.71809

first angle stdev: 41.72655

second angle mean: 150.71394

second angle stdev: 20.586493

109.72 99.31

179.19 159.65

first angle mean: 93.76888

first angle stdev: 41.66999

second angle mean: 150.80435

second angle stdev: 20.61612

115.32 108.53

179.13 165.74

first angle mean: 93.83709

first angle stdev: 41.621605

second angle mean: 150.89398

second angle stdev: 20.644863

120.63 116.98

179.51 168.16

first angle mean: 93.9216

first angle stdev: 41.583057

second angle mean: 150.98427

second angle stdev: 20.674644

131.84 124.37

175.15 169.38

first angle mean: 94.04084

first angle stdev: 41.57187

second angle mean: 151.06026

second angle stdev: 20.686405

137.68 126.12

169.87 165.68

first angle mean: 94.17764

first angle stdev: 41.578285

second angle mean: 151.11922

second angle stdev: 20.680706

145.66 126.94

161.99 160.05

first angle mean: 94.338524

first angle stdev: 41.612595

second angle mean: 151.15318

second angle stdev: 20.657278

148.52 124.01

158.34 157.15

first angle mean: 94.50732

first angle stdev: 41.6573

second angle mean: 151.17557

second angle stdev: 20.628965

149.71 124.22

158.91 157.43

first angle mean: 94.67876

first angle stdev: 41.705822

second angle mean: 151.1996

second angle stdev: 20.601402

149.21 125.83

161.09 156.66

first angle mean: 94.84758

first angle stdev: 41.75127

second angle mean: 151.23021

second angle stdev: 20.576826

147.59 126.48

163.9 154.84

first angle mean: 95.01037

first angle stdev: 41.789326

second angle mean: 151.26932

second angle stdev: 20.557064

146.62 126.82

163.69 153.76

first angle mean: 95.169174

first angle stdev: 41.822773

second angle mean: 151.30754

second angle stdev: 20.536938

144.75 124.04

164.2 155.03

first angle mean: 95.32126

first angle stdev: 41.8485

second angle mean: 151.34708

second angle stdev: 20.517805

144.68 122.37

161.68 156.12

first angle mean: 95.472206

first angle stdev: 41.873245

second angle mean: 151.37868

second angle stdev: 20.49435

142.62 118.6

154.7 159.07

first angle mean: 95.615944

first angle stdev: 41.890087

second angle mean: 151.38881

second angle stdev: 20.463905

132.12 116.67

156.85 165.01

first angle mean: 95.7269

first angle stdev: 41.87462

second angle mean: 151.40541

second angle stdev: 20.434994

120.9 113.17

167.08 170.13

first angle mean: 95.803185

first angle stdev: 41.83401

second angle mean: 151.45291

second angle stdev: 20.42219

107.05 107.38

178.23 177.81

first angle mean: 95.83715

first angle stdev: 41.77533

second angle mean: 151.5338

second angle stdev: 20.444204

99.84 97.67

177.59 167.38

first angle mean: 95.84921

first angle stdev: 41.712944

second angle mean: 151.61229

second angle stdev: 20.463266

92.21 86.1

176.72 159.02

first angle mean: 95.83829

first angle stdev: 41.650745

second angle mean: 151.68768

second angle stdev: 20.478651

84.0 robot count: 7

74.56

177.5 148.94

first angle mean: 95.80284

first angle stdev: 41.593376

second angle mean: 151.76497

second angle stdev: 20.496548

70.66 76.72

178.43 152.1

first angle mean: 95.72778

first angle stdev: 41.553894

second angle mean: 151.84456

second angle stdev: 20.517567

60.99 69.88

178.65 128.84

first angle mean: 95.6244

first angle stdev: 41.535137

second angle mean: 151.92435

second angle stdev: 20.538982

50.51 56.24

178.66 101.99

first angle mean: 95.49053

first angle stdev: 41.545998

second angle mean: 152.00368

second angle stdev: 20.559978

42.31 40.44

178.47 126.58

first angle mean: 95.33318

first angle stdev: 41.584923

second angle mean: 152.08197

second angle stdev: 20.579805

45.91 41.35

178.28 139.32

first angle mean: 95.18739

first angle stdev: 41.60996

second angle mean: 152.15926

second angle stdev: 20.598488

47.93 43.44

178.19 146.17

first angle mean: 95.0484

first angle stdev: 41.627464

second angle mean: 152.23582

second angle stdev: 20.61642

54.39 49.25

178.32 109.1

first angle mean: 94.92917

first angle stdev: 41.624485

second angle mean: 152.31232

second angle stdev: 20.63443

60.94 69.84

178.48 101.72

first angle mean: 94.829796

first angle stdev: 41.604084

second angle mean: 152.38882

