Solar System Visualisation - end to end manual tests

This script presents end-to-end manual testing scenarios. It is divided into two parts by modes. All tests from Landing Page and assumes that both the frontend web application and the backend server are running. Testing UI in the visualisation view is common for both speed modes.

Testing visualisation UI.

1. The selected start date should be equal to the date visible on the Clock.
2. The clock should be updated according to the “speed mode” parameter.
3. Click the “Show labels” button. The labels should appear on every visible celestial body.
4. Click the “Show labels” button again - the labels should disappear.
5. Click the “More info” button. The text should appear on the left side of the screen.
6. Click the “More info” button again. The text should disappear.
7. Click the “X” button. The UI should disappear, the only button left should be “X”.
8. Click the “X” button again. The UI should appear.
9. Click the “Back” button. You should be redirected to the Landing Page.

1. **“Solar System” mode.**

In this mode “Visualisation” should present the Sun and 8 planets of the solar system.

Scenario 1. Correct parameters selection. No end date selected.

1. Select “Solar System” in mode selection.
2. The second bubble should appear showing parameters selection for this mode - start date, end date and speed mode.
3. Select todays date as a “start date”
4. Don’t select anything in the “end date” field.
5. Select “Real time” in the speed mode field.
6. The “Start” button should appear at this stage.
7. Click the “Start” button.
8. Landing Screen should now appear.
9. Wait for the request to return the response.
10. If the Error Page appears - the error occurred, hit the “Retry” button. The Loading Screen should appear again.
11. The Visualisation appears.
12. Move around the visualisation - zoom in, zoom out etc.
13. Test UI - **Testing visualisation UI.**

Scenario 2. Correct parameters selection. End date selected.

1. Select “Solar System” in mode selection.
2. The second bubble should appear showing parameters selection for this mode.
3. Select todays date as a “start date”
4. Select “end date” as one month later.
5. Select “Fast” in the speed mode field.
6. The “Start” button should appear at this stage.

7. Click the “Start” button.
8. Landing Screen should now appear.
9. Wait for the request to return the response.
10. If the Error Page appears - the error occurred, hit the “Retry” button. The Loading Screen should appear again.
11. The Visualisation appears.
12. Wait for the visualisation to reach “end date”.
13. When “end date” is reached, the message “End date reached” should appear under the clock and the visualisation stops.
14. Close the message using a small “X” button next to the message.
15. Move around the visualisation - zoom in, zoom out etc.
16. Test UI - **Testing visualisation UI.**

Scenario 3. Incorrect parameters selection.

1. Select “Solar System” in mode selection.
2. The second bubble should appear showing parameters selection for this mode.
3. Select todays date as a “start date”
4. Select “end date” which is before the “start date”.
5. The message about the mistake should appear.
6. Select speed mode parameter.
7. The “Start” button should not be visible!
8. Change the end date to be equal to the start date.
9. The message should still be visible. No “Start” button.
10. Change the “end date” to be later than “start date”.
11. The “Start” button should appear.
12. Click “Start button” and wait for the visualisation to start.

Scenario 4. Speed modes - “Medium”.

1. Select “Solar System” in mode selection.
2. The second bubble should appear showing parameters selection for this mode.
3. Select todays date as a “start date”
4. Do not select “end date”
5. Select “Medium” as “speed mode”.
6. To verify if the speed mode works correctly - please wait as the whole year passes and check if Earth managed to do the full rotation.
7. Check if the orbits are continuous and drawn in the good directions.

Scenario 5. Speed modes - “Fast”.

1. Select “Solar System” in mode selection.
2. The second bubble should appear showing parameters selection for this mode.
3. Select todays date as a “start date”
4. Do not select “end date”
5. Select “Fast” as “speed mode”.
6. To verify if the speed mode works correctly - please wait as the whole year passes and check if Earth managed to do the full rotation.
7. Check if the orbits are continuous and drawn in the good directions.

Scenario 6. Speed modes - “Real Time”.

1. Select “Solar System” in mode selection.
2. The second bubble should appear showing parameters selection for this mode.
3. Select todays date as a “start date”
4. Do not select “end date”
5. Select “Real Time” as “speed mode”.
6. The clock should be updated after each second by one second.
7. The planet's movement should be barely visible.

2. “Planet & its satellites” mode.

In this mode “Visualisation” should present the selected planet and its planetary satellites.

Scenario 1. Correct parameters selection. No end date selected.

1. Select “Planet & its satellites” in mode selection.
2. The second bubble should appear showing parameters selection for this mode - planet, start date and end date.
3. Select todays date as a “start date”
4. Don’t select anything in the “end date” field.
5. Select Earth as “planet”
6. The “Start” button should appear at this stage.
7. Click the “Start” button.
8. Landing Screen should now appear.
9. Wait for the request to return the response.
10. If the Error Page appears - the error occurred, hit the “Retry” button. The Loading Screen should appear again.
11. The Visualisation appears.
12. Move around the visualisation - zoom in, zoom out etc.
13. Test UI - **Testing visualisation UI.**

Scenario 2. Correct parameters selection. End date selected.

1. Select “Planet & its satellites” in mode selection.
2. The second bubble should appear showing parameters selection for this mode - planet, start date and end date.
3. Select todays date as a “start date”
4. Don’t select anything in the “end date” field.
5. Select any planet as “planet”
6. The “Start” button should appear at this stage.
7. Click the “Start” button.
8. Landing Screen should now appear.
9. Wait for the request to return the response.
10. If the Error Page appears - the error occurred, hit the “Retry” button. The Loading Screen should appear again.
11. The Visualisation appears.
12. Wait for the visualisation to reach “end date”.
13. When “end date” is reached, the message “End date reached” should appear under the clock and the visualisation stops.

14. Close the message using a small “X” button next to the message.
15. Move around the visualisation - zoom in, zoom out etc.
16. Test UI - **Testing visualisation UI.**

Scenario 3. Incorrect parameters selection.

1. Select “Planet & its satellites” in mode selection..
2. The second bubble should appear showing parameters selection for this mode.
3. Select todays date as a “start date”
4. Select “end date” which is before the “start date”.
5. The message about the mistake should appear.
6. Select speed mode parameter.
7. The “Start” button should not be visible!
8. Change the end date to be equal to the start date.
9. The message should still be visible. No “Start” button.
10. Change the “end date” to be later than “start date”.
11. The “Start” button should appear.
12. Click “Start button” and wait for the visualisation to start.

Please repeat scenario 1. for all planets and check if all satellites are rendered.
To check the planet and its satellites which should be rendered in the table below.

Planet	Satellites
Mercury	No satellites
Venus	No satellites
Earth	Moon
Mars	• Phobos • Deimos
Jupiter	• Io • Europa • Ganymede • Callisto
Saturn	• Mimas • Enceladus • Tethys • Dione • Rhea • Titan • Hyperion • Iapetus
Uranus	• Ariel • Umbriel • Titania • Oberon • Miranda
Neptune	• Triton • Nereid • Naiad • Thalassa • Despina • Galatea • Larissa • Proteus