

# **STAR LION COLLEGE OF ENGINEERING AND TECHNOLOGY**

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<b>Department</b>	<b>Computer Science and Engineering</b>
<b>Project</b>	<b>Personal Blog on IBM Cloud Static Web apps</b>
<b>Register Number</b>	<b>822021104003</b>
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# **Personal Blog on IBM Cloud Static Web Apps**

## **Phase-5 Submission Document**

**Project Title:** Personal Travel Blog

### **Documentation Part**

#### **Project Objective:**

##### **Objective:**

Develop a personal blog web application that allows users to create, edit, and publish blog posts. The web app should have a user-friendly interface, responsive design, and essential features such as user authentication, category management, and social media sharing options. The goal is to provide a platform for individuals to share their thoughts, experiences, and expertise through written content.

#### **Design Thinking Process:**

##### 1. Empathize:

- Understand the needs and preferences of bloggers through surveys and interviews.
- Identify common challenges faced by bloggers, such as content management and reaching a wider audience.
- Create user personas to represent the target audience and their goals.

##### 2. Define:

- Define the key features of the blog web application, including user authentication, post creation/editing, category management, and social media integration.
- Establish the design principles, such as simplicity, readability, and easy navigation.
- Clearly outline the problem statement, focusing on enhancing the blogging experience for users.

##### 3. Ideate:

- Brainstorm creative ideas for the blog app's user interface, considering intuitive content editing, interactive elements, and visually appealing layouts.
- Explore innovative features like real-time collaboration, multimedia integration, or personalized content recommendations.
- Prioritize ideas based on feasibility, user value, and alignment with the project goals.

#### 4. Prototype:

- Create wireframes and interactive prototypes showcasing the blog app's layout and user interactions.
- Conduct usability testing with potential users to gather feedback on the prototype's design and functionality.
- Iterate on the prototype based on user feedback, refining the user interface and user experience.

#### 5. Test:

- Perform usability testing with a diverse group of users to ensure the web app is intuitive and easy to use.
- Identify pain points, navigation issues, or any confusion users might face during the interaction.
- Make necessary adjustments to the design and features based on user testing results.

### **Development Phases:**

#### 1. Planning:

- Define the technical requirements, including the choice of web technologies, frameworks, and hosting platforms.
- Create a detailed project plan outlining tasks, milestones, and deadlines.
- Set up version control, project management, and communication tools for the development team.

#### 2. Design:

- Develop the application architecture, database schema, and API specifications.
- Design the user interface, focusing on responsive layouts for various devices (desktops, tablets, and smartphones).
- Create design mockups, style guides, and visual assets for the development team to implement.

#### 3. Development:

- Implement frontend components using HTML, CSS, and JavaScript frameworks (e.g., React, Angular, or Vue.js).
- Develop backend functionalities for user authentication, blog post management, and category handling using appropriate server-side technologies (e.g., Node.js, Django, or Ruby on Rails).
- Set up the database system for storing user data, blog posts, and related content.

#### 4. Testing:

- Conduct unit testing for individual components and functions to ensure they work as intended.
- Perform integration testing to validate interactions between frontend and backend systems.
- Test the application's responsiveness and performance across different devices and web browsers.

#### 5. Deployment:

- Deploy the blog web application to a web server or cloud platform (e.g., AWS, Heroku, or Vercel).
- Configure domain, SSL certificates, and server settings for secure and reliable access.
- Monitor the application's performance, server health, and user interactions after deployment.

#### 6. Launch:

- Announce the blog web application's launch through social media, email newsletters, and relevant online communities.
- Gather user feedback and monitor the application's usage patterns.
- Address any post-launch issues, bugs, or user concerns promptly.

#### 7. Post-Launch Support and Updates:

- Provide customer support for user inquiries and technical assistance.
- Regularly update the blog web application with new features, improvements, and security patches.
- Analyze user feedback and usage data to inform future updates and enhancements, ensuring the continuous improvement of the blog platform.

### **Website Structure:**

#### 1. Homepage:

- **Featured Posts:** Display a selection of recent or popular blog posts.
- **Introduction:** Briefly introduce the blog and its author(s).
- **Categories:** Provide links to different blog categories for easy navigation.
- **Search Bar:** Allow users to search for specific topics or posts.

## 2. Blog Posts:

- Individual Post Pages: Each blog post has its dedicated page.
- Title: Display the post title prominently.
- Author: Show the author's name and profile picture.
- Content: Present the main text content of the blog post.
- Comments: Allow readers to leave comments and engage in discussions.
- Related Posts: Suggest related articles to keep users engaged.

## 3. User Interaction:

- User Registration/Login: Allow users to create accounts and log in to personalize their experience.
- User Profiles: Users can customize their profiles with bio, profile picture, and social media links.
- Likes and Shares: Enable users to like and share posts on social media platforms.
- Follow/Subscribe: Allow readers to subscribe/follow the blog for updates.

## 4. Content Creation:

- Editor Interface: Provide a user-friendly editor for creating and formatting blog posts (support for rich text, images, videos).
- Categories/Tags: Allow authors to categorize posts and add relevant tags for easy search and navigation.
- Drafts and Revisions: Save drafts and revisions of posts for future editing.
- Scheduled Publishing: Schedule posts to be published at specific dates and times.

## 5. Navigation:

- Menu: Include a navigation menu with links to Home, Categories, About, Contact, and other relevant pages.
- Pagination: Implement pagination for multiple pages of blog posts.
- Archives: Provide an archive section categorizing posts by month and year.
- Search Functionality: Include a robust search feature for users to find specific topics or posts.

## Content Creation:

- Text Content: Authors can write and format their blog posts using the editor interface.
- Multimedia: Support for images, videos, and embedded media in blog posts.
- SEO Optimization: Allow authors to add meta titles, descriptions, and focus keywords for search engine optimization.
- Interactive Elements: polls, quizzes, and embedded social media feeds to engage readers.

## Technical Implementation Details:

### 1. Frontend:

- **HTML/CSS:** Use these technologies to create the website's structure, style, and interactivity.
- **Frontend Framework:** Utilize frameworks like React, Angular, or Vue.js for a dynamic and responsive user interface.
- **Editor:** Integrate a rich text editor like CKEditor or Draft.js for content creation.

### 2. Backend:

- **Server-Side Language:** Choose a backend language such as Node.js, Python (Django), Ruby (Ruby on Rails), or PHP.
- **Database:** Use a relational database (e.g., PostgreSQL, MySQL) to store user data, blog posts, and comments.
- **Authentication:** Implement user authentication using technologies like JWT (JSON Web Tokens) or OAuth for secure user logins and account management.
- **API:** Develop a RESTful API for frontend-backend communication, allowing data exchange between the client and server.

### 3. Data Storage:

- **File Storage:** Store multimedia content (images, videos) in cloud storage services like Amazon S3 or Firebase Storage.
- **Database:** Store blog posts, user profiles, comments, and other data in a structured database for efficient retrieval.

### 4. SEO and Analytics:

- **SEO Optimization:** Implement on-page SEO techniques, including meta tags, headers, and schema markup, to improve search engine visibility.
- **Analytics:** Integrate tools like Google Analytics to track user behavior, traffic sources, and popular content.

### 5. Security:

- **HTTPS:** Secure the website with SSL/TLS encryption (HTTPS) to protect user data during transmission.
- **Data Validation:** Validate user inputs and sanitize data to prevent SQL injection and XSS attacks.
- **Authentication and Authorization:** Ensure secure user authentication and proper authorization to access sensitive functionalities.

## 6. Scalability and Performance:

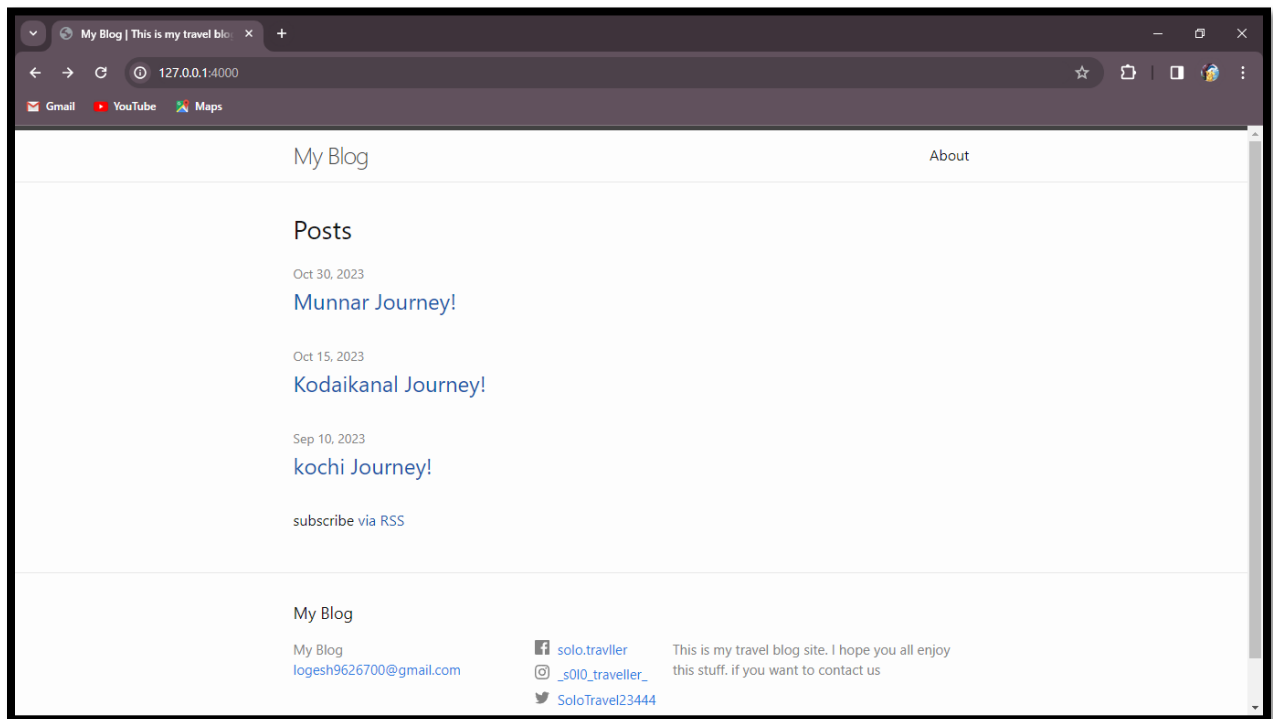
- **Caching:** Implement caching mechanisms to improve website performance and reduce server load.
- **Load Balancing:** If necessary, use load balancing techniques to distribute traffic across multiple servers for scalability.
- **Content Delivery Network (CDN):** Utilize CDNs to cache and serve static assets from servers closer to the user's location, enhancing website speed.