second angle stdev: 20.65263

72.16 89.02

178.67 124.56

first angle mean: 94.7637

first angle stdev: 41.561367

second angle mean: 152.46545

second angle stdev: 20.671127

102.05 122.07

162.44 134.78

first angle mean: 94.78488

first angle stdev: 41.50277

second angle mean: 152.49445

second angle stdev: 20.648043

116.1 113.81

171.75 177.63

first angle mean: 94.84666

first angle stdev: 41.458416

second angle mean: 152.55026

second angle stdev: 20.644066

122.39 112.7

177.74 176.39

first angle mean: 94.92627

first angle stdev: 41.42486

second angle mean: 152.62306

second angle stdev: 20.658516

124.9 128.4

178.83 179.81

first angle mean: 95.01265

first angle stdev: 41.396317

second angle mean: 152.6986

second angle stdev: 20.676508

130.78 137.93

173.74 169.9

first angle mean: 95.115425

first angle stdev: 41.381115

second angle mean: 152.75905

second angle stdev: 20.677477

136.5 149.99

170.45 158.08

first angle mean: 95.23401

first angle stdev: 41.38095

second angle mean: 152.80975

second angle stdev: 20.669474

140.98 154.74

169.07 152.73

first angle mean: 95.36471

first angle stdev: 41.39387

second angle mean: 152.8562

second angle stdev: 20.658165

146.83 157.75

167.72 153.16

first angle mean: 95.51134

first angle stdev: 41.425785

second angle mean: 152.89854

second angle stdev: 20.643925

150.12 158.6

167.27 154.61

first angle mean: 95.66648

first angle stdev: 41.46888

second angle mean: 152.93936

second angle stdev: 20.628767

154.56 158.73

166.13 159.5

first angle mean: 95.83331

first angle stdev: 41.52824

second angle mean: 152.97675

second angle stdev: 20.611452

158.54 160.48

167.21 163.78

first angle mean: 96.01045

first angle stdev: 41.602875

second angle mean: 153.01695

second angle stdev: 20.596178

160.68 161.61

171.54 162.05

first angle mean: 96.19262

first angle stdev: 41.685383

second angle mean: 153.06912

second angle stdev: 20.590565

162.3 164.11

179.03 161.24

first angle mean: 96.37831

first angle stdev: 41.77357

second angle mean: 153.14204

second angle stdev: 20.607481

163.35 164.91

178.12 172.94

first angle mean: 96.5659

first angle stdev: 41.86492

second angle mean: 153.212

second angle stdev: 20.6209

164.89 166.16

178.39 178.86

first angle mean: 96.75675

first angle stdev: 41.96164

second angle mean: 153.28235

second angle stdev: 20.63491

168.84 167.7

173.13 178.31

first angle mean: 96.95754

first angle stdev: 42.075024

second angle mean: 153.33763

second angle stdev: 20.632683

169.54 168.82

170.2 178.55

first angle mean: 97.15917

first angle stdev: 42.18985

second angle mean: 153.38446

second angle stdev: 20.623112

169.38 169.46

169.3 178.72

first angle mean: 97.35922

first angle stdev: 42.30202

second angle mean: 153.42856

second angle stdev: 20.61151

168.32 168.44

158.55 178.83

first angle mean: 97.55525

first angle stdev: 42.40742

second angle mean: 153.4427

second angle stdev: 20.584776

168.61 166.07

158.28 178.9

first angle mean: 97.75099

first angle stdev: 42.512413

second angle mean: 153.45602

second angle stdev: 20.557966

168.26 162.34

164.18 179.02

first angle mean: 97.9447

first angle stdev: 42.61409

second angle mean: 153.48549

second angle stdev: 20.53738

162.4 156.81

179.3 179.06

first angle mean: 98.121284

first angle stdev: 42.68883

second angle mean: 153.55621

second angle stdev: 20.553568

157.03 153.74

177.74 179.1

first angle mean: 98.28224

first angle stdev: 42.74123

second angle mean: 153.62228

second angle stdev: 20.564253

150.87 150.36

177.45 179.15

first angle mean: 98.42554

first angle stdev: 42.7709

second angle mean: 153.68723

second angle stdev: 20.573746

146.7 147.82

179.77 179.3

first angle mean: 98.5567

first angle stdev: 42.786617

second angle mean: 153.75809

second angle stdev: 20.590591

142.25 148.78

178.26 165.62

first angle mean: 98.67512

first angle stdev: 42.788937

second angle mean: 153.8245

second angle stdev: 20.602089

138.8 148.17

167.11 150.4

first angle mean: 98.78357

first angle stdev: 42.781822

second angle mean: 153.8604

second angle stdev: 20.585787

133.61 143.81

160.63 148.34

