SOFTWARE VERIFICATION, VALIDATION AND TESTING

TESTING DOCUMENTATION

The National Aeronautics and Space Administration (NASA) Website Testing

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1. Introduction

1.1. About the Project

The NASA website (www.nasa.gov) is the official website of the National Aeronautics and Space Administration. It provides information on NASA's mission, research, news, and events. The website also features a variety of educational resources, including interactive multimedia, videos, and images. Visitors can explore information about NASA's current and past missions, including information about the International Space Station, and the latest discoveries made by NASA's spacecraft and telescopes. Additionally, the website also provides information about NASA's plans for future missions, such as those to Mars and other celestial bodies. The website is a great resource for anyone interested in space exploration and scientific research.

1.2. Project Functionalities and Screenshots

The NASA (National Aeronautics and Space Administration) main page serves as a hub for information about the agency's various missions, research, and developments in the field of space exploration. The main page typically includes a featured section with news and updates on current and upcoming missions, as well as sections for NASA's different programs such as Aeronautics, Space Technology, and Science. The website also provides access to a variety of resources such as videos, images, and interactive features that allow users to explore NASA's work in greater detail. Users can also find information on NASA's facilities and research centers, as well as job and internship opportunities. Additionally, The NASA main page also have links to NASA's social media accounts and a section with resources for educators and students.
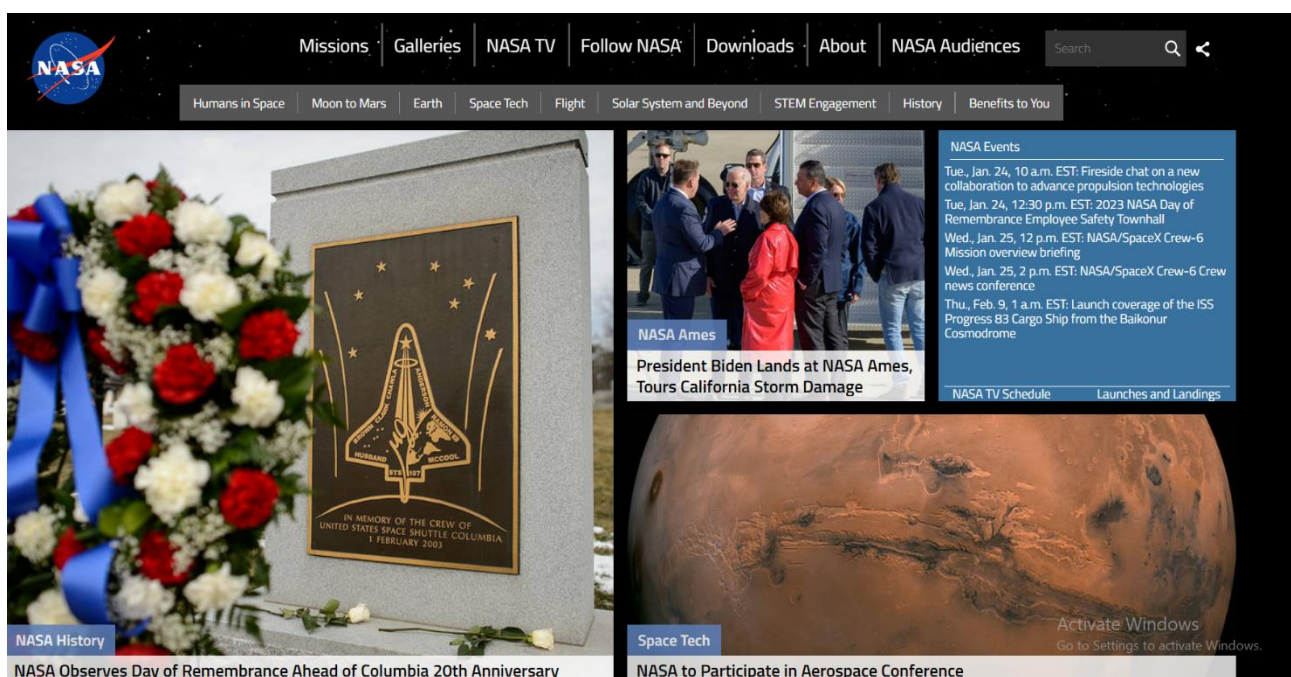
The NASA Galleries page is a section of the NASA website that provides a collection of multimedia resources, including images, videos, and audio files. These resources cover a wide range of topics related to NASA's missions and research, including images of space, celestial bodies, and NASA spacecraft, as well as footage of launches and other events.