## 7. Deployment and Hosting:

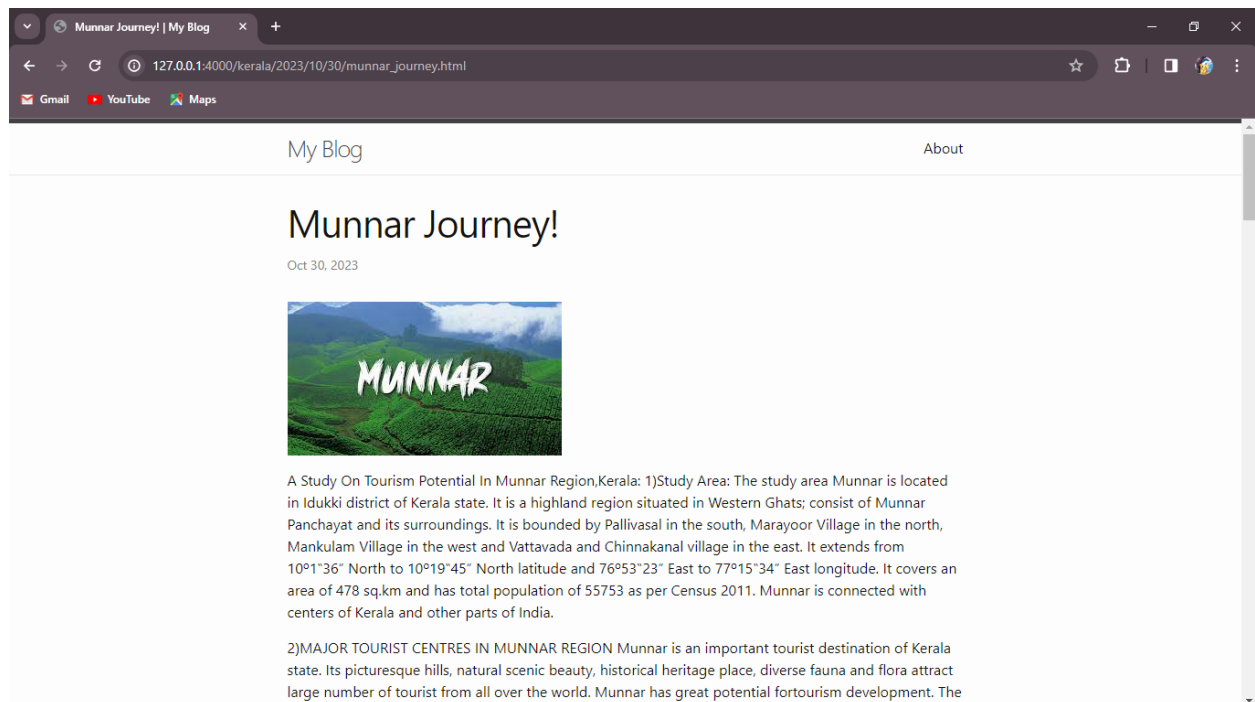
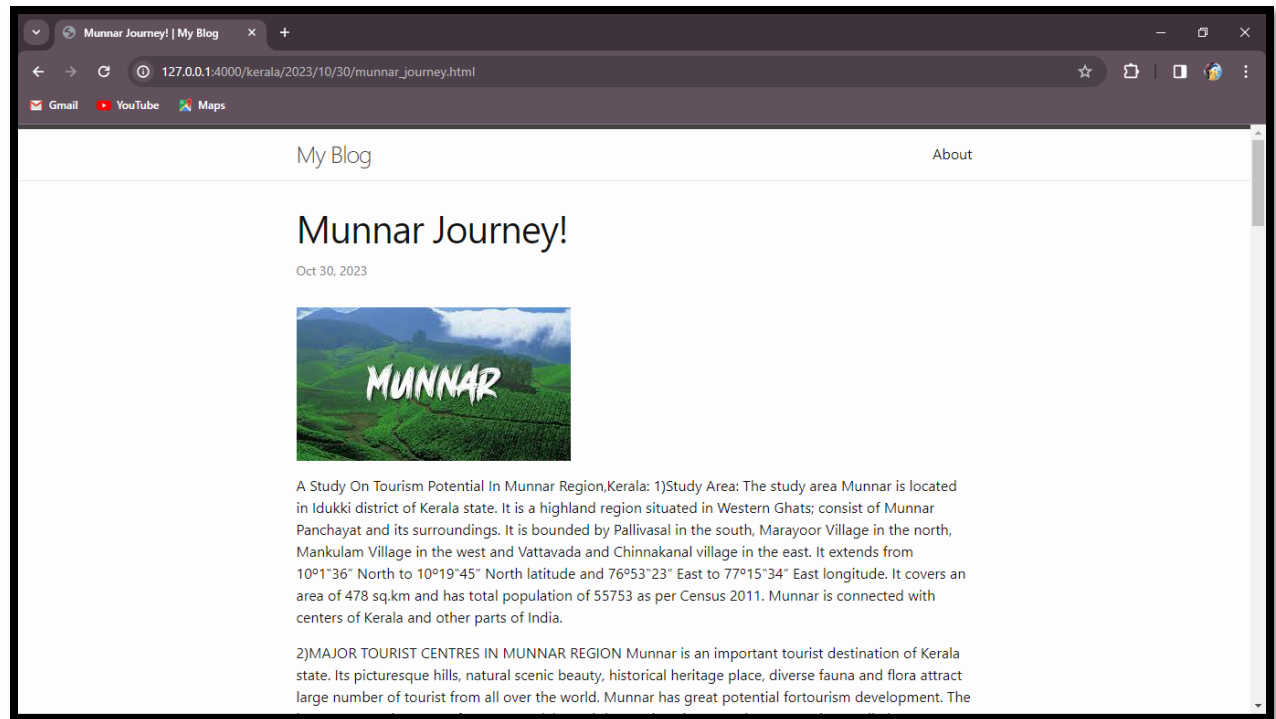
- **Hosting:** Host the web application on reliable hosting platforms like AWS, Heroku, or Vercel.
- **Continuous Deployment:\*\*** Set up continuous integration/delivery (CI/CD) pipelines to automate the deployment process for code changes.
- **Domain and SSL:\*\*** Configure the domain name and SSL certificates for secure and branded access to the website.

## screenshots or images of the blog's user interface :

Home page :



Post page :

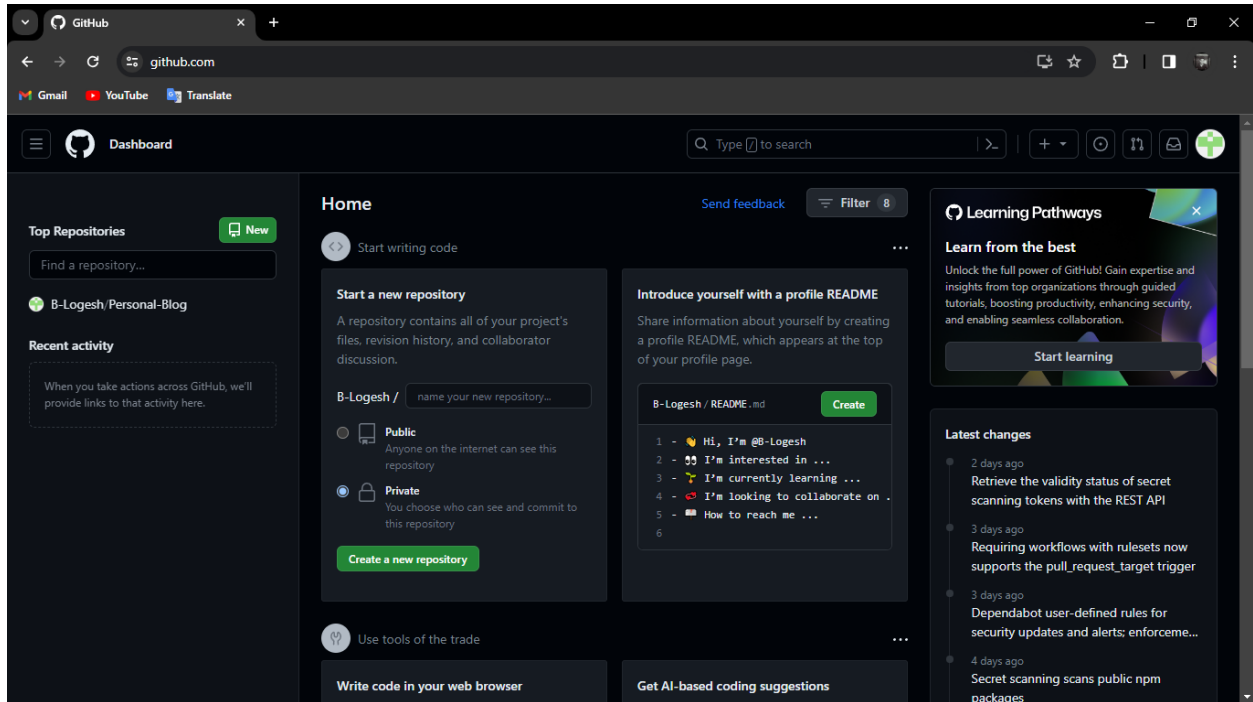




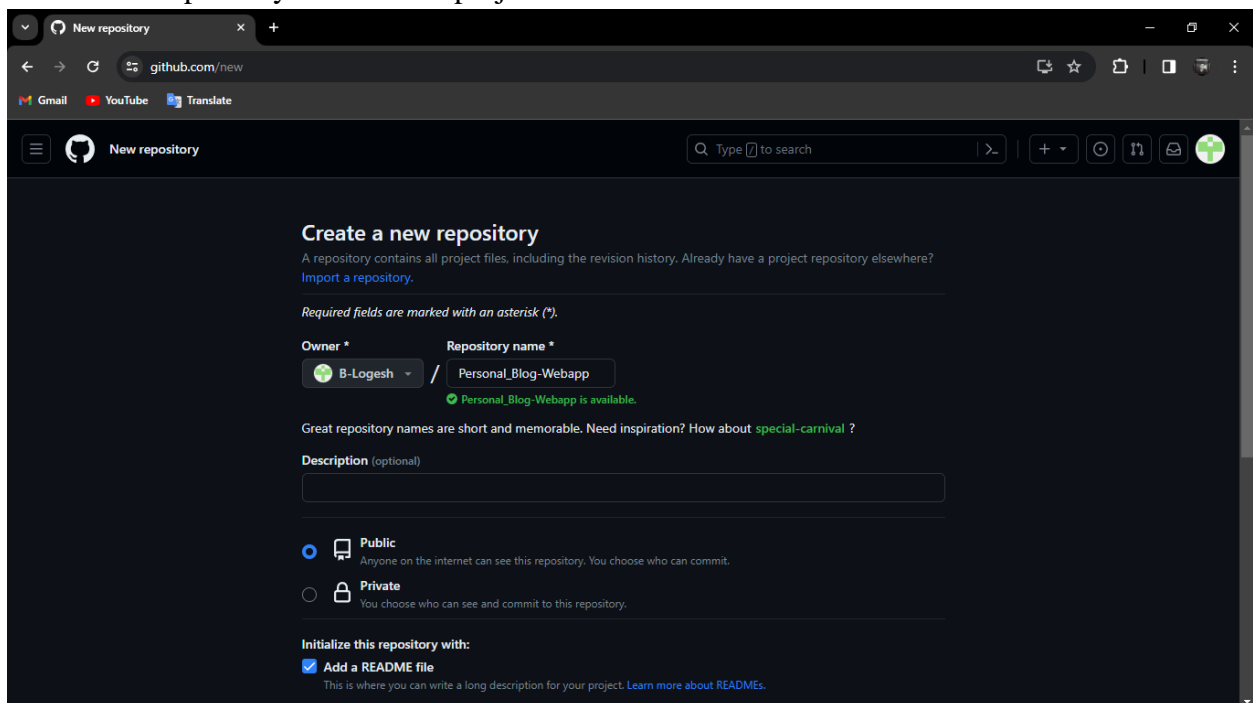
# Submission Part

Github :

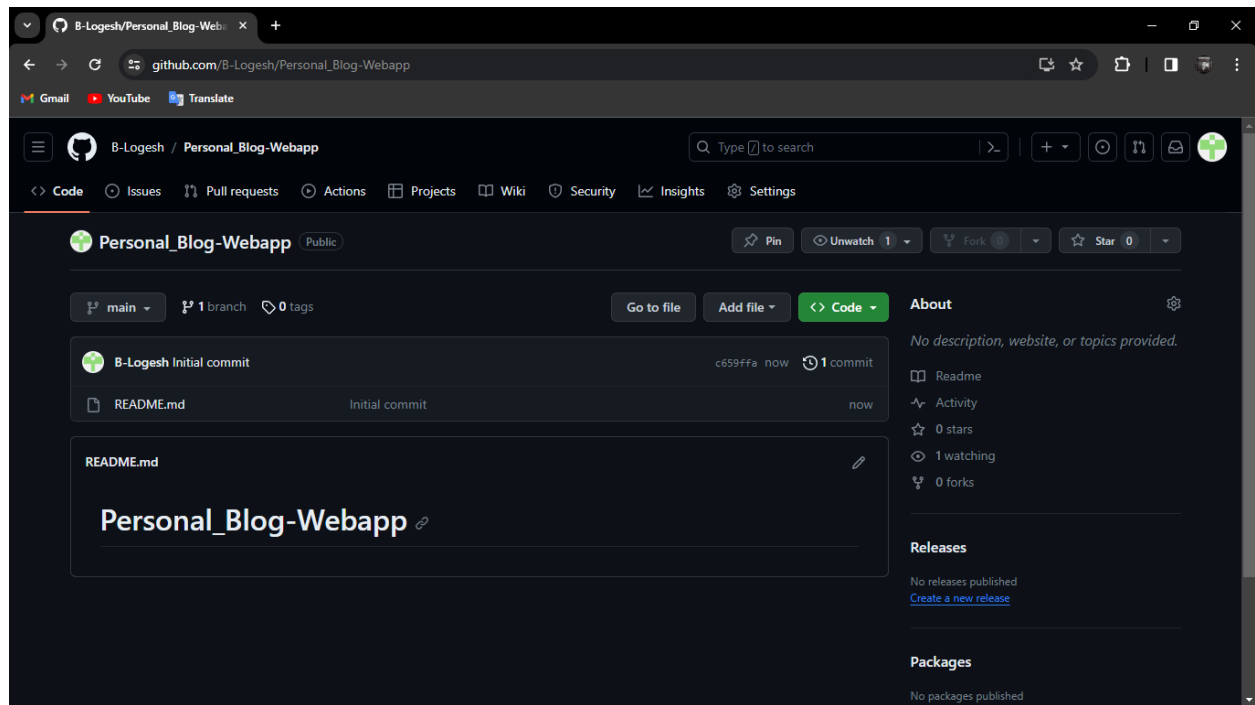
First open your github account home page.