first angle mean: 98.87744

first angle stdev: 42.762264

second angle mean: 153.87865

second angle stdev: 20.56102

121.56 135.09

170.88 148.23

first angle mean: 98.938416

first angle stdev: 42.720898

second angle mean: 153.92435

second angle stdev: 20.552227

109.8 114.48

179.77 172.72

first angle mean: 98.96754

first angle stdev: 42.667286

second angle mean: 153.99364

second angle stdev: 20.568123

97.32 94.17

177.88 178.55

first angle mean: 98.96313

first angle stdev: 42.610294

second angle mean: 154.05751

second angle stdev: 20.57761

90.35 85.33

178.4 178.63

first angle mean: 98.94017

first angle stdev: 42.55576

second angle mean: 154.12242

second angle stdev: 20.588463

80.44 79.91

178.38 179.11

first angle mean: 98.89096

first angle stdev: 42.50981

second angle mean: 154.18694

second angle stdev: 20.598986

67.33 65.78

178.46 178.77

first angle mean: 98.807236

first angle stdev: 42.484417

second angle mean: 154.25131

second angle stdev: 20.609497

51.01 48.65

178.61 179.05

first angle mean: 98.680786

first angle stdev: 42.49916

second angle mean: 154.31577

second angle stdev: 20.620216

45.91 43.71

178.59 178.76

first angle mean: 98.54156

first angle stdev: 42.5293

second angle mean: 154.3798

second angle stdev: 20.63061

48.1 44.6

178.52 178.57

first angle mean: 98.40882

first angle stdev: 42.551846

second angle mean: 154.44334

second angle stdev: 20.64053

53.37 52.99

178.39 178.51

first angle mean: 98.2906

first angle stdev: 42.558395

second angle mean: 154.5062

second angle stdev: 20.649805

58.39 59.88

178.28 178.38

first angle mean: 98.18615

first angle stdev: 42.55153

second angle mean: 154.56842

second angle stdev: 20.658504

69.97 73.12

178.5 178.46

first angle mean: 98.11247

first angle stdev: 42.520332

second angle mean: 154.6309

second angle stdev: 20.667633

78.85 86.3

178.65 179.16

first angle mean: 98.06232

first angle stdev: 42.476276

second angle mean: 154.69347

second angle stdev: 20.676971

93.35 105.96

178.72 178.72

first angle mean: 98.05008

first angle stdev: 42.421753

second angle mean: 154.75587

second angle stdev: 20.68628

115.41 128.25

178.92 179.75

first angle mean: 98.095055

first angle stdev: 42.375957

second angle mean: 154.81847

second angle stdev: 20.69595

124.43 130.18

178.95 178.69

first angle mean: 98.1631

first angle stdev: 42.342285

second angle mean: 154.88083

second angle stdev: 20.705467

122.36 134.94

179.06 166.21

first angle mean: 98.225464

first angle stdev: 42.305473

second angle mean: 154.94315

second angle stdev: 20.715076

126.27 143.25

179.21 155.8

first angle mean: 98.29756

first angle stdev: 42.27492

second angle mean: 155.00554

second angle stdev: 20.724894

132.9 150.58

179.39 153.17

first angle mean: 98.38628

first angle stdev: 42.256935

second angle mean: 155.06805

second angle stdev: 20.735008

146.08 157.21

172.86 157.15

first angle mean: 98.50826

first angle stdev: 42.271557

second angle mean: 155.11356

second angle stdev: 20.727964

156.47 160.48

168.76 164.88

first angle mean: 98.65612

first angle stdev: 42.318726

second angle mean: 155.14836

second angle stdev: 20.71295

160.25 162.36

170.7 168.35

first angle mean: 98.81285

first angle stdev: 42.37861

second angle mean: 155.18794

second angle stdev: 20.701412

161.17 161.68

175.78 177.96

first angle mean: 98.97112

first angle stdev: 42.44093

second angle mean: 155.2402

second angle stdev: 20.701069

163.15 161.16

177.74 177.76

first angle mean: 99.13359

first angle stdev: 42.50969

second angle mean: 155.29716

second angle stdev: 20.705742

164.97 162.53

175.57 robot count: 8

177.11

ROBOT: Exercise first angle mean: arms\_up\_and\_down\_stick 99.29985 done

first angle stdev: TRAINING: Exercise 42.584366

arms\_up\_and\_down\_sticksecond angle mean: done

155.34836

second angle stdev: 20.704597

C:\Users\yaels\יעל פרוייקט גמר\zedcheck\Excel.py:287: UserWarning: Starting a Matplotlib GUI outside of the main thread will likely fail.

plt.plot(plot\_data['x'], plot\_data['y'])

Directory created or already exists: Patients/1111/Graphs/arms\_up\_and\_down\_stick/28-06-2024 15-47-51