The Galleries page is organized into several categories, such as "Images," "Videos," and "Audio," that allow users to quickly find the type of media they are looking for.
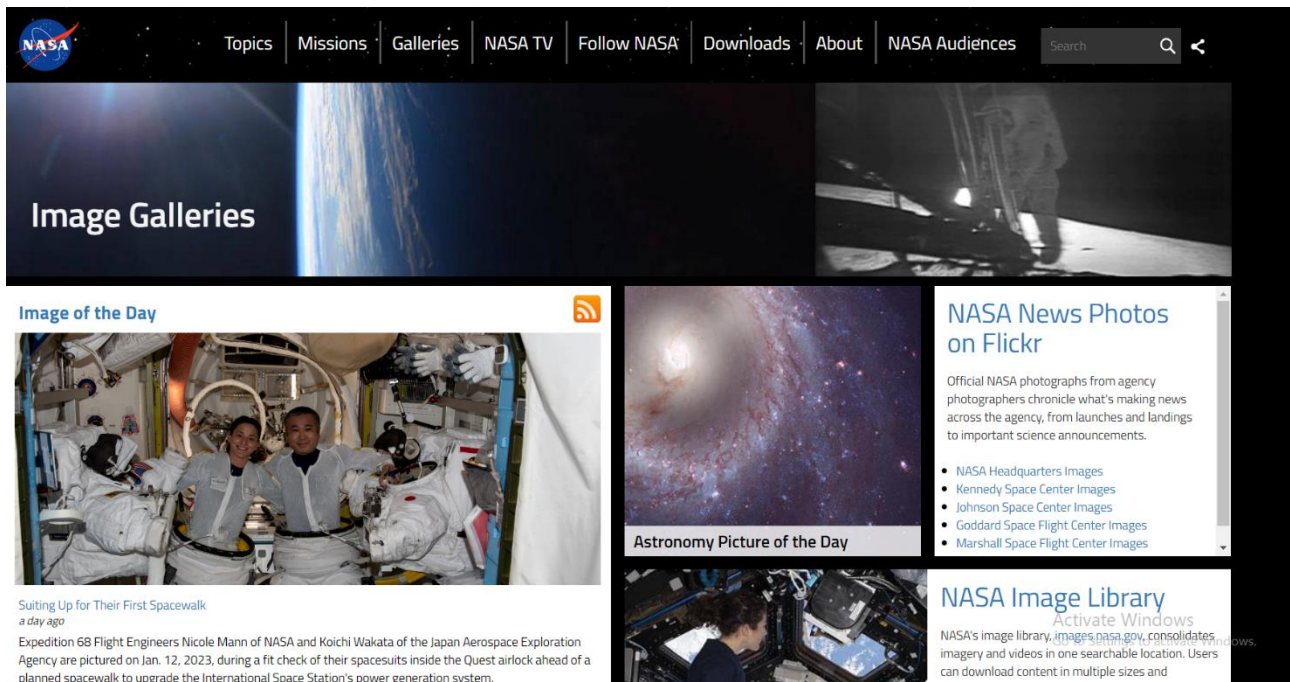
The NASA blogs section is a section of the NASA website that provides a platform for NASA scientists, researchers, engineers, and other experts to share their knowledge, insights, and updates about the agency's ongoing missions and research.
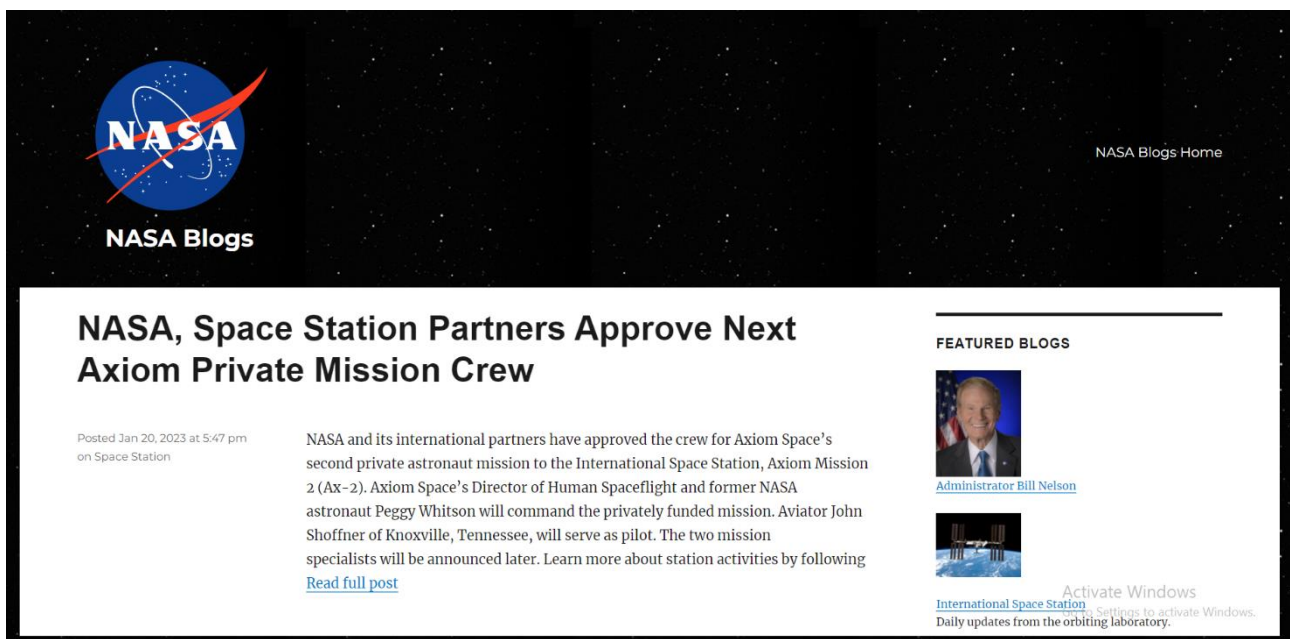
Overall, the "Follow NASA" section provides a variety of ways for users to stay connected (Facebook, Twitter, Instagram, and YouTube) with the agency's work and to stay informed about NASA's latest developments in space exploration and aeronautics.

The NASA downloads section is a section of the NASA website that provides access to a wide range of resources that can be downloaded for personal or educational use. These resources include images, videos, audio files, software, and other materials that cover a variety of topics related to NASA's missions and research.