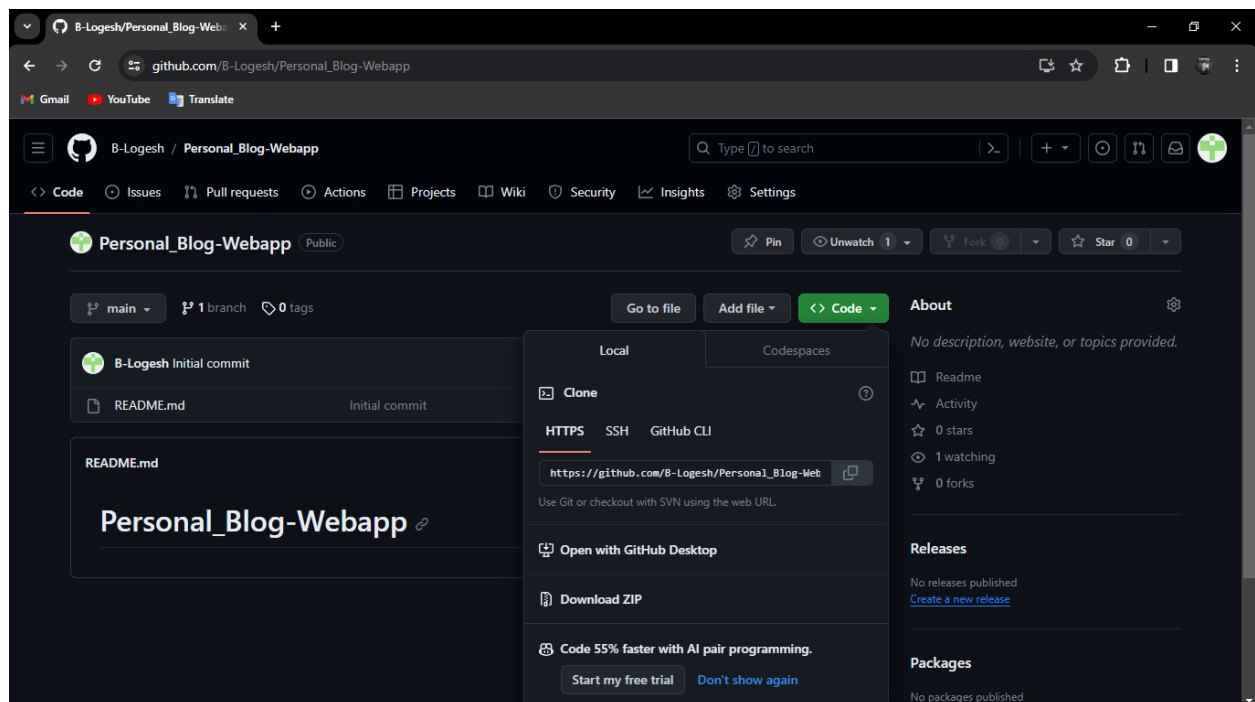
Create new repository and name it project name and add read me file.



After creation of new repository the tab will look like this.

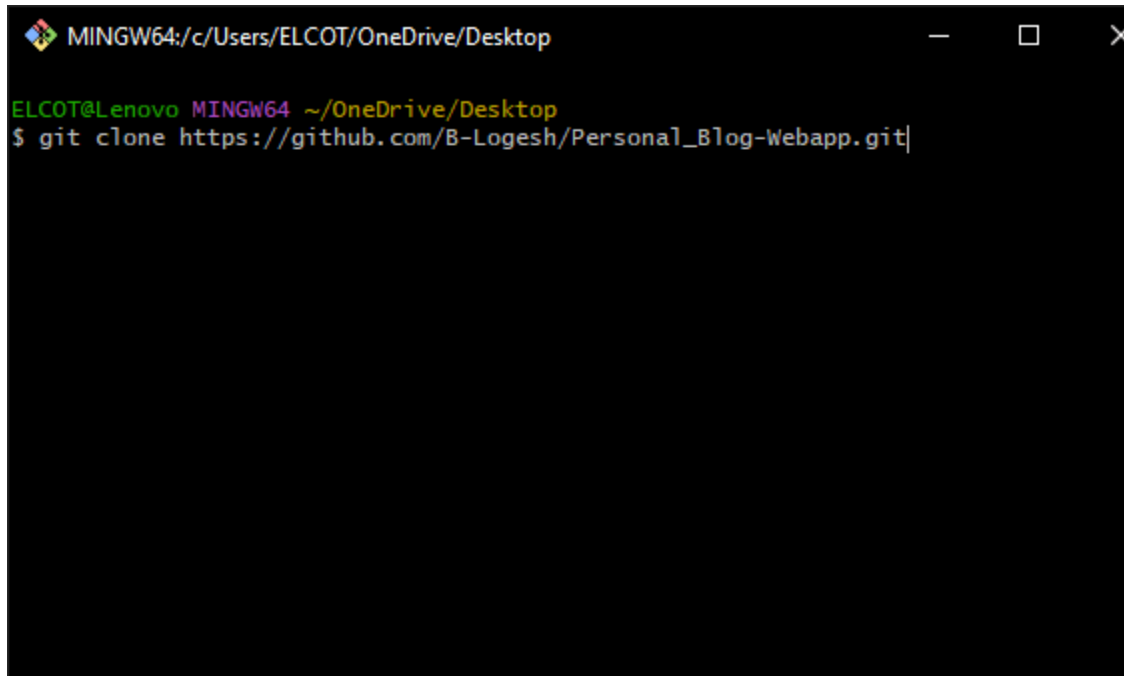


Copy the repository url from the code option.



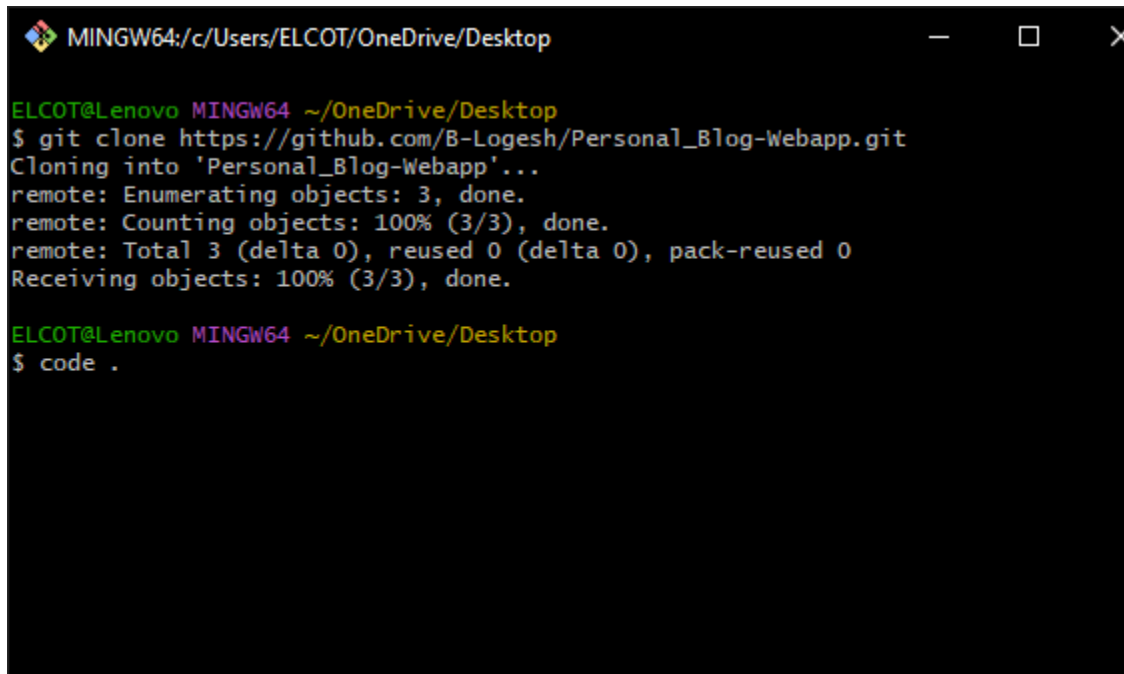
## Git :

Type `git clone <URL>` and press enter.

A terminal window with a black background and white text. The title bar at the top reads 'MINGW64:/c/Users/ELCOT/OneDrive/Desktop'. The prompt is 'ELCOT@Lenovo MINGW64 ~/OneDrive/Desktop'. The command entered is '\$ git clone https://github.com/B-Logesh/Personal\_Blog-Webapp.git'.

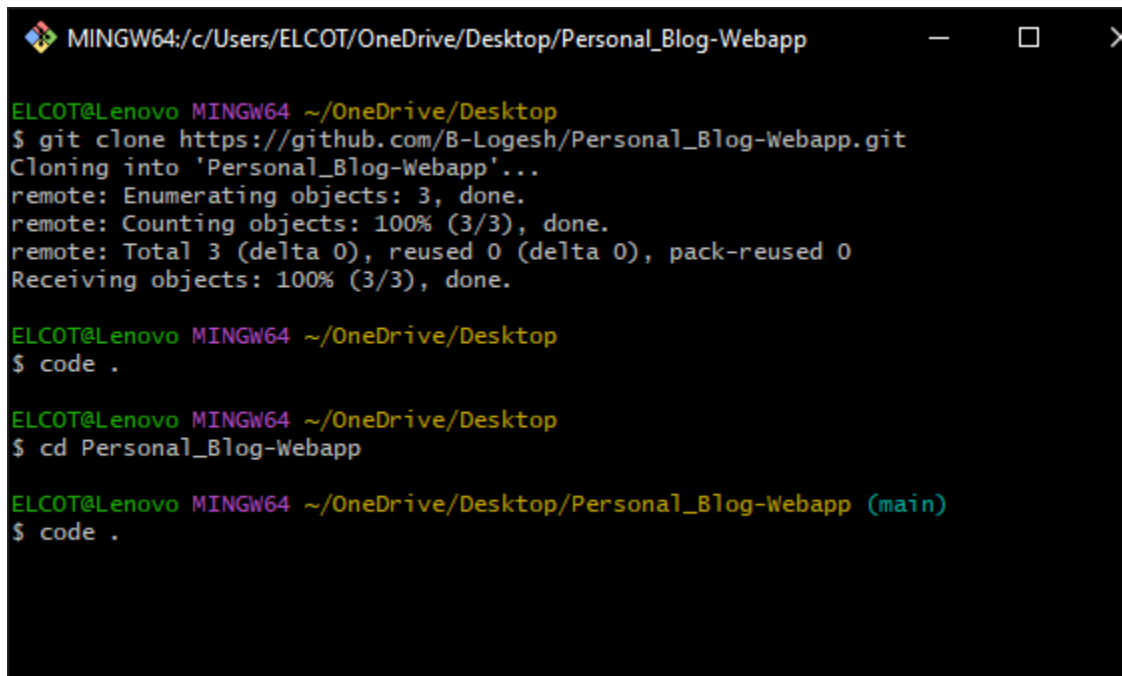
```
MINGW64:/c/Users/ELCOT/OneDrive/Desktop
ELCOT@Lenovo MINGW64 ~/OneDrive/Desktop
$ git clone https://github.com/B-Logesh/Personal_Blog-Webapp.git
```

After pressing enter this tab will show.

