Feature Documentation:
Use Wingspan Slider Input To Affect Potential Paths Calculated for NASA EVA Path Phase 3
Version 1.2

Developer

Deepali Varma

Product Owner

Daren Welsh

Test Team

Tenadam Weldesemayat

Lincoln Powell

University of Maryland University College
SWEN 670 9040 (2185)
Software Engineering Project
Dr. Michael Brown

August 12, 2018

Table of Contents

i. Revision History

Revision	Author	Date	Description
1.0	Deepali Varma	8/12/18	Initial document.
1.1	Tenadam Weldesemayat	8/12/18	Reviewed document.
1.2	Lincoln Powell	8/12/18	Reviewed document.

1. Introduction

1.1 Background

The NASA EVA Navigator web application delivered from Phase 2 completed tailored backlog items designed by Daren to meet existing objectives for the product. One of the desired functionality remained in the backlog was the use the wingspan slider input to affect the potential paths calculated. The application delivered from Phase 2 showed path results for three routes which had gaps that exceeds the wingspan. For example:

Wingspan : 4 ft --> 48.0 in
Route 2
S0_3429 [0.0 in.]
S0_3428 [29.77 in.]
S0_3437 [49.71 in.]
S0_3442 [20.87 in.]
S0_3459 [51.2 in.]
S0_3462 [53.34 in.]
S0_TRAY_H1 [39.07 in.]
LAB_0242 [55.55 in.]
LAB_0247 [45.07 in.]
LAB_0252 [42.83 in.]
LAB_0256 [45.06 in.]
LAB_0255 [54.08 in.]
LAB_0259 [36.37 in.]
LAB_0263 [23.75 in.]
LAB_0269 [54.85 in.]

1.2 Intent

Daren's intent for this change is to use the wingspan slider input to affect the potential path calculated which does not exceeds the wingspan limit. Toward this goal, he desired to provide better information regarding each move a space walker will make in the International Space Station model.

1.3 Agreed Change(s)

The use the wingspan slider input to affect the potential path calculated which does not exceeds the wingspan limit.

2. Development

2.1 Code Additions or Modifications

The changes made to EVA Navigator project to accomplish the use of wingspan slider input to affect the potential path calculated which does not exceeds the wingspan limit are in the RouteRequest.java file. The screenshots below show the code changes made to the project. The pink highlights demonstrate the lines removed and the light green once show additions (see Figure 1).

