

COMP 3133 – Lab Test – 2 (06%)

Submission Date and Time: 02nd April 2025, 08:30 PM (Week – 13)

Objective: Create an Angular application to implement the following features.

Instructions:

1. Create the Angular Application: (10 points)

- Create an Angular app named `studentid-lab-test2-comp3133`. *e.g. 1012355-lab-test2-comp3133*
- Initialize a GitHub repository and commit all your code to it.

2. Host the Application: (10 points)

- Deploy your Angular application on a hosting platform (such as [Vercel](#), [Railway](#), [Render](#), Docker, etc.).

3. Create `MissionList` Component: (20 points)

- Create a component named `missionlist` to display a list of all SpaceX launches using the provided REST API endpoint.

Endpoint: [SpaceX Launches API](#)

- Display the following fields for each mission:
 - `flight_number`
 - `mission_name`
 - `launch_year`
 - `details`
 - `mission_patch_small`
 - `rocket`
 - 1. `rocket_name`
 - 2. `rocket_type`
 - `links`
 - 1. `mission_patch_small`
 - 2. `article_link`
 - 3. `Wikipedia`
 - 4. `video_link`

4. Implement Search or Filter by Launch Year: (10 points)

- Create a `missionfilter` component that allows users to search/filter missions by their year of launch.

Endpoint: [SpaceX Launch Filter API](#)

5. Create `MissionDetails` Component: (20 points)

- Create a component named `missiondetails` to display detailed information about a selected mission from the `missionlist` component.

Endpoint: [SpaceX Mission Details API](#)

- Hint: Pass data to the `missiondetails` component using `@Input()` or use Route parameter.

6. Create Service to Fetch Data: (10 points)

- Create a service to fetch data from the provided SpaceX REST API.

7. Create Interface/Class for Data Structure: (10 points)

- Create an interface or class to define the structure of the data fetched from the SpaceX API.

8. Use Angular Material for Design: (10 points)

- Use Angular Material components to enhance the design and user interface of the application.

Additional Optional Instructions (for using GraphQL API):

- **Optional:** If you prefer to use a GraphQL API instead of the REST API, you can integrate the SpaceX GraphQL API into your Angular application.
 - SpaceX GraphQL API: [SpaceX GraphQL](#)

In this case, you will need to:

- Set up a GraphQL client (e.g., Apollo Client) in your Angular project.
- Modify the components and services to query the SpaceX GraphQL API instead of the REST API.
- Update the data fetching and filtering logic to match the structure of the GraphQL API responses.

This option is **not mandatory**, but it may help you learn about integrating GraphQL with Angular.

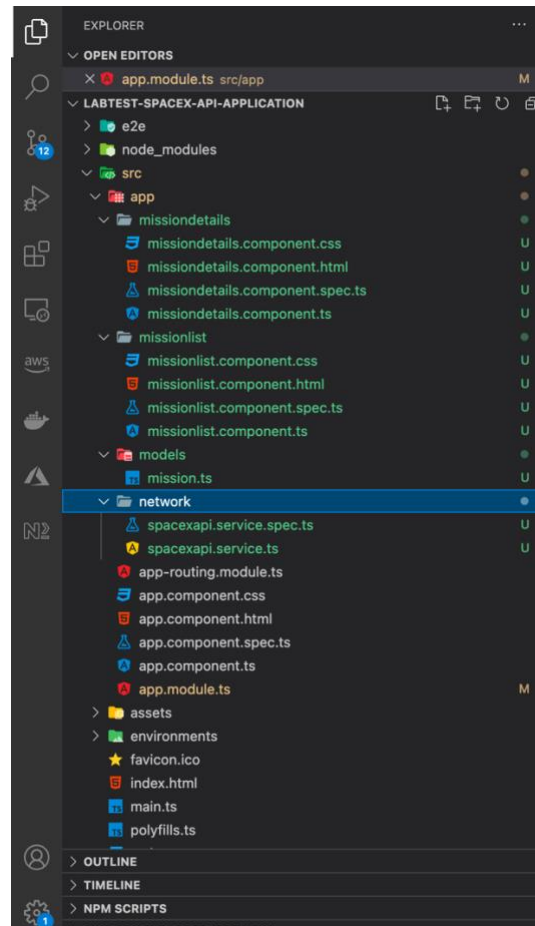
Submission Requirements:

1. **Upload the Source Code:**
 - Upload a ZIP file containing your source code to Blackboard before the deadline.
2. **Provide GitHub Repository Link:**
 - In the comments section of your submission, include the link to your GitHub repository.
3. **Screenshots:**
 - Take screenshots of both pages of your application and upload them to D2L to show evidence of your work **outside ZIP file**.
4. **Hosting Link:**
 - Provide the link to your hosted application (on Render, Vercel, Railway, docker or another platform).

References for SpaceX API:

- [SpaceX REST API Documentation](#)
- **Optional:** [SpaceX GraphQL API Documentation](#)

Folder Structure of application



Sample Screen

Figure 1 Mission List






SpaceX Mission Launch List	
	FalconSat 2006 Engine failure at 33 seconds and loss of vehicle
	DemoSat 2007 Successful first stage burn and transition to second stage, maximum altitude 289 km, Premature engine shutdown at T+7 min 30 s, Failed to reach orbit, Failed to recover first stage
	Trailblazer 2008 Residual stage 1 thrust led to collision between stage 1 and stage 2
	RatSat 2008 Ratsat was carried to orbit on the first successful orbital launch of any privately funded and developed, liquid-propelled carrier rocket, the SpaceX Falcon 1
	RazakSat 2009

Figure 2 Mission filter

Launch Date

2006

2007

2008

2009

2010

2011

2012

2013

2014

2015

2016

2017

2018

2019

2020

Successful Launch

true

false

Successful Land

true

false



FalconSat #1

Mission Ids -

Launch Year 2006

Successful Launch No

Successful Landing No Data



DemoSat #2

Mission Ids -

Launch Year 2007

Successful Launch No

Successful Landing No Data



Trailblazer #3

Mission Ids -

Launch Year 2008

Successful Launch No

Successful Landing No Data



RatSat #4

Mission Ids -

Launch Year 2008

Successful Launch Yes

Successful Landing No Data



RazakSat #5

Mission Ids -

Launch Year 2008

Successful Launch No

Successful Landing No Data



Falcon 9 Test Flight #6

Mission Ids EE86F74

Launch Year 2015

Successful Launch Yes

Successful Landing Yes



COTS 1 #7

Mission Ids EE86F74

Launch Year 2010

Successful Launch Yes

Successful Landing Yes



COTS 2 #8

Mission Ids EE86F74

Launch Year 2010


Successful Launch Yes

Successful Landing Yes

Developed By - Jeevan Praksah

Figure 3 Mission Details

SpaceX Mission Details



Mission - ABS-3A / Eutelsat 115W B

Name : ABS-3A / Eutelsat 115W B

Launch Year: 2015

Launch Year: 2015

Rocket

Name : Falcon 9

Type : v1.1

Launch Site

Name : Cape Canaveral Air Force Station Space Launch Complex 40

Launch Details

The launch was Boeing's first-ever conjoined launch of a lighter-weight dual-commsat stack that was specifically designed to take advantage of the lower-cost SpaceX Falcon 9 launch vehicle. Per satellite, launch costs were less than \$30 million. The ABS satellite reached its final destination ahead of schedule and started operations on September 10.

More Info on Launch Details