A terminal window with a black background and white text. The title bar at the top reads 'MINGW64:/c/Users/ELCOT/OneDrive/Desktop'. The prompt is 'ELCOT@Lenovo MINGW64 ~/OneDrive/Desktop'. The command entered is '\$ git clone https://github.com/B-Logesh/Personal\_Blog-Webapp.git'. The output shows the cloning process: 'Cloning into 'Personal\_Blog-Webapp'...', 'remote: Enumerating objects: 3, done.', 'remote: Counting objects: 100% (3/3), done.', 'remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0', and 'Receiving objects: 100% (3/3), done.'. The prompt then changes to '\$ code .' after the command is executed.

```
MINGW64:/c/Users/ELCOT/OneDrive/Desktop
ELCOT@Lenovo MINGW64 ~/OneDrive/Desktop
$ git clone https://github.com/B-Logesh/Personal_Blog-Webapp.git
Cloning into 'Personal_Blog-Webapp'...
remote: Enumerating objects: 3, done.
remote: Counting objects: 100% (3/3), done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
Receiving objects: 100% (3/3), done.
ELCOT@Lenovo MINGW64 ~/OneDrive/Desktop
$ code .
```

Use `cd <folder name>` to change the directory to the folder.

A terminal window titled 'MINGW64:/c/Users/ELCOT/OneDrive/Desktop/Personal\_Blog-Webapp'. The prompt is 'ELCOT@Lenovo MINGW64 ~/OneDrive/Desktop'. The user enters '\$ git clone https://github.com/B-Logesh/Personal\_Blog-Webapp.git'. The output shows cloning progress: 'Cloning into 'Personal\_Blog-Webapp'...', 'remote: Enumerating objects: 3, done.', 'remote: Counting objects: 100% (3/3), done.', 'remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0', and 'Receiving objects: 100% (3/3), done.'. The user then enters '\$ code .' and the prompt changes to 'ELCOT@Lenovo MINGW64 ~/OneDrive/Desktop'. Next, the user enters '\$ cd Personal\_Blog-Webapp' and the prompt changes to 'ELCOT@Lenovo MINGW64 ~/OneDrive/Desktop/Personal\_Blog-Webapp (main)'. Finally, the user enters '\$ code .' and the prompt remains the same.

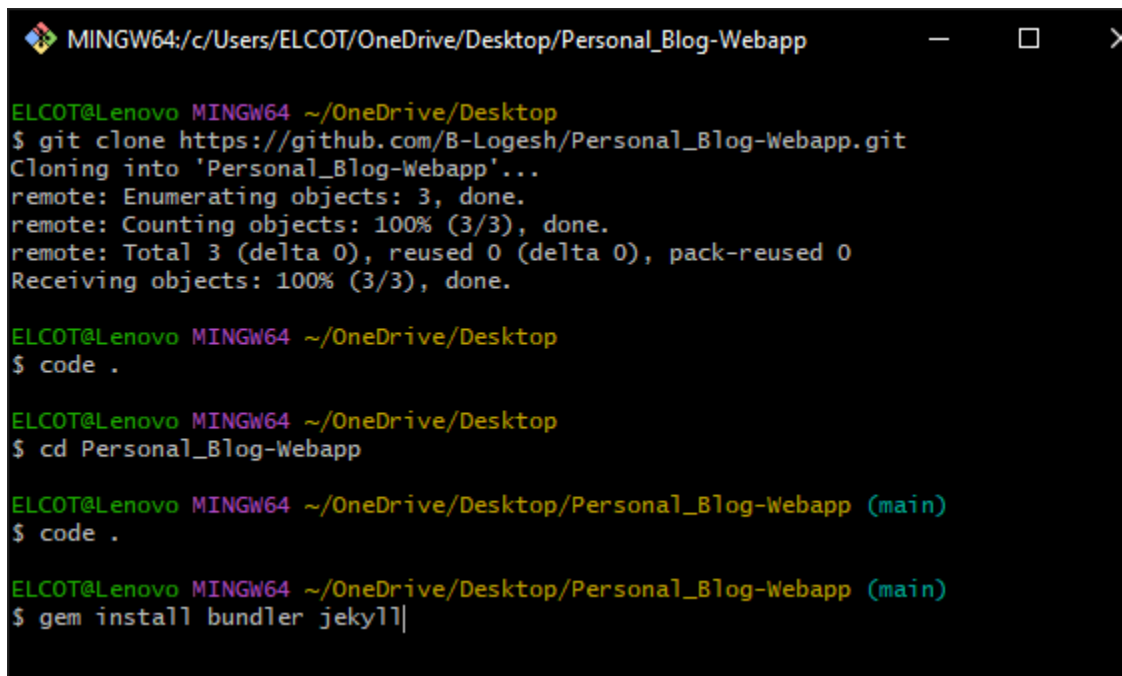
```
ELCOT@Lenovo MINGW64 ~/OneDrive/Desktop
$ git clone https://github.com/B-Logesh/Personal_Blog-Webapp.git
Cloning into 'Personal_Blog-Webapp'...
remote: Enumerating objects: 3, done.
remote: Counting objects: 100% (3/3), done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
Receiving objects: 100% (3/3), done.

ELCOT@Lenovo MINGW64 ~/OneDrive/Desktop
$ code .

ELCOT@Lenovo MINGW64 ~/OneDrive/Desktop
$ cd Personal_Blog-Webapp

ELCOT@Lenovo MINGW64 ~/OneDrive/Desktop/Personal_Blog-Webapp (main)
$ code .
```

Type this command to install Jekyll bundle on the repository.

A terminal window titled 'MINGW64:/c/Users/ELCOT/OneDrive/Desktop/Personal\_Blog-Webapp'. The prompt is 'ELCOT@Lenovo MINGW64 ~/OneDrive/Desktop'. The user enters '\$ git clone https://github.com/B-Logesh/Personal\_Blog-Webapp.git'. The output shows cloning progress: 'Cloning into 'Personal\_Blog-Webapp'...', 'remote: Enumerating objects: 3, done.', 'remote: Counting objects: 100% (3/3), done.', 'remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0', and 'Receiving objects: 100% (3/3), done.'. The user then enters '\$ code .' and the prompt changes to 'ELCOT@Lenovo MINGW64 ~/OneDrive/Desktop'. Next, the user enters '\$ cd Personal\_Blog-Webapp' and the prompt changes to 'ELCOT@Lenovo MINGW64 ~/OneDrive/Desktop/Personal\_Blog-Webapp (main)'. Finally, the user enters '\$ code .' and the prompt remains the same. The last command entered is '\$ gem install bundler jekyll|', which is partially visible.

```
ELCOT@Lenovo MINGW64 ~/OneDrive/Desktop
$ git clone https://github.com/B-Logesh/Personal_Blog-Webapp.git
Cloning into 'Personal_Blog-Webapp'...
remote: Enumerating objects: 3, done.
remote: Counting objects: 100% (3/3), done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
Receiving objects: 100% (3/3), done.

ELCOT@Lenovo MINGW64 ~/OneDrive/Desktop
$ code .

ELCOT@Lenovo MINGW64 ~/OneDrive/Desktop
$ cd Personal_Blog-Webapp

ELCOT@Lenovo MINGW64 ~/OneDrive/Desktop/Personal_Blog-Webapp (main)
$ code .

ELCOT@Lenovo MINGW64 ~/OneDrive/Desktop/Personal_Blog-Webapp (main)
$ gem install bundler jekyll|
```

This tab will show after the Jekyll installation.

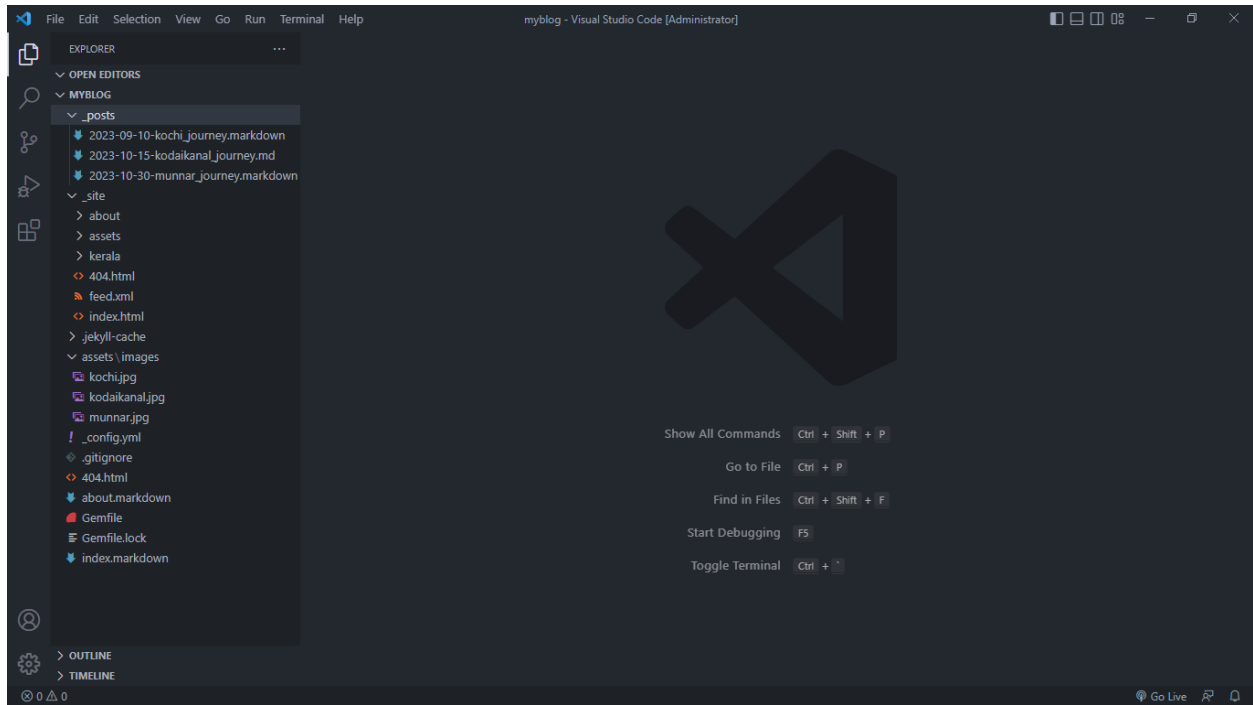
```
MINGW64:/c/Users/ELCOT/OneDrive/Desktop/Personal_Blog-Webapp
Bundler: Fetching tzinfo 2.0.6
Bundler: Installing tzinfo 2.0.6
Bundler: Installing wdm 0.1.1 with native extensions
Bundler: Fetching tzinfo-data 1.2023.3
Bundler: Installing tzinfo-data 1.2023.3
Bundler: Fetching jekyll-feed 0.17.0
Bundler: Installing jekyll-feed 0.17.0
Bundler: Fetching jekyll-seo-tag 2.8.0
Bundler: Installing jekyll-seo-tag 2.8.0
Bundler: Fetching minima 2.5.1
Bundler: Installing minima 2.5.1
Bundler: Bundle complete! 7 Gemfile dependencies, 36 gems now installed.
Bundler: Use 'bundle info [gemname]' to see where a bundled gem is installed. Retrying download gem from https://rubygems.org/ due to error (2/4): Gem::RemoteFetcher::FetchError SocketError: Failed to open TCP connection to rubygems.org:443 (getaddrinfo: No such host is known. ) (https://rubygems.org/gems/rexml-3.2.6.gem)
Bundler: Retrying download gem from https://rubygems.org/ due to error (2/4): Gem::RemoteFetcher::FetchError SocketError: Failed to open TCP connection to rubygems.org:443 (getaddrinfo: No such host is known. ) (https://rubygems.org/gems/wdm-0.1.1.gem)
New jekyll site installed in C:/Users/ELCOT/OneDrive/Desktop/Personal_Blog-Webapp/personal_blog
.
```

Again use `cd <folder name>` to change the directory to the folder.