The NASA Audience page is a section of the NASA website that provides resources for specific groups of people such as students, educators, media and industry professionals, and the public. It serves as a valuable resource for everyone that is looking to engage with NASA's work and mission.
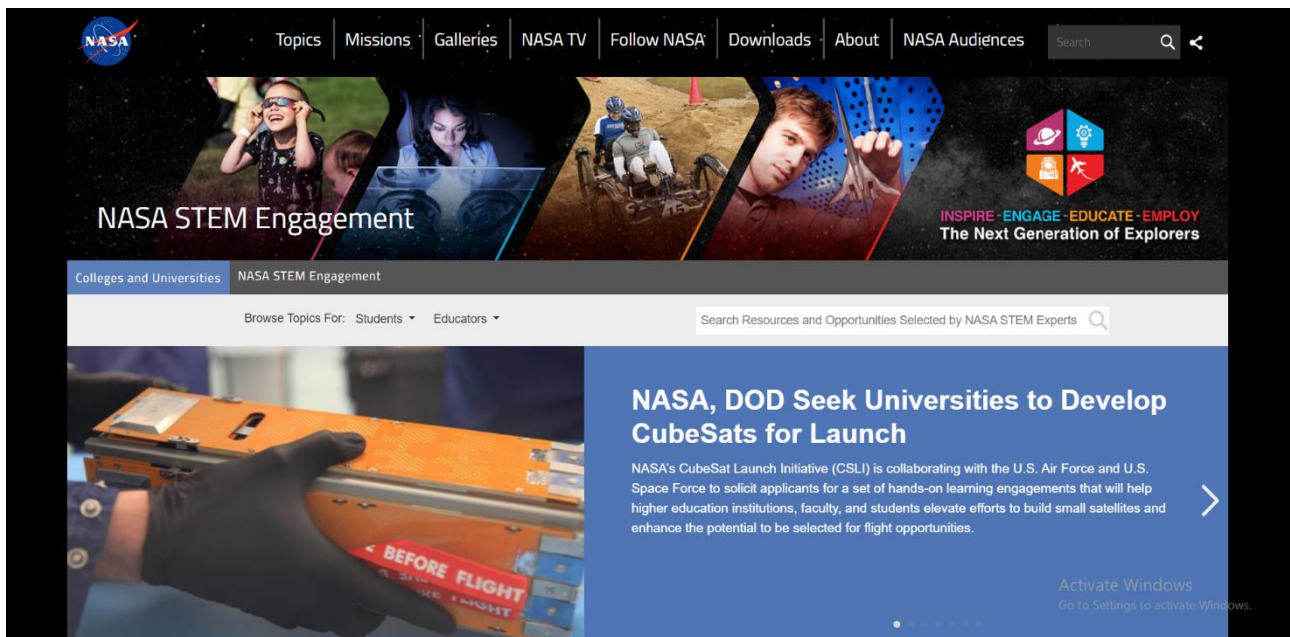
The NASA Missions page serves as a valuable resource for anyone interested in learning about NASA's current and past missions and its upcoming missions, providing detailed information on the objectives, scientific payloads, spacecraft, and instruments used, mission's team and status. It also provides interactive features, videos, images, and a mission status dashboard that allow users to explore and understand NASA's ongoing efforts in space exploration and research.
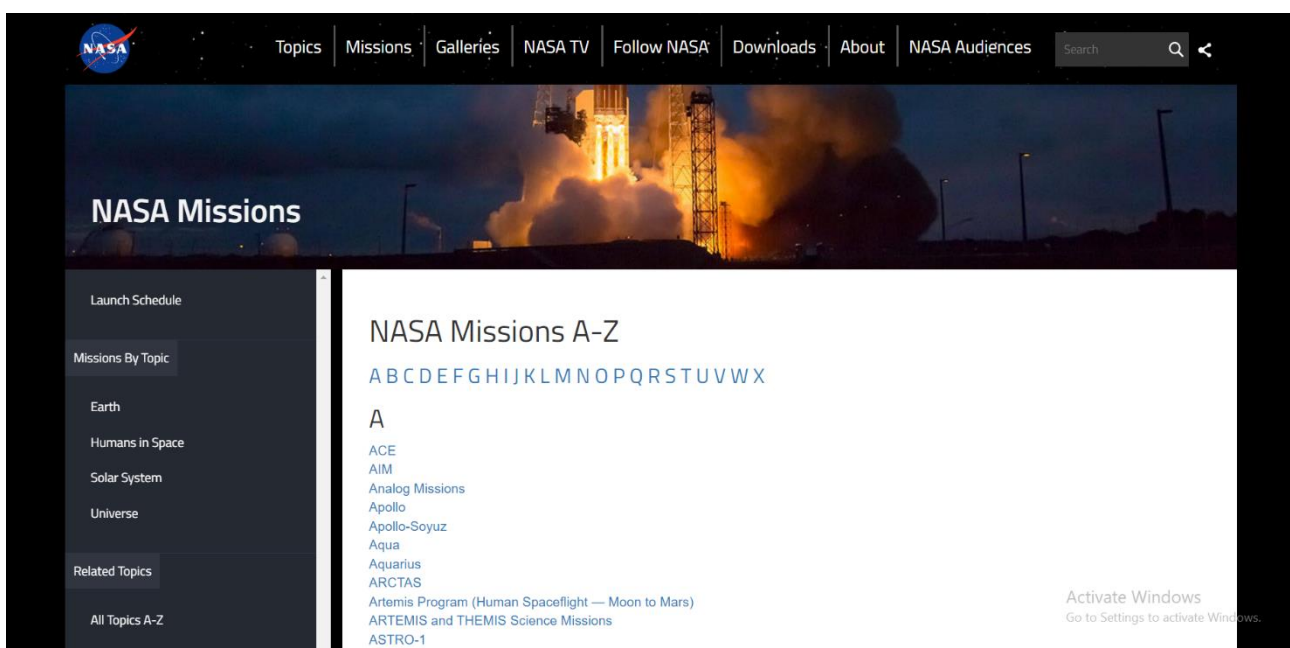
2. Test Plan

2.1. Scope

Navigation and usability testing: This includes testing the website's menu structure, links, and buttons to ensure that they work correctly and that the website is easy to navigate.

