

# **SOFTWARE VERIFICATION, VALIDATION AND TESTING**

## **TESTING DOCUMENTATION**

The National Aeronautics and Space Administration (NASA) Website Testing

Prepared by:  
**Hanah Sijerčić**

Proposed to:  
**Samed Jukić, Assist. Prof. Dr.**  
**Aldin Kovačević, Teaching Assistant**

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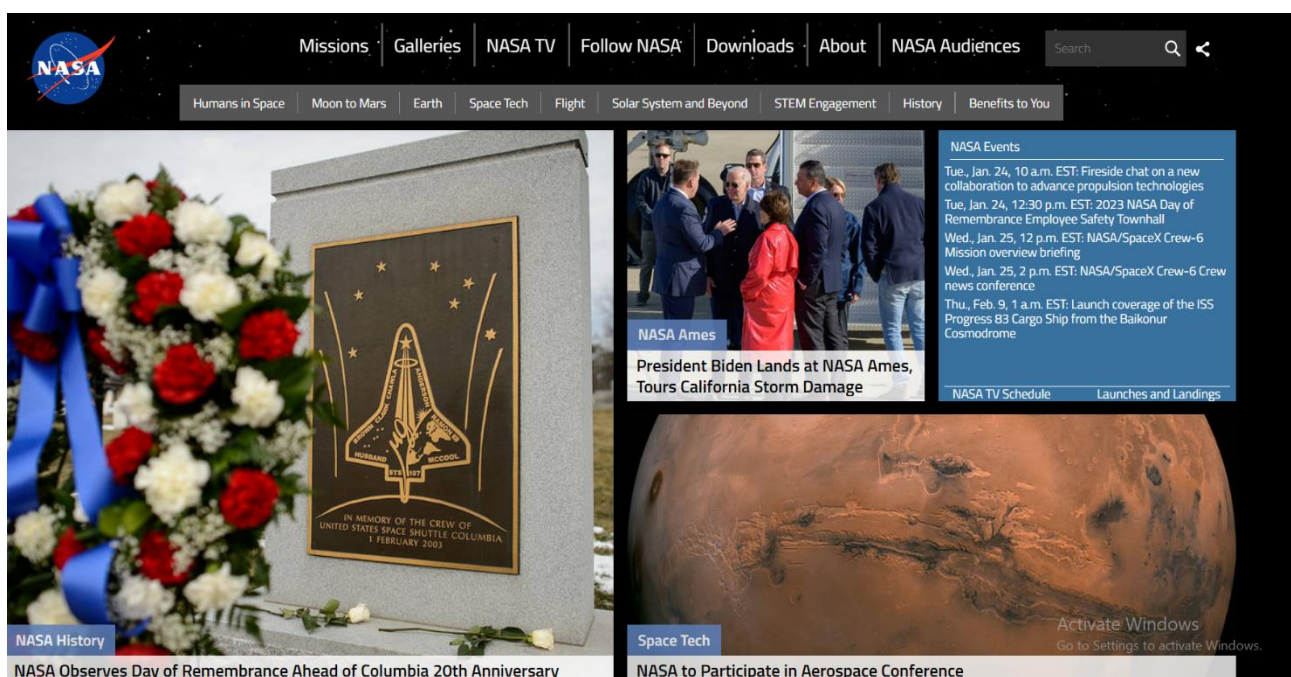
# 1. Introduction

## 1.1. About the Project

The NASA website ([www.nasa.gov](http://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.