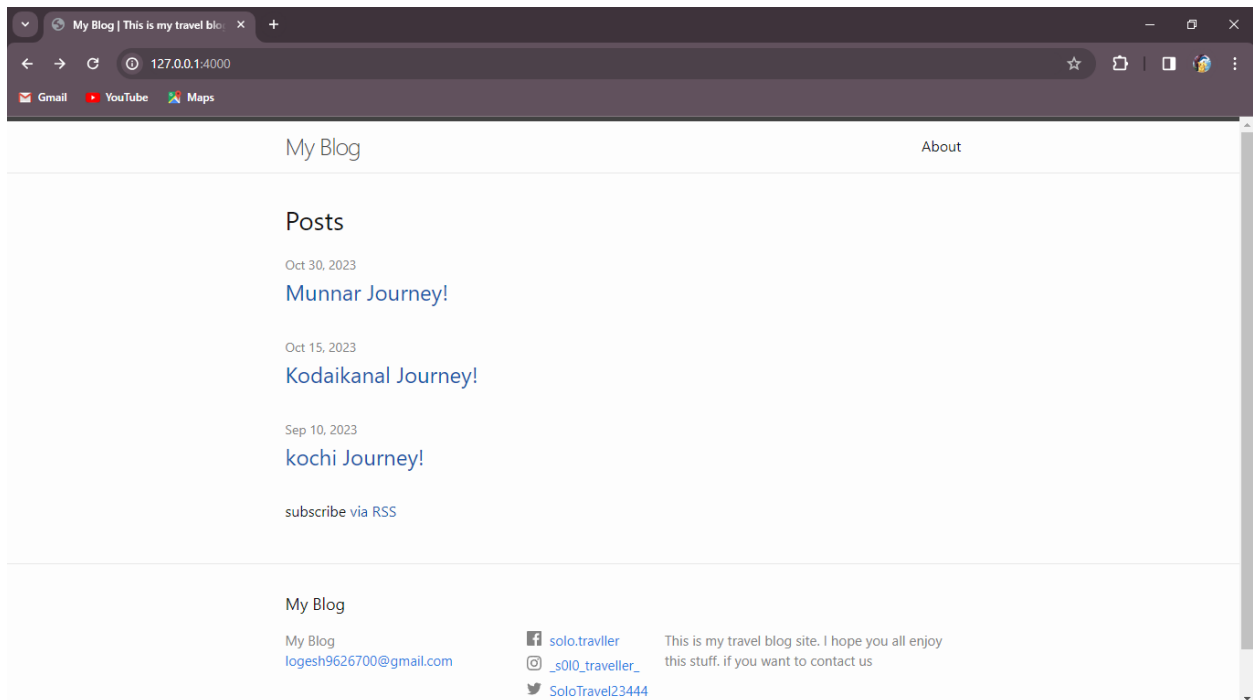
```
MINGW64:/c/Users/ELCOT/OneDrive/Desktop/Personal_Blog-Webapp/personal_blog
Bundler: Fetching tzinfo-data 1.2023.3
Bundler: Installing tzinfo-data 1.2023.3
Bundler: Fetching jekyll-feed 0.17.0
Bundler: Installing jekyll-feed 0.17.0
Bundler: Fetching jekyll-seo-tag 2.8.0
Bundler: Installing jekyll-seo-tag 2.8.0
Bundler: Fetching minima 2.5.1
Bundler: Installing minima 2.5.1
Bundler: Bundle complete! 7 Gemfile dependencies, 36 gems now installed.
Bundler: Use 'bundle info [gemname]' to see where a bundled gem is installed. Retrying download gem from https://rubygems.org/ due to error (2/4): Gem::RemoteFetcher::FetchError SocketError: Failed to open TCP connection to rubygems.org:443 (getaddrinfo: No such host is known. ) (https://rubygems.org/gems/rexml-3.2.6.gem)
Bundler: Retrying download gem from https://rubygems.org/ due to error (2/4): Gem::RemoteFetcher::FetchError SocketError: Failed to open TCP connection to rubygems.org:443 (getaddrinfo: No such host is known. ) (https://rubygems.org/gems/wdm-0.1.1.gem)
New jekyll site installed in C:/Users/ELCOT/OneDrive/Desktop/Personal_Blog-Webapp/personal_blog
.

ELCOT@Lenovo MINGW64 ~/OneDrive/Desktop/Personal_Blog-Webapp (main)
$ cd personal_blog
```

Use code . command to open the directory to the editor.

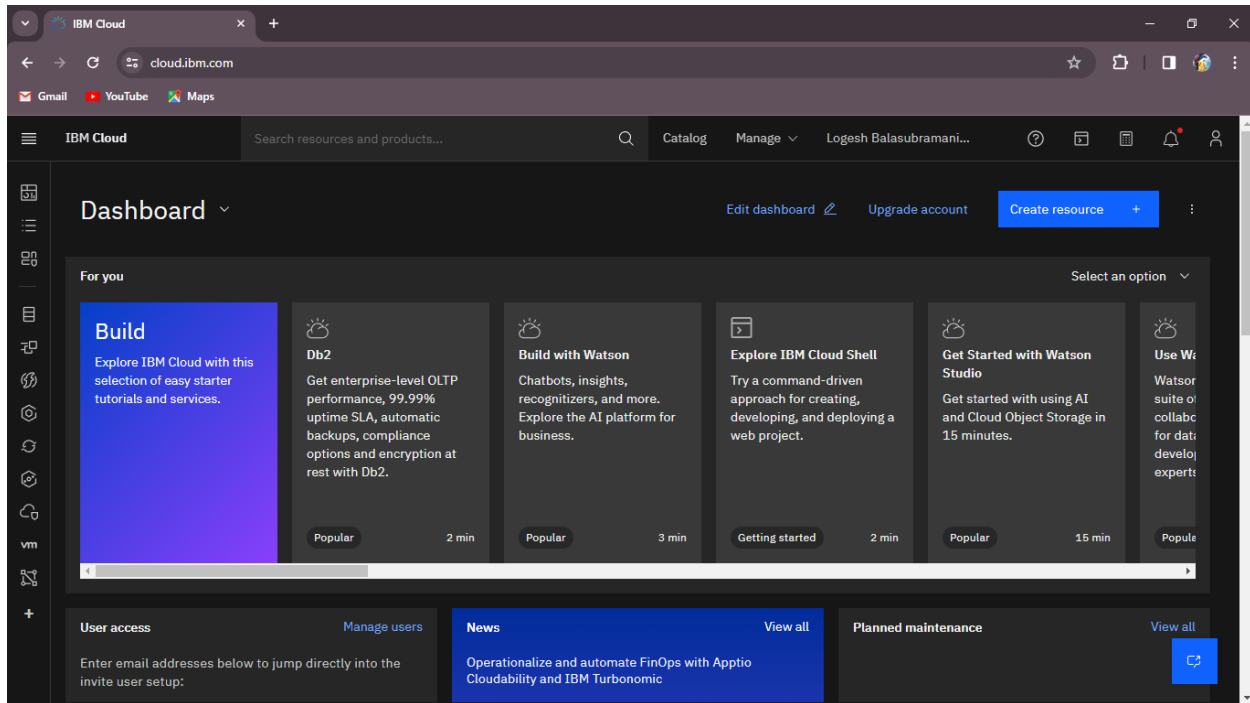


This is the output in local host.