Functionality testing: This includes testing all the functionalities of the website such as forms, videos, images, and links to ensure that they are working properly.

Content testing: This includes testing the website's content to ensure that it is accurate, relevant, and up to date.

2.2. Testing Environment and Tools

The tests for the project are written in Java programming language. The IDE used is Eclipse and the additional tools are Selenium and ChromeDriver.

3. Test Execution

In this project I am going to focus on three types of tests- functionality, content and navigation and usability tests. Testing different types of forms, images, and links, alongside website's content.

3.1. Example Scenario: Testing the Search filter

As a user, I want to have functional search filters so I can find certain information easier.

Test Name: Testing the Search filter				
Description: Test description				
Pre-condition(s):				
Test Steps: 1. Open the NASA main page 2.Search for Mars 3. Go to featured results 4.Click on the first link 5.Assert that the first result takes you to: https://www.nasa.gov/feature/ames/chemin 6.Go back to NASA Home Page 7.Assert that you are back at the main page	**Test Data:**	**Expected Result:** Filter accurately and efficiently searched through the website's content and returned relevant results that matched the search criteria entered by the user.	**Actual Result:** Filter accurately and efficiently searched through the website's content and returned relevant results that matched the search criteria entered by the user.	**Status:** PASS
Notes:				

```
30⊖    @Test
31     //Test1
32     public void test()throws InterruptedException {
33
34             webDriver.get(baseUrl);
35             webDriver.manage().window().maximize();
36             Thread.sleep(2000);
37              //Search for Mars
38             webDriver.findElement(By.xpath("//*[@id=\"ember21\"]")).sendKeys("Mars");
39             webDriver.findElement(By.xpath("//*[@id=\"ember24\"]")).click();
40             //Go to featured results
41             webDriver.findElement(By.xpath("//*[@id=\"search-nav\"]/ul/li[3]/a")).click();
42             //Filter them by Last year
43             webDriver.findElement(By.xpath("//*[@id=\"time-filter-dropdown\"]/a")).click();
44             webDriver.findElement(By.xpath("//*[@id=\"time-filter-dropdown\"]/ul/li[5]/a")).click();
45             //Click on the first link
46             webDriver.findElement(By.xpath("//*[@id=\"result-1\"]/h4/a")).click();
47             //Assert that the first result takes you to: https://www.nasa.gov/feature/ames/chemin
48             Thread.sleep(3000);
49             String url = webDriver.getCurrentUrl();
50             assertEquals("https://www.nasa.gov/feature/ames/chemin", url);
51             //Go back to NASA Home Page
52             webDriver.navigate().back();
53             webDriver.findElement(By.xpath("//*[@id=\"menu-button\"]")).click();
54             webDriver.findElement(By.xpath("//*[@id=\"header-links-menu-dropdown\"]/ul/li[1]/a")).click();
55             //Assert that you are back at the main page
56             Thread.sleep(2000);
57             String url2 = webDriver.getCurrentUrl();
58             assertEquals(baseUrl, url2);
59         }
60
```

3.2. Example Scenario: Testing the Image Gallery

As a user, I would like to see a wide variety of high-resolution images on the NASA website's image gallery. Additionally, I would like to see detailed captions or descriptions accompanying each image, providing information about what is depicted in the image and its significance.

Test Name: Testing the Image Gallery				
Description: Check if all sidebar items are clickable and lead to their respective page				
Pre-condition(s):				
Test Steps: 1. Open NASA main page 2. Go to Image Gallery 3. Go to Earth Observatory Images 4. Select Snow & Ice section 5. Click on the Clear Days for Iceberg Spotting 6. Assert that the image was taken by the Aqua Satelite. 7. Go back and select the Human option 8. Select the World's Longest Conveyor belt System 9. Assert that the photo is of the Sahara Desert	Test Data:	Expected Result: All the elements are located and selected successfully without interruptions. Links and assert statements are working properly and are directed to the proper page.	Actual Result: All the elements are located and selected successfully without interruptions. Links and assert statements are working properly and are directed to the proper page.	Status: PASS

Notes:

```
62⊖    */@Test
63     //Test2
64     public void test()throws InterruptedException {
65
66            webDriver.get(baseUrl);
67            webDriver.manage().window().maximize();
68            Thread.sleep(2000);
69             //Go to Image Gallery
70            webDriver.findElement(By.xpath("//*[@id=\"nasa-main-menu\"]/li[3]/a")).click();
71            webDriver.findElement(By.xpath("//*[@id=\"nasa-main-menu\"]/li[3]/ul/li[2]/a")).click();
72            Thread.sleep(5000);
73            //Go to Earth Observatory Images
74            webDriver.findElement(By.xpath("//*[@id=\"ember64\"]")).click();
75            //Select Snow & Ice section
76            webDriver.findElement(By.xpath("/html/body/div[5]/div/div[1]/div[2]/a[8]")).click();
77            Thread.sleep(5000);
78            //Click on the Clear Days for Iceberg Spotting
79            webDriver.findElement(By.xpath("/html/body/div[5]/div/div[2]/div[2]/div[2]/h4/a")).click();
80            Thread.sleep(5000);
81            //Assert that the image was taken by the Aqua Satelite
82            String text = webDriver.findElement(By.xpath("/html/body/div[5]/div[2]/div[2]/div[1]/p[1]")).getText();
83            assertTrue(text.contains("Aqua"));
84            //Go back and select the Human option
85            webDriver.navigate().back();
86            Thread.sleep(5000);
87            webDriver.findElement(By.xpath("/html/body/div[5]/div/div[1]/div[2]/a[8]")).click();
88            Thread.sleep(5000);
89            webDriver.findElement(By.xpath("/html/body/div[5]/div/div[1]/div[2]/a[3]")).click();
90            Thread.sleep(5000);
91            //Select the Worlds Longest Conveyor belt System
92            webDriver.findElement(By.xpath("/html/body/div[5]/div/div[2]/div[1]/div/div[2]/h4/a")).click();
93            Thread.sleep(5000);
94            //Assert that the photo is of the Sahara desert
95            String desert = webDriver.findElement(By.xpath("/html/body/div[5]/div[2]/div[2]/div[1]/p[1]")).getText();
96            assertTrue(desert.contains("Sahara"));
97     }
```