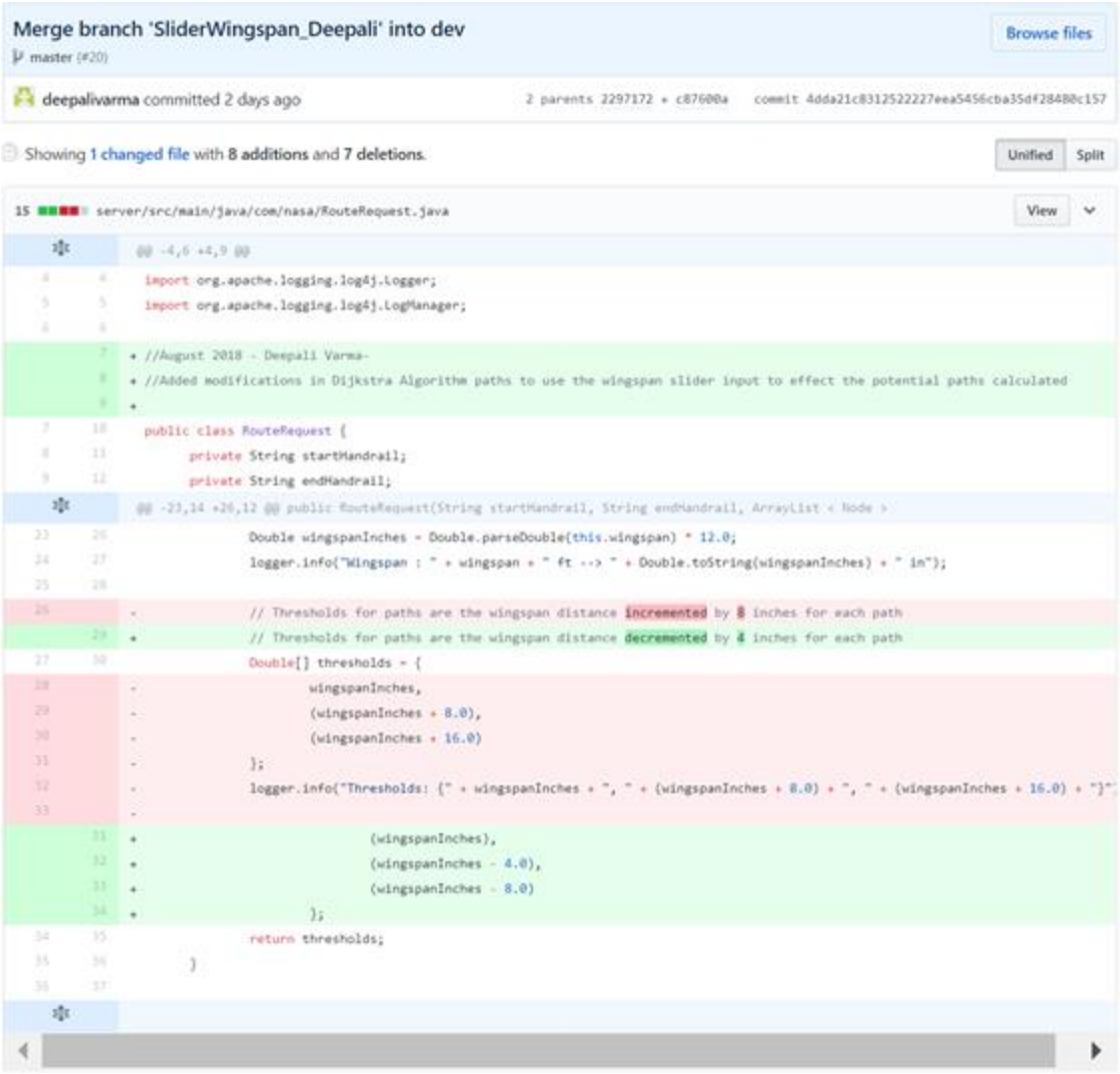

Figure 1. RouteRequest.java file changes to calculate distance according to wingspan.

3. Functional Testing

3.1 Proposed Functional Test Case

3.1.1 Test Case 1: Set Wingspan slider to 4 feet

Description: The distances between each handrail should not exceed 4 Feet.

Requirements:

1. The route results of each route show distance that does not exceed the wingspan.

Prerequisites:

1. Start handrail drop-down menu must work as intended.
2. End handrail drop-down menu must work as intended.
3. The routes are calculated when the “Go” button is clicked.

Steps:

1. Load “EVA Navigator” web application by navigating browser to http://127.0.0.1:3000 or http://localhost:3000.
2. Select S0_3429 as the starting handrail.
3. Select LAB_0269 as the ending handrail.
4. Select the “Go” button.
5. Click on the Path Results.
6. Check that the results for each route show distance in between the listings of each handrail.
7. Check the distances does not exceed the wingspan.

Input: Click on the starting handrail drop-down menu and select the “S0_3429” handrail. Click on the ending handrail drop-down menu and select the “LAB_0269” handrail. Click on the “Go” button. Click on the Path Results

Expected Output: Distance between each handrail path should not exceed the wingspan limit of 4 Feet (48’ inches).

Assumptions: None.

3.1.2 Test Case 2: Set Wingspan slider to 5 feet

Description: The distances between each handrail should not exceed 5 Feet.

Requirements:

1. The route results of each route show distance that does not exceed the wingspan.

Prerequisites:

1. Start handrail drop-down menu must work as intended.
2. End handrail drop-down menu must work as intended.
3. The routes are calculated when the “Go” button is clicked.

Steps:

1. Load “EVA Navigator” web application by navigating browser to http://127.0.0.1:3000 or http://localhost:3000.
2. Select S0_3429 as the starting handrail.
3. Select LAB_0269 as the ending handrail.
4. Select the “Go” button.
5. Click on the Path Results.
6. Check that the results for each route show distance in between the listings of each handrail.
7. Check the distances does not exceed the wingspan.

Input: Click on the starting handrail drop-down menu and select the “S0_3429” handrail. Click on the ending handrail drop-down menu and select the “LAB_0269” handrail. Click on the “Go” button. Click on the Path Results

Expected Output: Distance between each handrail path should not exceed the wingspan limit of 5 Feet (60 inches).

Assumptions: None.

3.2 Assumptions and Constraints

3.2.1 Assumptions

It is assumed that the EVA Navigator web application has been setup and launched correctly, following the User_Manual.docx, section 3, Software Installation based on your operating system.

3.2.2 Constraints

None.

3.3 Findings

All functional tests worked as expected, resulting in the desired behavior.