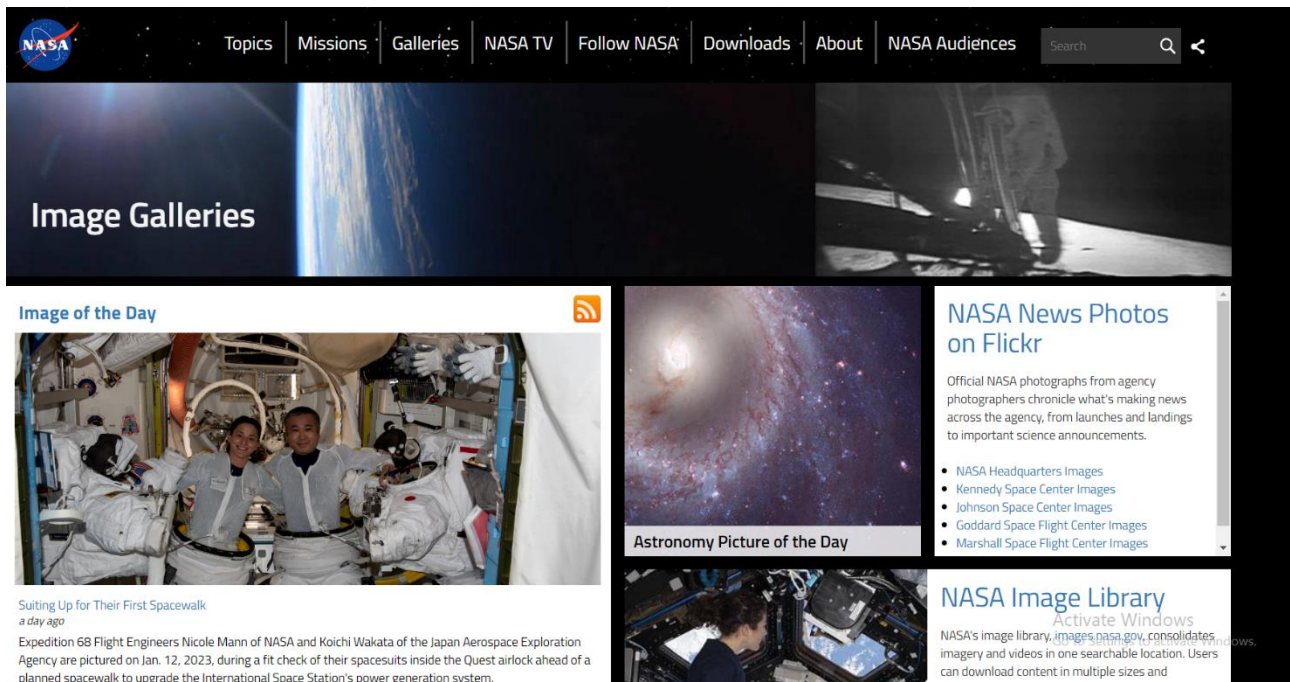
## 1.2. Project Functionalities and Screenshots

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.

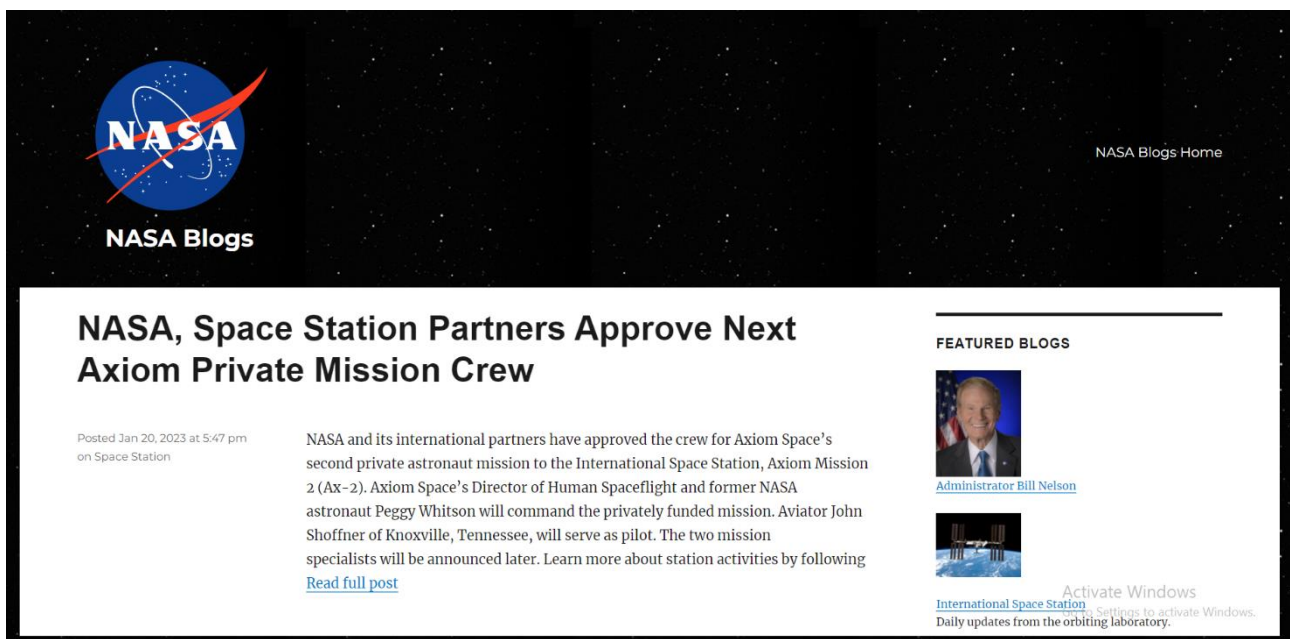


The NASA Galleries page is a section of the NASA website that provides a collection of multimedia resources, including images, videos, and audio files. These resources cover a wide range of topics related to NASA's missions and research, including images of space, celestial bodies, and NASA spacecraft, 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.