3.3. Example Scenario: Testing Video

As a user, I would like to see a wide variety of high-quality videos on the NASA website's video section.

Test Name: Testing Video				
Description: Test the functionality of video				
Pre-condition(s):				
Test Steps: 1. Open NASA main page 2. Go to Videos 3. Click on the video 133 Days on the Sun 4. Play the video for 10 seconds 5. Check if the video has been played for 10 seconds	**Test Data:**	**Expected Result:** The video on the NASA website has a clear and engaging narrative, high-quality visuals, and informative content that is easy to understand, also it should assert that the video lasted for 10 seconds.	**Actual Result:** The video on the NASA website has a clear and engaging narrative, high-quality visuals, and informative content that is easy to understand, but the Assertion method failed(expected 10 got null).	**Status:** FAIL
Notes:				

```
 99⊖    @Test
100     //Test3
101     public void test()throws InterruptedException {
102
103             webDriver.get(baseUrl);
104             webDriver.manage().window().maximize();
105             Thread.sleep(2000);
106             //Go to Videos
107             webDriver.findElement(By.xpath("//*[@id=\"nasa-main-menu\"]/li[3]/a")).click();
108             webDriver.findElement(By.xpath("//*[@id=\"nasa-main-menu\"]/li[3]/ul/li[5]/a")).click();
109             //Click on the video 133 Days on the Sun
110             Thread.sleep(3000);
111             webDriver.findElement(By.xpath("//*[@id=\"ember52\"]/div/a")).click();
112             Thread.sleep(3000);
113             //Play the video for 10 seconds
114             webDriver.findElement(By.xpath("//*[@id=\"full-view\"]/div[2]/div/div[1]/iframe")).click();
115             Thread.sleep(10000);
116             webDriver.findElement(By.xpath("//*[@id=\"full-view\"]/div[2]/div/div[1]/iframe")).click();
117             //check if the video has been played for 10 seconds
118             String sec = webDriver.findElement(By.xpath("//*[@id=\"full-view\"]/div[2]/div/div[1]/iframe")).getAttribute("currentTime");
119             assertEquals("10", sec);
120         }
```

3.4. Example Scenario: Testing Social Media page and verify its functionality

As a user, I would like to see NASA's social media page on the website to be informative and engaging.

Test Name: Testing Social Media page and verify its functionality				
Description: The test for the social media page on the NASA website would involve checking the functionality and usability of the page, also check for the ability to access different NASA social media profiles from the page.				
Pre-condition(s):				
Test Steps: 1. Open NASA main page 2. Go to Social Media Page 3. Verify that the title is "Social Media at NASA" 4. Go to Snapchat Page and verify that you are on the right page 5. Go to the Twitter Page and verify that you are on the right page	Test Data:	Expected Result: The social media page is fully functional and easy to use, providing users with easy access to NASA's social media profiles and the latest updates from those profiles.	Actual Result: The social media page is fully functional and easy to use, providing users with easy access to NASA's social media profiles and the latest updates from those profiles.	Status: PASS
Notes:				

```
122  @Test
123  //Test4
124  public void test()throws InterruptedException {
125
126          webDriver.get(baseUrl);
127          webDriver.manage().window().maximize();
128          Thread.sleep(2000);
129           //Go to Social Media Page
130          webDriver.findElement(By.xpath("//*[@id=\"nasa-main-menu\"]/li[5]/a")).click();
131          webDriver.findElement(By.xpath("//*[@id=\"nasa-main-menu\"]/li[5]/ul/li[6]/a")).click();
132          Thread.sleep(3000);
133          //Verify that the title is  "Social Media at NASA"
134          String text = webDriver.findElement(By.xpath("//*[@id=\"content\"]/div/h1")).getText();
135          assertEquals("Social Media at NASA", text);
136          //Go to Snapchat Page and verify that you are on the right page
137          webDriver.findElement(By.xpath("//*[@id=\"ember27\"]/div/p[2]/a[4]")).click();
138          Thread.sleep(3000);
139          String url1 = webDriver.getCurrentUrl();
140          assertEquals("https://snapchat.com/add/nasa", url1);
141          webDriver.navigate().back();
142          Thread.sleep(3000);
143          //Go to the Twitter Page and verify that you are on the right page
144          webDriver.findElement(By.xpath("//*[@id=\"ember27\"]/div/p[2]/a[1]")).click();
145          String url2 = webDriver.getCurrentUrl();
146          assertEquals("https://twitter.com/nasa", url2);
147
148      }
```

3.5. Example Scenario: Testing "Contact Us" form

As a user, I would like to see a clear and easy-to-use contact form on the NASA website. I would like the form to be responsive and have clear instructions and labels.

