Use Cases:
- Generate Celestial Body
- Generate Natural Satellite
- Select Stellar Model
- Select Orbital Settings
- Save Simulation
- Inspect Feature

Generate Celestial Body
Basic Course: On the Next Gen Planet Simulator Page, if no Celestial Body exists, the system shows the Celestial Body Edit Dialog. The User then edits the physical properties to define their Celestial Body. Then the User clicks the Generate button and the system will close the Celestial Body Edit Dialog and generate the Celestial Body.
Alternate Course: ***The user does not select any physical properties:*** An error message appears above the Generate button displaying the message, "Please select one or more Physical properties to generate your Celestial Body."

Generate Natural Satellite
Basic Course: The User will open the Celestial Body Edit Dialog and select the Generate Natural Satellite button. The User edits physical properties to define their Natural Satellite. The User clicks the Generate button and the system will close the Celestial Body Edit Dialog and generate the Natural Satellite.
Alternate Course: ***The user does not select any physical properties:*** An error message appears above the Generate button displaying, "Please select one or more physical properties to generate your Natural Satellite." The User closes it and is able to continue editing the physical properties in the Celestial Body Dialog. ***The user has too many Natural Satellites:*** An error message appears above the Generate button displaying, "You have too many Natural Satellites."

Select Stellar Model
Basic Course: On the <u>Celestial Body Edit Dialog</u>, the <u>User</u> will select the <u>Stellar Model Dialog</u>. Then the <u>User</u> will select a <u>Stellar Model</u> from the list, hit the <u>confirmation button</u>, and the system will update the <u>Next Gen Simulator Page</u> in accordance with the choice of the <u>User</u>.
Alternate Courses: ***The user selects a Stellar Model which does not exist:*** If the user selects a <u>Stellar Model</u> which does not exist, an error message appears displaying, "Selected Stellar Model does not exist".

Select Orbital Settings
Basic Course: From the <u>Celestial Body Edit Dialog</u>, the <u>User</u> will open the <u>Orbital Settings Dialog</u>. From here, the <u>User</u> will adjust the <u>Orbital Settings</u> for their <u>Celestial body</u>. After the user clicks the <u>confirmation button</u>, the dialog boxes are closed and the orbit of the <u>Celestial Body</u> is updated on the <u>Next Gen Simulator Page</u>.
Alternate Courses: ***The user enters the invalid input:*** If the user enters an invalid input then error message appears displaying, "Invalid Input". Examples of invalid input include negative or very small orbital radius or orbital speed settings.

Inspect Feature
Basic Course: The <u>User</u> opens the <u>Inspection Mode Chooser</u> dialog box by selecting the <u>Main Menu Bar</u> button for <u>Inspection Mode</u>. From this dialog box users can select a physical phenomenon and a description of what that feature is about will appear as a <u>Phenomenon Info Panel</u> on the chooser, with a brief description of how it occurs in nature such as <u>Van Allen belts, volcanoes, craters, Van Allen belts</u> etc.
Alternate Courses: ***The user selects inspection mode without any Celestial Bodies:*** An error message will appear above the <u>confirmation button</u> displaying, "Properties cannot be shown until one or more celestial bodies have been generated."