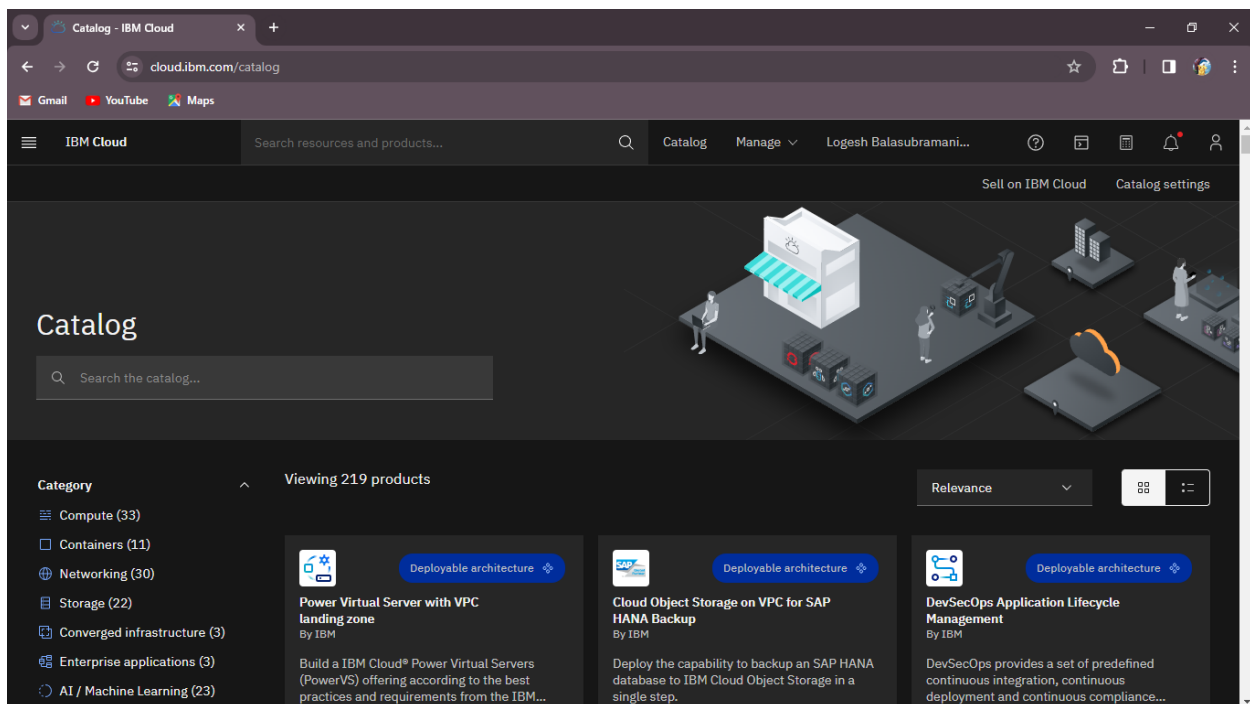


## IBM Cloud :

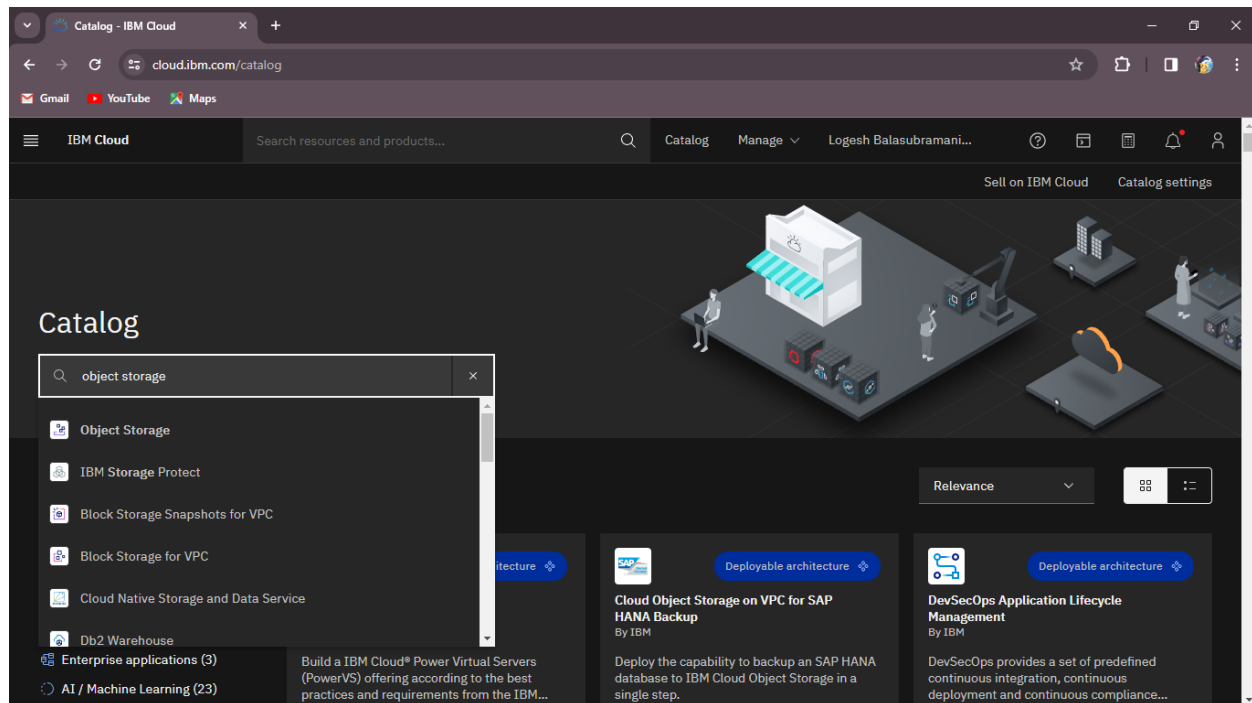
Login IBM Cloud with your respective email id and password. This is the landing page.



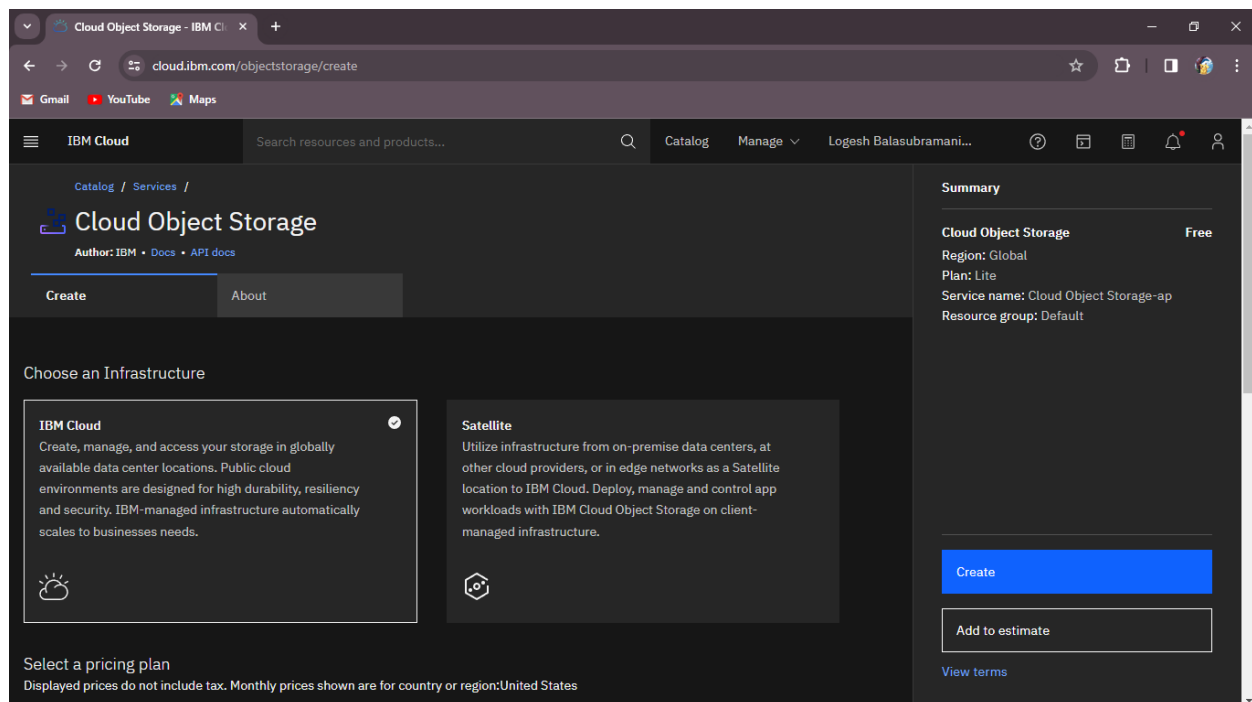
Press the create resource from right corner asnd catalog page will appear.



Use search bar and search Object storage.

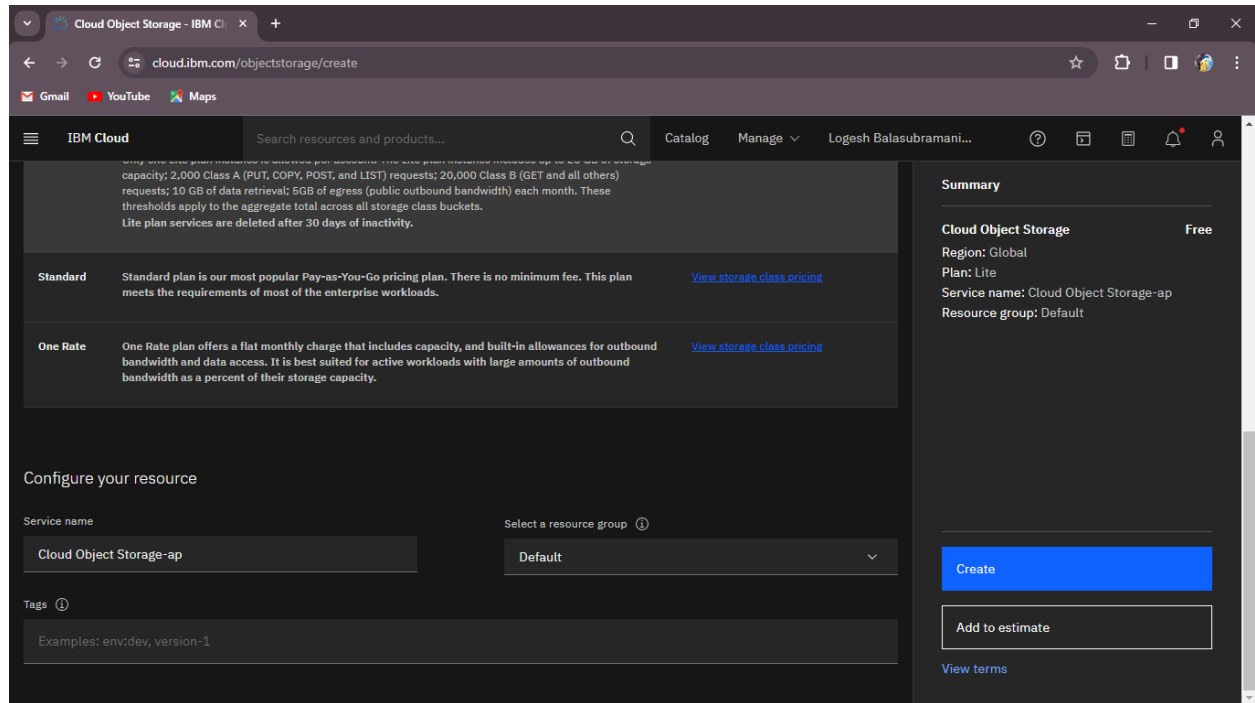


This is the page for object storage and scroll down.

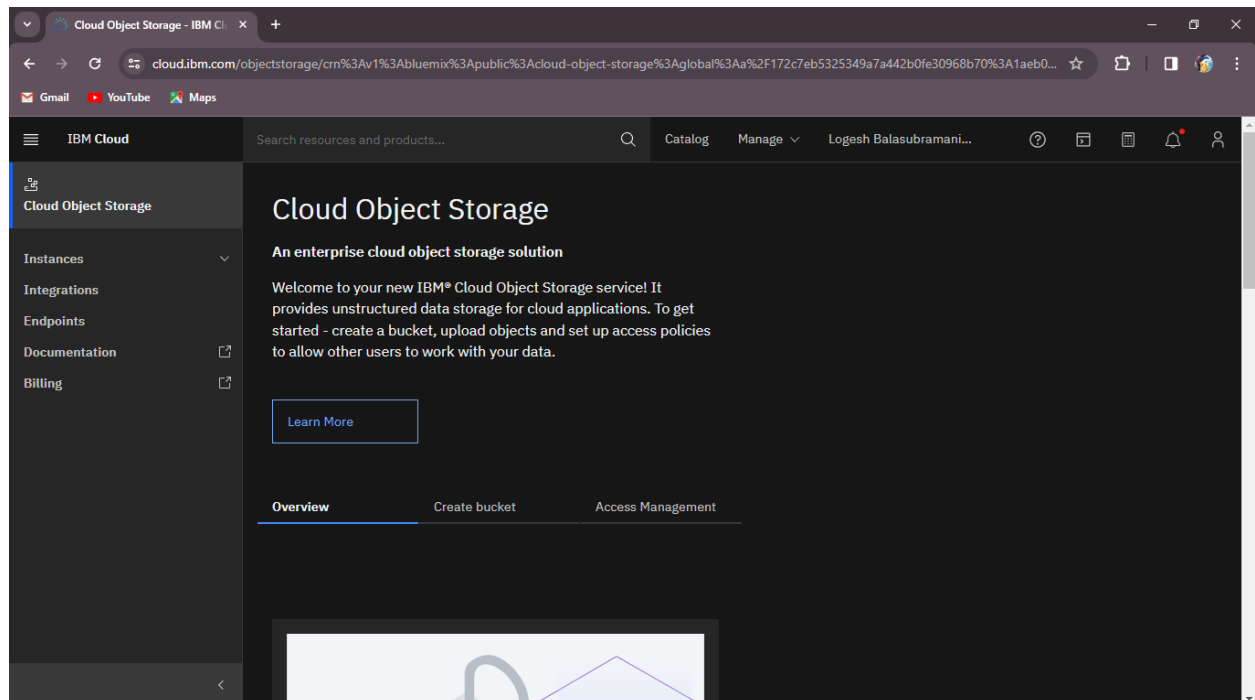




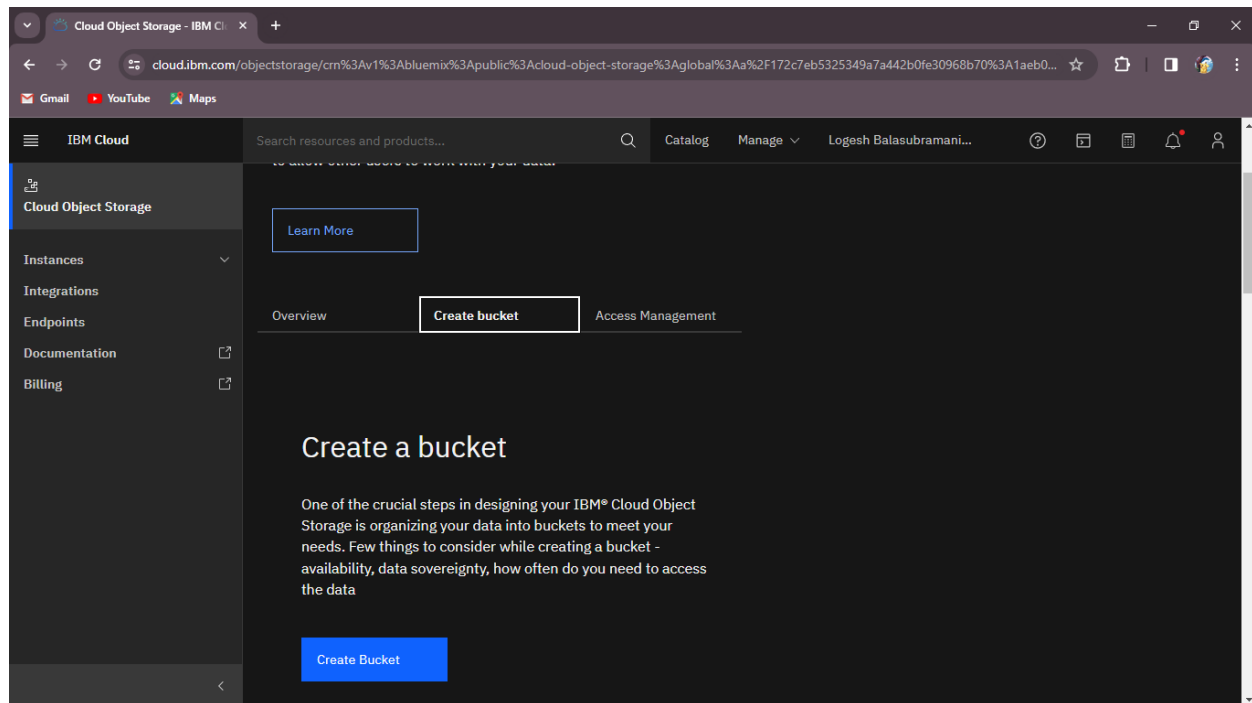
Press the create on the right bottom.