Test Name: Testing "Contact Us" form				
Description: The test for the contact us form on the NASA website would involve checking the functionality and usability of the form				
Pre-condition(s):				
Test Steps: 1. Open NASA main page 2. Go to "Contact NASA" at bottom of page 3. Fill in the required information 4. Send message	**Test Data:** The data used in this test are user credentials and user's comment.	**Expected Result:** The contact us form is fully functional, easy to use, and able to receive and process user's inquiries effectively.	**Actual Result:** The contact us form is fully functional, easy to use, and able to receive and process user's inquiries effectively.	**Status:** PASS
Notes:				

```
150  @Test
151  //Test5
152  public void test()throws InterruptedException {
153
154          webDriver.get(baseUrl);
155          webDriver.manage().window().maximize();
156          Thread.sleep(2000);
157          //Go to "Contact NASA" at bottom of page
158          webDriver.findElement(By.xpath("//*[@id=\"footer-links\"]/li[7]/a")).click();
159          Thread.sleep(2000);
160          webDriver.findElement(By.xpath("//*[@id=\"ember20\"]/div/p[21]/a")).click();
161          Thread.sleep(2000);
162          //Fill in the required information
163          webDriver.findElement(By.xpath("//*[@id=\"Sender\"]")).sendKeys("Hanah");
164          webDriver.findElement(By.xpath("//*[@id=\"emailaddress\"]")).sendKeys("email.my@gmail.com");
165          Select s = new Select(webDriver.findElement(By.xpath("//*[@id=\"inquiry_subject\"]")));
166          s.selectByValue("#askNASA");
167          webDriver.findElement(By.xpath("//*[@id=\"question_or_comment\"]")).sendKeys("Test Message");
168          //Send message
169          //webDriver.findElement(By.xpath("//*[@id=\"contact_us_request\"]/div[5]/button")).click();
170      }
```

3.6. Example Scenario: Testing Moon to Mars Subheading and their content

As a user I want to have a content that it is accurate, relevant, and up to date.

Test Name: Testing Moon to Mars Subheading and their content				
Description: The test for the Moon to Mars subheading on the NASA website would involve checking the functionality and usability of the subheading's content and features				
Pre-condition(s):				
Test Steps: 1. Open NASA main page 2. Go to Moon to Mars page 3. Go to Overview page 4. Assert that main title is "Moon to Mars Overview." 5. Go to Images 6. Click on the third image and assert it is "Space Station Swings by Kennedy." 7. Exit this image and select the sixth image and assert it is "Mass Spectrometer Destined for the Moon Finishes Testing at Kennedy"	Test Data:	Expected Result: Moon to Mars subheading on the NASA website is fully functional, and easy to use. All links, buttons, images, and videos work correctly and be accessible to users.	Actual Result: Moon to Mars subheading on the NASA website is fully functional, and easy to use. All links, buttons, images and videos work correctly and be accessible to users.	Status: PASS
Notes:				

```
173     @Test
174     //Test6
175     public void test()throws InterruptedException {
176
177         webDriver.get(baseUrl);
178         webDriver.manage().window().maximize();
179         Thread.sleep(2000);
180         webDriver.get(baseUrl);
181         //Go to Moon to Mars page
182         webDriver.findElement(By.xpath("//*[@id=\"nasa-main-menu\"]/li[1]/ul/li[2]/a")).click();
183         Thread.sleep(2000);
184         //Go to Overview
185         webDriver.findElement(By.xpath("/html/body/div[3]/div[2]/div/ul/li[2]/a")).click();
186         Thread.sleep(3000);
187         //assert that main title is "Moon to Mars Overview"
188         String text = webDriver.findElement(By.xpath("/html/body/div[3]/div[3]/section/section/div[2]/div/h1")).getText();
189         assertEquals("Moon to Mars Overview", text);
190         //Go to Images
191         webDriver.findElement(By.xpath("//*[@id=\"ember42\"]/a")).click();
192         Thread.sleep(3000);
193         //click on the third image and assert it is "Space Station Swings by Kennedy"
194         webDriver.findElement(By.xpath("//*[@id=\"ember130\"]/div/a")).click();
195         Thread.sleep(3000);
196         String text2 = webDriver.findElement(By.xpath("//*[@id=\"title\"]")).getText();
197         assertEquals("Space Station Swings by Kennedy", text2);
198         webDriver.findElement(By.xpath("//*[@id=\"ember199\"]/div/a")).click();
199         Thread.sleep(3000);
200         //exit this image and select the sixth image and assert it is "Mass Spectrometer Destined for the Moon Finishes Testing at Kennedy"
201         webDriver.findElement(By.xpath("/html/body/div[3]/div[3]/section/section/div[2]/div/div/div/div[1]/div[6]/div/a")).click();
202         Thread.sleep(3000);
203         String text3 = webDriver.findElement(By.xpath("/html/body/div[3]/div/div/div/div/div[2]/div[2]/div/div[1]/div[1]/h3/span")).getText();
204         assertEquals("Mass Spectrometer Destined for the Moon Finishes Testing at Kennedy", text3);
205     }
```

3.7. Example Scenario: Test the NASA Blog Page and enter credentials

As a user, I want to have a functional Blog page option so I can submit a question.

