Delmar Moreno

Senior Design EE4391

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GUI Playback Test Report

Introduction:

The following test will test the play back feature of the GUI. A text file containing manually entered coordinates will be read from when using the play back feature and it will display the location on a unit circle to test for accuracy. This will be one for each crew member individually and the results recorded as pass or fail, determining on if the crew member icon is displayed on the proper location of the unit circle.

Setup:

To set up this test, a txt file named testPlayback.txt will need to be in the same directory as the GUI code. In the text file will need to be 3 lines starting with a 'x' and followed by 36 '0's. The 36 '0's will correspond to the location and direction of each of the 4 crew members, where the first set of 3 bits after the 'x' is the distance of that crew member1 from the center. The next set of 3 bits are the crew member1 angle from 0 degrees in the HERA environment or the Azimuth angle. The following 3 bits will represent the observer angle or the direction the crew member is facing. The pattern continues for the rest of the crew members up to crew member4. An example of this format can be seen in Figure 1.
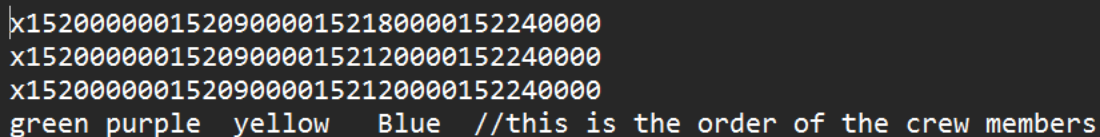


```
x152000000152090000152180000152240000
x152000000152090000152120000152240000
x152000000152090000152120000152240000
green purple  yellow   Blue  //this is the order of the crew members
```

Figure 1- This image is a screenshot of the text file format testPlayback.txt.

In the code the variable, file_path must be set to testPlayback.txt. An example of this can be seen in Figure 2.
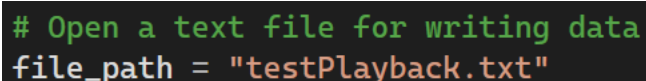


```
# Open a text file for writing data
file_path = "testPlayback.txt"
```

Figure 2 – A screenshot of the correct assignment of testPlayback.txt to file_path for this test.

Last in the main while loop the TravRow variable must be set to a constant variable of 1. This is so that the code will constantly print out the first row of the test file. This can be seen in Figure 3.

```
TravRow = 1
#TravRow = TravRow + 1
```

Figure 3 – a screen shot of commenting out the row traversal and setting to constant of 1.

Procedure:

First, we will test the radius of each crew member an see if the location of the crew members matches the correct radius on the unit circle. To do this we must one by one change the radius of each member to 2ft, running the playback feature and checking if the correct location is displayed. Continued this process by increasing the radius by 1ft up to 10ft. (All measurements must be converted to cm) Record if the displayed location matches the entered location by indicating a pass or fail.

Next do this same process for the observer angle except start the observer at 0 degrees and incrementing by 45 degrees.

Last repeat these processes for the azimuth angle.

Results:

	Crew Member 1	Crew Member 2	Crew Member 3	Crew Member 4
070(2ft)	Pass	Pass	Pass	Pass
091(3ft)	Pass	Pass	Pass	Pass
122(4ft)	Pass	Pass	Pass	Pass
152(5ft)	Pass	Pass	Pass	Pass
183(6ft)	Pass	Pass	Pass	Pass
213(7ft)	Pass	Pass	Pass	Pass
244(8ft)	Pass	Pass	Pass	Pass
273(9ft)	Pass	Pass	Pass	Pass
305(10ft)	Pass	Pass	Pass	Pass

Figure 4 – Radius Test

	Crew Member 1	Crew Member 2	Crew Member 3	Crew Member 4
0 deg	Pass	Pass	Pass	Pass
45 deg	Pass	Pass	Pass	Pass
90 deg	Pass	Pass	Pass	Pass
135 deg	Pass	Pass	Pass	Pass
180 deg	Pass	Pass	Pass	Pass
225 deg	Pass	Pass	Pass	Pass
270 deg	Pass	Pass	Pass	Pass
315 deg	Pass	Pass	Pass	Pass
360 deg	Pass	Pass	Pass	Pass

Figure 5 – Azimuth Test

	Crew Member 1	Crew Member 2	Crew Member 3	Crew Member 4
0 deg	Pass	Pass	Pass	Pass
45 deg	Pass	Pass	Pass	Pass
90 deg	Pass	Pass	Pass	Pass
135 deg	Pass	Pass	Pass	Pass
180 deg	Pass	Pass	Pass	Pass
225 deg	Pass	Pass	Pass	Pass
270 deg	Pass	Pass	Pass	Pass
315 deg	Pass	Pass	Pass	Pass
360 deg	Pass	Pass	Pass	Pass

Figure 6 – Observer Test

Conclusion:

After running the test, it is concluded that the play back feature is accurate. It displays the expected location of each crew member that is recorded in the txt file.