Tim Kuehn Lab 3 Responses

1. Code attached
2. Code attached
3. {}
4. The robot started at (0, 0) and finished at approximately (87, -128). Since the units are millimeters, this is actually decently close.
5. The SketchGUI estimated the Agent’s position and heading to be (73.5, -128.27) and 0.28, which is approximately 16 degrees. This matched the image as well. The localization particles had not dispersed too widely – they were all essentially contained in the upper half of the arrow.
6. Table 1: Star5

|  |  |  |
| --- | --- | --- |
| Run | Position | Heading |
| 1 | (73.5, -128.7) | 0.28 |
| 2 | (98.52, -183.04) | 0.48 |
| 3 | (17.72, -31.13) | 0.22 |
| 4 | (106.53, -107.17) | 0.38 |
| 5 | (102.29, -89.38) | 0.38 |
| Mean | (79.712, -107.884) | 0.348 |
| Std. Dev. | (36.96048255, 55.48832) | 0.100598 |

Table 2: Circumnavigation

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Run | Position Before | Position After | Heading Before | Heading After |
| 1 | (-24.31, -10.60) | (-258.47, -41.61) | 6.27 | 0.14 |
| 2 | (-198.87, -232.26) | (-378.14, -294.62) | 0.15 | 0.38 |
| 3 | (0.32, -125.9) | (-215.23, -180.0) | 6.23 | 0.22 |
| 4 | (-124.13, -116.03) | (-333.49, -143.43) | 6.03 | .10 |
| 5 | (-181.25, -296.15) | (-360.79, -343.43) | 0.09 | 0.25 |
| Mean | (-105.65, -156.19) | (-309.22, -200.62) | 3.75 | 0.22 |
| Std. Dev. | (90.27, 110.80) | (69.66, 120.64) | 3.32 | 0.11 |