Test Name: Test the NASA Blog Page and enter credentials
Description: The test for the NASA blog page would involve checking the functionality and

usability of the page				
Pre-condition(s):				
Test Steps: 1. Open NASA main page 2. Go to NASA Blog 3. Verify that the first blog title has "Axiom" 4. Enter the Blog 5. Assert that the date of post is "January 20, 2023" 6. Leave a Reply 7. Commit the message	**Test Data:** The data used in this test are user credentials and user's comment.	**Expected Result:** The expected result for the test would be that the NASA blog page is fully functional and usable, which is successfully confirmed.	**Actual Result:** The expected result for the test would be that the NASA blog page is fully functional and usable, which is successfully confirmed.	**Status:** PASS
Notes:				

```java
207    @Test
208    //Test7
209    public void test()throws InterruptedException {
210
211        webDriver.get(baseUrl);
212        webDriver.manage().window().maximize();
213        Thread.sleep(2000);
214        webDriver.get(baseUrl);
215        //Go to NASA Blog
216        webDriver.findElement(By.xpath("//*[@id=\"nasa-main-menu\"]/li[5]/a")).click();
217        webDriver.findElement(By.xpath("/html/body/div[2]/div/nav/div[3]/ul/li[5]/ul/li[2]/a")).click();
218        Thread.sleep(3000);
219        //verify that the first blog title has "Axiom"
220        String title = webDriver.findElement(By.xpath("//*[@id=\"main\"]/article[1]/header/h2/a")).getText();
221        assertTrue(title.contains("Axiom"));
222        //Enter the Blog
223        webDriver.findElement(By.xpath("//*[@id=\"main\"]/article[1]/header/h2/a")).click();
224        Thread.sleep(3000);
225        //Assert that the date of post is "January 20, 2023"
226        String time = webDriver.findElement(By.xpath("//*[@id=\"post-18225\"]/footer/span[2]/a/time")).getText();
227        assertEquals("January 20, 2023", time);
228        //Leave a Reply
229        webDriver.findElement(By.xpath("//*[@id=\"comment\"]")).sendKeys("Sample Text");
230        webDriver.findElement(By.xpath("//*[@id=\"author\"]")).sendKeys("Hanah");
231        webDriver.findElement(By.xpath("//*[@id=\"email\"]")).sendKeys("some.email@gmail.com");
232        webDriver.findElement(By.xpath("//*[@id=\"url\"]")).sendKeys("some url");
233        Thread.sleep(3000);
234        //This part is commented so that it doesn't send the message because I don't want to bother NASA
235        //webDriver.findElement(By.xpath("//*[@id=\"submit\"]")).click();
236    }
```

3.8. Example Scenario: Confirm the article and pdf link on Astronaut page

As a user, I would like to have a responsive article and updated information about activities and eventually a functional link for pdf resource.

Test Name: This test is designed to confirm that the correct article and pdf link are present on the Astronaut page of a website.				
Description:				
Pre-condition(s):				
Test Steps: 1. Open NASA main page 2. Go to College and University site 3. Go to Career page 4. Go to "Astronaut Information." 5. Check if the article is correct	**Test Data:**	**Expected Result:** All the assert statements are passing, indicating that the test has successfully navigated to the correct pages and verified that the correct text is	**Actual Result:** All the assert statements are passing, indicating that the test has successfully navigated to the correct pages and verified that the correct text is	**Status:** PASS

6. Check the astronaut facebook link 7.Confirm the pdf link		present on the page. The correct link is clicked, and it redirects to the desired pdf	present on the page. The correct link is clicked, and it redirects to the desired pdf	
Notes:				

```
239    */@Test
240    //Test8
241    public void test()throws InterruptedException {
242
243        webDriver.get(baseUrl);
244        webDriver.manage().window().maximize();
245        Thread.sleep(2000);
246        webDriver.get(baseUrl);
247        //Go to College and University site
248        webDriver.findElement(By.xpath("//*[@id=\"nasa-main-menu\"]/li[8]/a")).click();
249        webDriver.findElement(By.xpath("//*[@id=\"nasa-main-menu\"]/li[8]/ul/li[8]/a")).click();
250        Thread.sleep(3000);
251        //Go to Career
252        webDriver.findElement(By.xpath("//*[@id=\"ember39\"]")).sendKeys("Astronaut Information");
253        webDriver.findElement(By.xpath("//*[@id=\"ember38\"]/div/div/button")).click();
254        Thread.sleep(3000);
255        //Go to "Astronaut Information"
256        webDriver.findElement(By.xpath("//*[@id=\"ember51\"]/div[3]/div/h4/a")).click();
257        Thread.sleep(3000);
258        //Check is this article
259        String text = webDriver.findElement(By.xpath("/html/body/div[3]/div[1]/div[6]/div[2]/div/div/ol/li[2]/section/p[1]")).getText();
260        assertEquals("Educators", text);
261        //Click the astronaut facebook link
262        webDriver.findElement(By.xpath("/html/body/div[3]/div[1]/div[6]/div[2]/p/a")).click();
263        Thread.sleep(3000);
264        webDriver.findElement(By.xpath("/html/body/div[3]/div[3]/section/section/div[2]/div/div/div/h3[1]/a")).click();
265        Thread.sleep(3000);
266        //Confirm that you are on this pdf "https://www.nasa.gov/pdf/740566main_current.pdf"
267        String url = webDriver.getCurrentUrl();
268        assertEquals("https://www.nasa.gov/pdf/740566main_current.pdf", url);
269
270    }
271    /*
```

3.9. Example Scenario: Test the Topics page and verify its content

As a user, I would like to see an overview of various scientific and technological areas of focus for NASA, such as space exploration, earth science, aeronautics, and astrobiology.