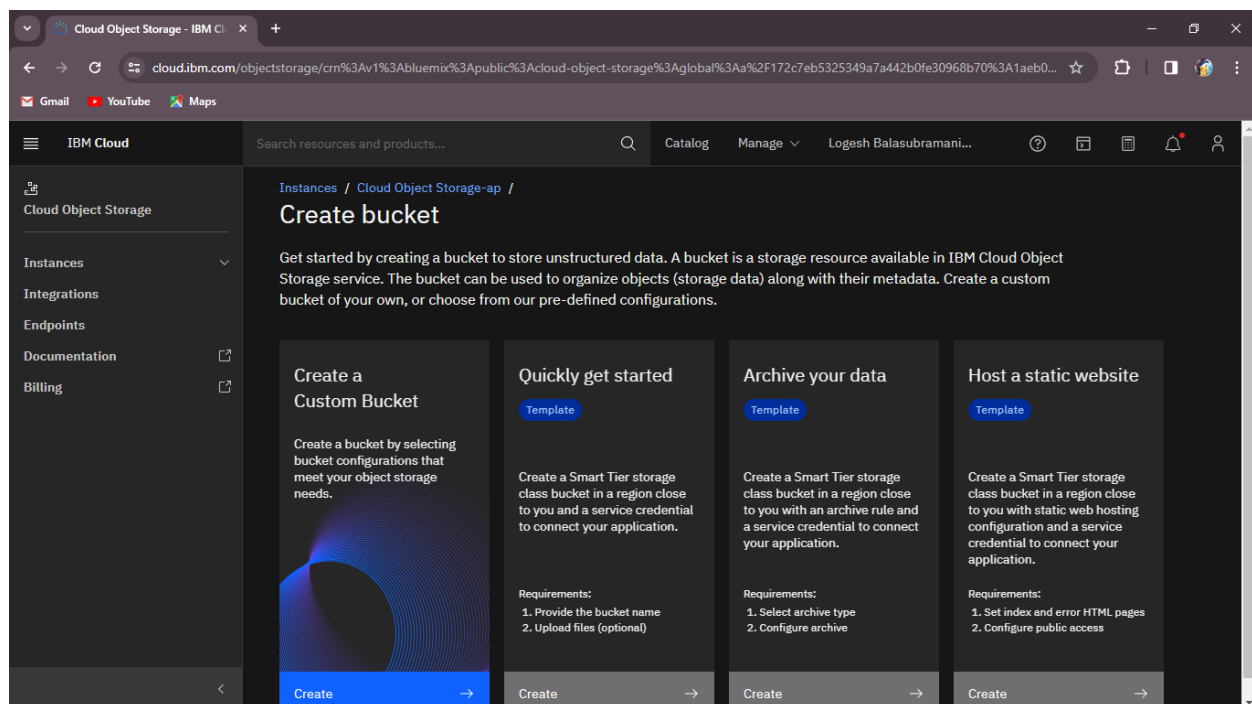
After creating the resource the page will like this.



Press the middle option create bucket.



Choose the custom bucket.



Enter your project name in the bucket name.

Cloud Object Storage - IBM Cloud

cloud.ibm.com/objectstorage/cm%3Av1%3Abluemix%3Apublic%3Acloud-object-storage%3Aglobal%3Aa%2F172c7eb5325349a7a442b0fe30968b70%3A1aeb0...

IBM Cloud

Search resources and products...

Catalog Manage Logesh Balasubramani...

Cloud Object Storage-ap /

Create custom bucket

Unique bucket name

Enter a unique bucket name

**Bucket naming rules:**

- Must be unique across the **whole** IBM Cloud Object Storage system
- Do not use any personal information (any part of a name, address, financial or security accounts or SSN)
- Must start and end in alphanumeric characters (3 to 63)
- Characters allowed: lowercase, numbers and nonconsecutive dots and hyphens

**Resiliency** [View options](#)

A bucket's resiliency is defined by the endpoint used to create it.

**Cross Region**  
Highest availability

**Regional**  
Best performance

**Single Site**  
Data sovereignty

Resiliency cannot be modified after provisioning

Cancel Create bucket

After enter the name press the create button on the right bttom.

Cloud Object Storage - IBM Cloud

cloud.ibm.com/objectstorage/cm%3Av1%3Abluemix%3Apublic%3Acloud-object-storage%3Aglobal%3Aa%2F172c7eb5325349a7a442b0fe30968b70%3A1aeb0...

IBM Cloud

Search resources and products...

Catalog Manage Logesh Balasubramani...

Cloud Object Storage-ap /

Create custom bucket

Unique bucket name

personal-blog-static-webapp-ibm

**Bucket naming rules:**

- Must be unique across the **whole** IBM Cloud Object Storage system
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**Resiliency** [View options](#)

A bucket's resiliency is defined by the endpoint used to create it.

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Highest availability

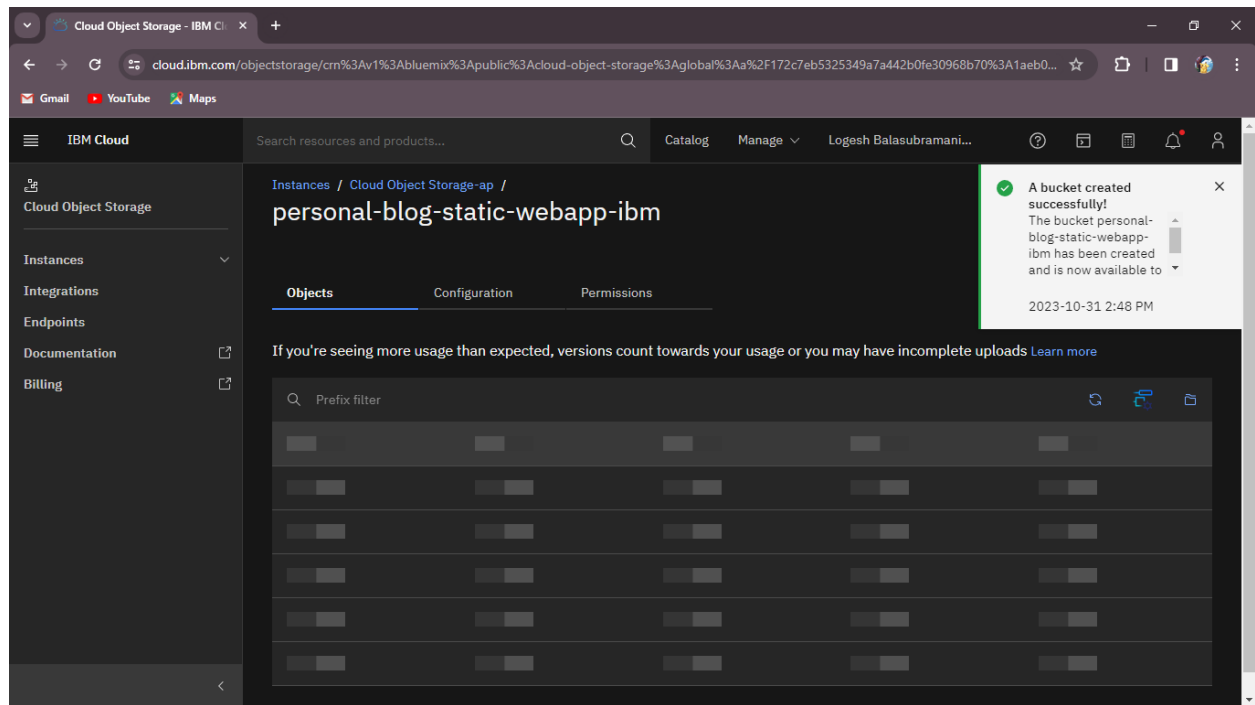
**Regional**  
Best performance

**Single Site**  
Data sovereignty

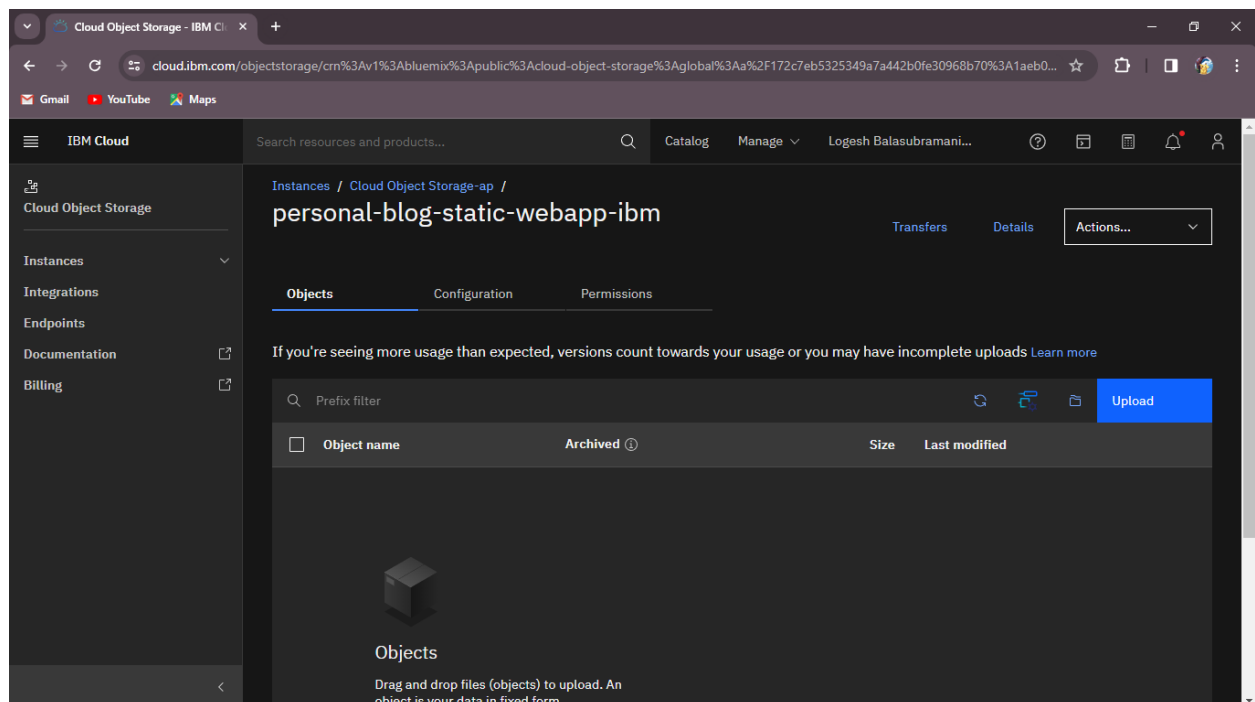
Resiliency cannot be modified after provisioning