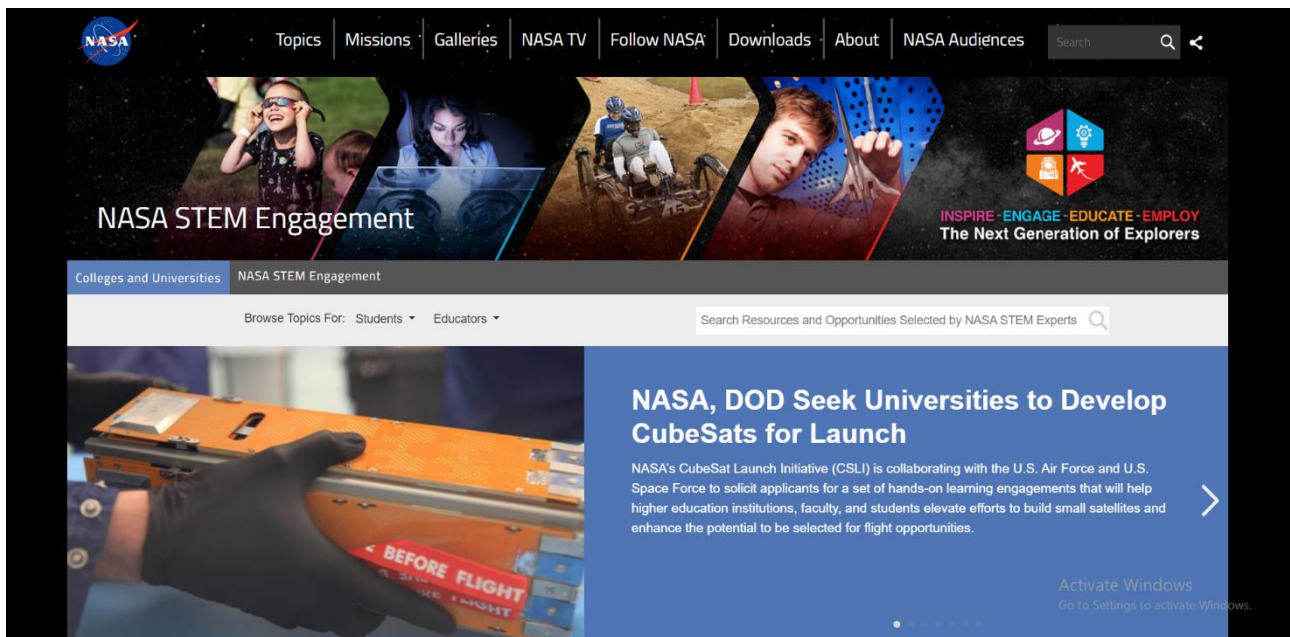


The NASA downloads section is a section of the NASA website that provides access to a wide range of resources that can be downloaded for personal or educational use. These resources include images, videos, audio files, software, and other materials that cover a variety of topics related to NASA's missions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