Test Name: This test is designed to verify the content of a Topics page on a website				
Description: Check if the page and its content is responsive				
Pre-condition(s):				
Test Steps: 1. Open NASA main page 2. Go to Space Tech 3. Go to Orion Spacecraft 4. Select the topic "Bird, Rocket Prepare for Flight at Kennedy Space Center." 5. Assert that the editor is "Monika Luabeya." 6. Go back to main using the icon in top left corner	**Test Data:**	**Expected Result:** All the assert statements are passing, indicating that the test has successfully navigated to the correct pages and the correct text is presented on the page.	**Actual Result:** All the assert statements are passing, indicating that the test has successfully navigated to the correct pages and the correct text is presented on the page.	**Status:** PASS
Notes:				

```
273⊝     */@Test
274     //Test9
275     public void test()throws InterruptedException {
276
277             webDriver.get(baseUrl);
278             webDriver.manage().window().maximize();
279             Thread.sleep(2000);
280             webDriver.get(baseUrl);
281             //Go to Space Tech
282             webDriver.findElement(By.xpath("//*[@id=\"nasa-main-menu\"]/li[1]/ul/li[4]/a")).click();
283             Thread.sleep(2000);
284             //Go to Orion Spacecraft
285             webDriver.findElement(By.xpath("//*[@id=\"ember45\"]/section/div[2]/ul/li[3]/a")).click();
286             Thread.sleep(2000);
287             //Select the topic "Bird, Rocket Prepare for Flight at Kennedy Space Center"
288             webDriver.findElement(By.xpath("/html/body/div[3]/div[3]/section/section/div[2]/div/div[2]/div/div[1]/a[7]")).click();
289             Thread.sleep(2000);
290             String title = webDriver.findElement(By.xpath("/html/body/div[3]/div[2]/section/section/div[2]/div/div[1]/div[1]/div[2]/div[1]/div[3]/h1")).getText();
291             assertEquals("Bird, Rocket Prepare for Flight at Kennedy Space Center",title);
292             // assert that the editor is "Monika Luabeya"
293             String text = webDriver.findElement(By.xpath("/html/body/div[3]/div[2]/section/section/div[2]/div/div[1]/div[1]/div[2]/section/div[1]/div/div[2]")).getText();
294             assertTrue(text.contains("Monika Luabeya"));
295             //Go back to main usingthe icon in top left corner
296             webDriver.findElement(By.xpath("/html/body/div[2]/div/nav/div[1]/a")).click();
297             Thread.sleep(2000);
298             String url = webDriver.getCurrentUrl();
299             assertEquals(baseUrl, url);
300         }
```

3.10. Example Scenario: Testing the Missions Page and Its content

As a user, I would like to see a comprehensive and detailed Missions page on the NASA website. I would like to see information about past, present and future NASA missions.

Test Name: Testing the Missions Page and Its content				
Description: Check if the page and its content is responsive				
Pre-condition(s):				
Test Steps: 1. Open NASA main page 2. Go to Missions and select "James Webb Space Telescope" 3. Select The first article 4. Check if the author is Peter Sooy 5. Go to "No Fear Act" in the footer of the page 6. Assert that you are on the right page and go back to main page	**Test Data:**	**Expected Result:** The user is taken to the correct new page when clicking on the link and the expected content was successfully displayed.	**Actual Result:** The user is taken to the correct new page when clicking on the link and the expected content was successfully displayed.	**Status:** PASS
Notes:				

```
299⊖    @Test
300     //Test10
301     public void test()throws InterruptedException {
302
303             webDriver.get(baseUrl);
304             webDriver.manage().window().maximize();
305             Thread.sleep(2000);
306             webDriver.get(baseUrl);
307              //Go to Missions and select "James Webb Space Telescope"
308             webDriver.findElement(By.xpath("/html/body/div[2]/div/nav/div[3]/ul/li[2]/a")).click();
309             webDriver.findElement(By.xpath("/html/body/div[2]/div/nav/div[3]/ul/li[2]/ul/li[4]/a")).click();
310             Thread.sleep(3000);
311             //Select The first article
312             webDriver.findElement(By.xpath("/html/body/div[3]/div[3]/section/section/div[2]/div/div[2]/div/div[1]/a[1]")).click();
313             Thread.sleep(3000);
314             //Check if the author is Peter Sooy
315             String by = webDriver.findElement(By.xpath("/html/body/div[3]/div[2]/section/section/div[2]/div/div[1]/div[1]/div[2]/se
316             assertEquals("Peter Sooy", by);
317             //Go to "No Fear Act" in the footer of the page
318             webDriver.findElement(By.xpath("/html/body/div[3]/div[2]/section/section/div[2]/div/div[3]/div/ul/li[1]/a")).click();
319             Thread.sleep(3000);
320             //Assert that you are on the right page and go back to main page
321             String check = webDriver.findElement(By.xpath("/html/body/div[3]/div[3]/section/section/div[2]/div/h1")).getText();
322             assertEquals("No Fear Act",check);
323             webDriver.findElement(By.xpath("/html/body/div[2]/div/nav/div[1]/a"));
324         }
325
326 }
```

4. Conclusion

4.1. Testing Summary

Provide a summary of all your executed tests. Something like this would be alright:

Testing Tool	Total Tests	Passed Tests	Failed Tests
Eclipse IDE (Selenium, ChromeDriver)	10	10	0

4.2. Final Thoughts

Overall, the NASA website is a well-designed and informative resource for anyone interested in space exploration and scientific research. The site is easy to navigate, with a clear and intuitive layout. The website's content is rich and diverse, covering a wide range of topics related to NASA's mission and research. It provides detailed information about NASA's current and past missions, as well as information about the agency's plans for future missions. The website also offers a variety of educational resources, including interactive multimedia, videos, and images, which can be used to engage and educate visitors of all ages.