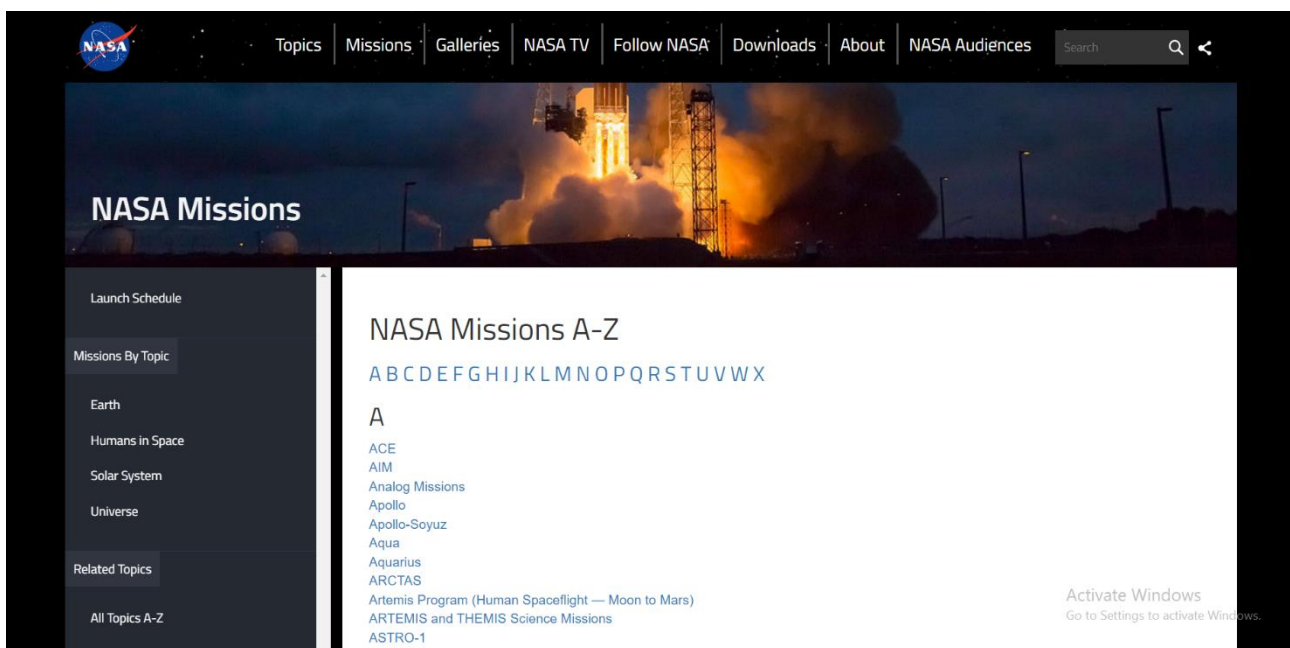




The NASA Audience page is a section of the NASA website that provides resources for specific groups of people such as students, educators, media and industry professionals, and the public. It serves as a valuable resource for everyone that is looking to engage with NASA's work and mission.



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):				
<b>Test Steps:</b> 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: <a href="https://www.nasa.gov/feature/ames/chemin">https://www.nasa.gov/feature/ames/chemin</a> 6. Go back to NASA Home Page 7. Assert that you are back at the main page	<b>Test Data:</b>	<b>Expected Result:</b> Filter accurately and efficiently searched through the website's content and returned relevant results that matched the search criteria entered by the user.	<b>Actual Result:</b> Filter accurately and efficiently searched through the website's content and returned relevant results that matched the search criteria entered by the user.	<b>Status:</b>  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 }

```

### 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):				
<b>Test Steps:</b> 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 Satellite. 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	<b>Test Data:</b>	<b>Expected Result:</b> All the elements are located and selected successfully without interruptions. Links and assert statements are working properly and are directed to the proper page.	<b>Actual Result:</b> All the elements are located and selected successfully without interruptions. Links and assert statements are working properly and are directed to the proper page.	<b>Status:</b> PASS



## Notes:

```
62 //Test2
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/div[2]/h4/a")).click();
80     Thread.sleep(5000);
81     //Assert that the image was taken by the Aqua Satellite
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:	Test Data:	Expected Result:	Actual Result:	Status:
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		The video on the NASA website has a clear and engaging narrative, high-quality visuals, and informative content that is easy to understand.	The video on the NASA website has a clear and engaging narrative, high-quality visuals, and informative content that is easy to understand.	PASS

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				
<b>Description:</b> 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.				
<b>Pre-condition(s):</b>				
<b>Test Steps:</b> 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	<b>Test Data:</b>	<b>Expected Result:</b> 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.	<b>Actual Result:</b> 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.	<b>Status:</b>  PASS
<b>Notes:</b>				

```

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:	Test Data:	Expected Result:	Actual Result:	Status:
1. Open NASA main page 2. Go to "Contact NASA" at bottom of page 3. Fill in the required information 4. Send message	The data used in this test are user credentials and user's comment.	The contact us form is fully functional, easy to use, and able to receive and process user's inquiries effectively.	The contact us form is fully functional, easy to use, and able to receive and process user's inquiries effectively.	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
171 }

```

### 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:				
<pre>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/div[1]/div[1]/h3/span")).getText(); 204     assertEquals("Mass Spectrometer Destined for the Moon Finishes Testing at Kennedy", text3); 205 }</pre>				

### 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):				
<b>Test Steps:</b> 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	<b>Test Data:</b> The data used in this test are user credentials and user's comment.	<b>Expected Result:</b> The expected result for the test would be that the NASA blog page is fully functional and usable, which is successfully confirmed.	<b>Actual Result:</b> The expected result for the test would be that the NASA blog page is fully functional and usable, which is successfully confirmed.	<b>Status:</b> PASS
Notes:				

```

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):				
<b>Test Steps:</b> 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	<b>Test Data:</b>	<b>Expected Result:</b> All the assert statements are passing, indicating that the test has successfully navigated to the correct pages and verified that the correct text is	<b>Actual Result:</b> All the assert statements are passing, indicating that the test has successfully navigated to the correct pages and verified that the correct text is	<b>Status:</b> 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	

A

### 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				
<b>Description:</b> Check if the page and its content is responsive				
<b>Pre-condition(s):</b>				
<b>Test Steps:</b> 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	<b>Test Data:</b>	<b>Expected Result:</b> 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.	<b>Actual Result:</b> 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.	<b>Status:</b>  PASS
<b>Notes:</b>				

```

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[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 using the 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:	Test Data:	Expected Result:	Actual Result:	Status:
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		The user is taken to the correct new page when clicking on the link and the expected content was successfully displayed.	The user is taken to the correct new page when clicking on the link and the expected content was successfully displayed.	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.