Cancel Create bucket

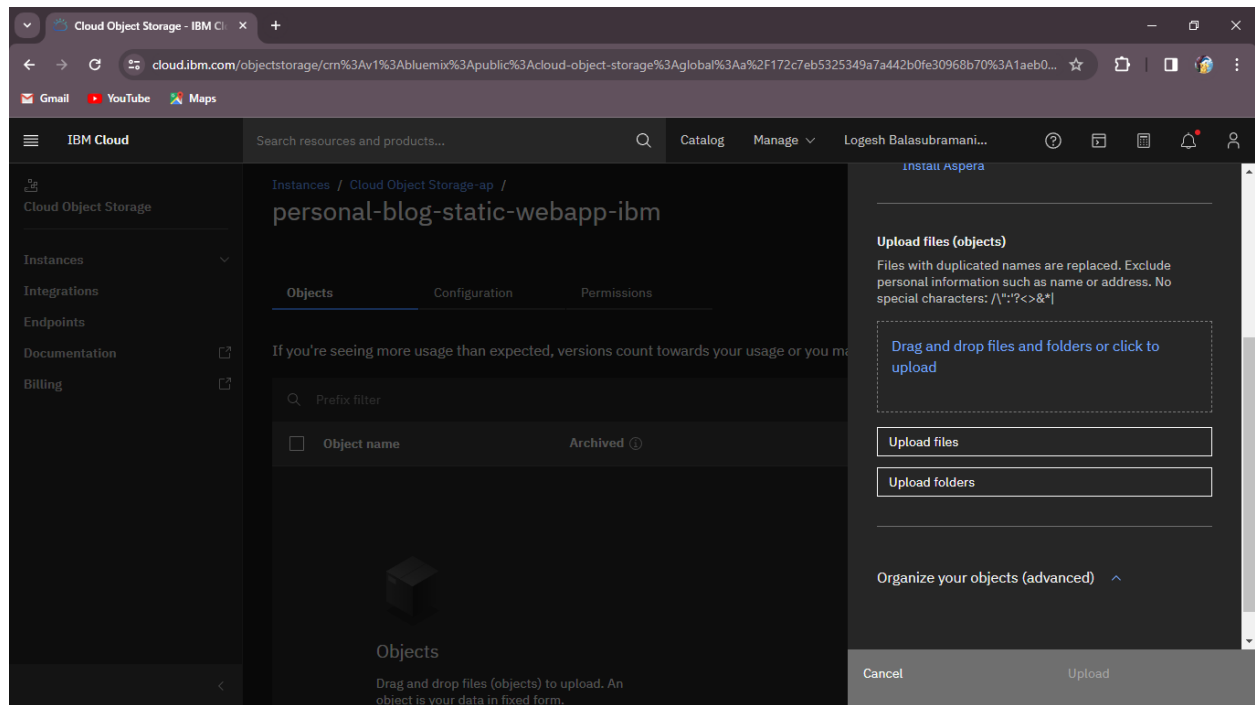
After creating bucket the page will look like this.



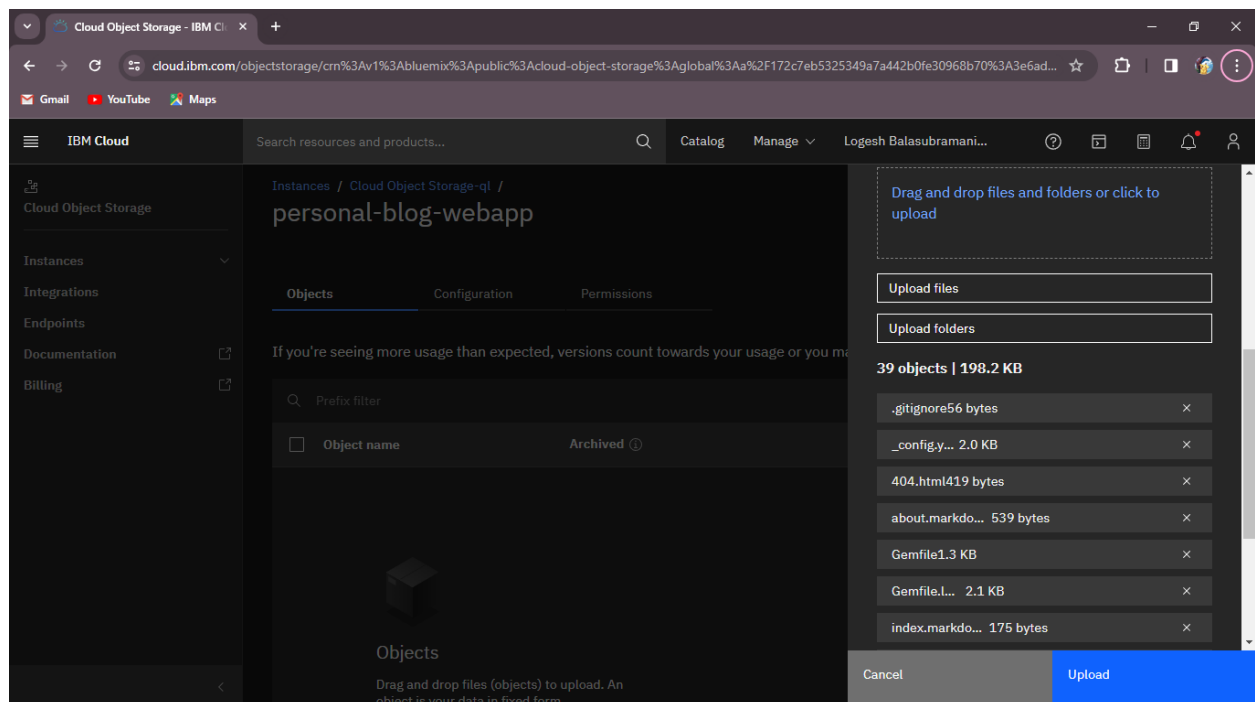
After all press the upload on the right side.



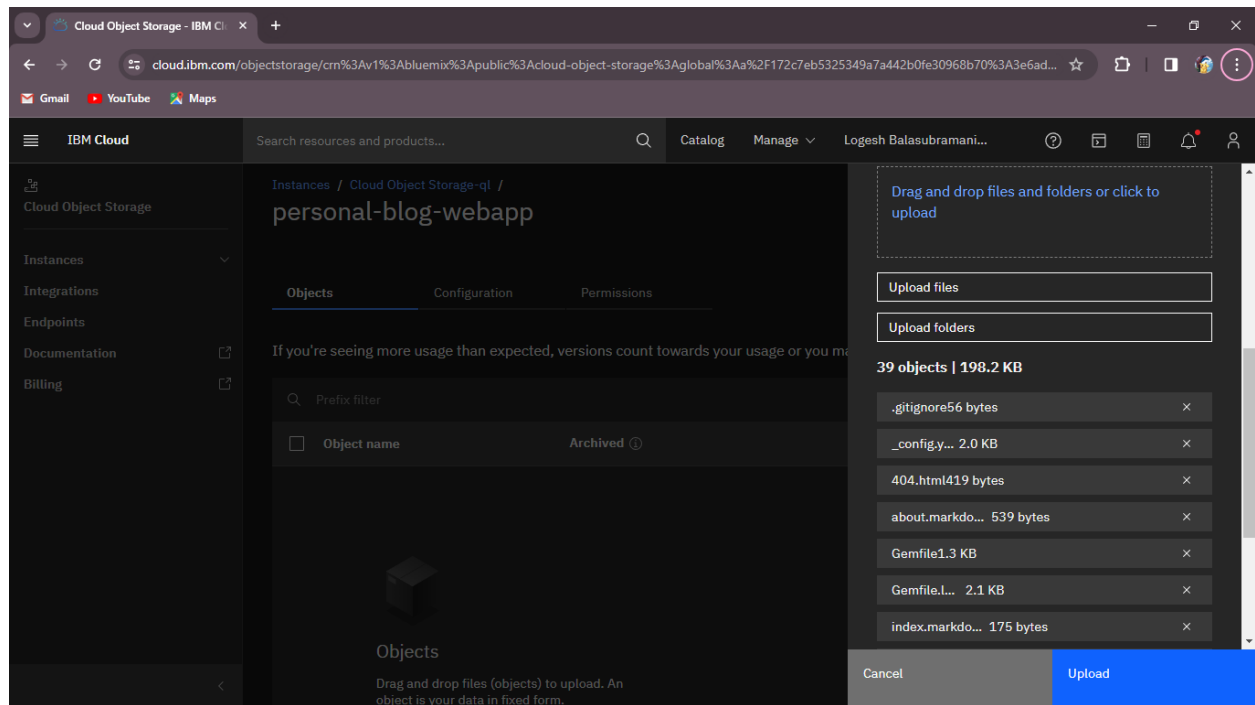
This tab will allow only files and allow folders has separate options.



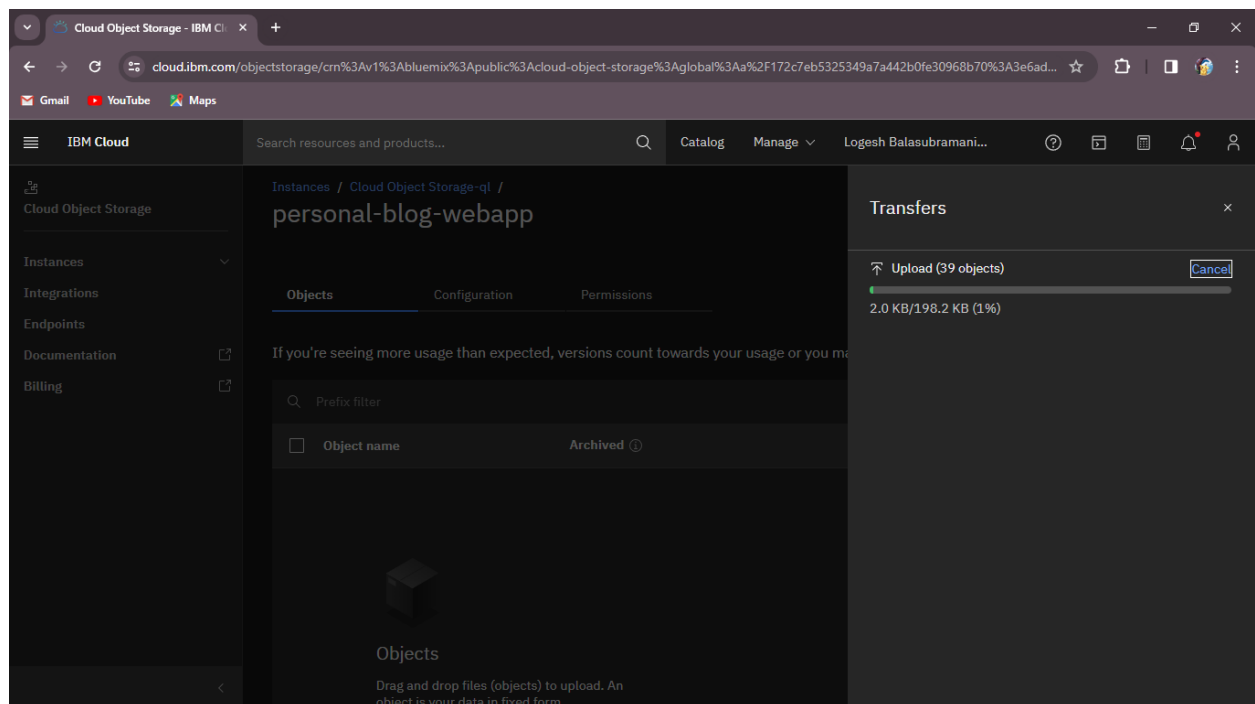
Select your project files from your local files.



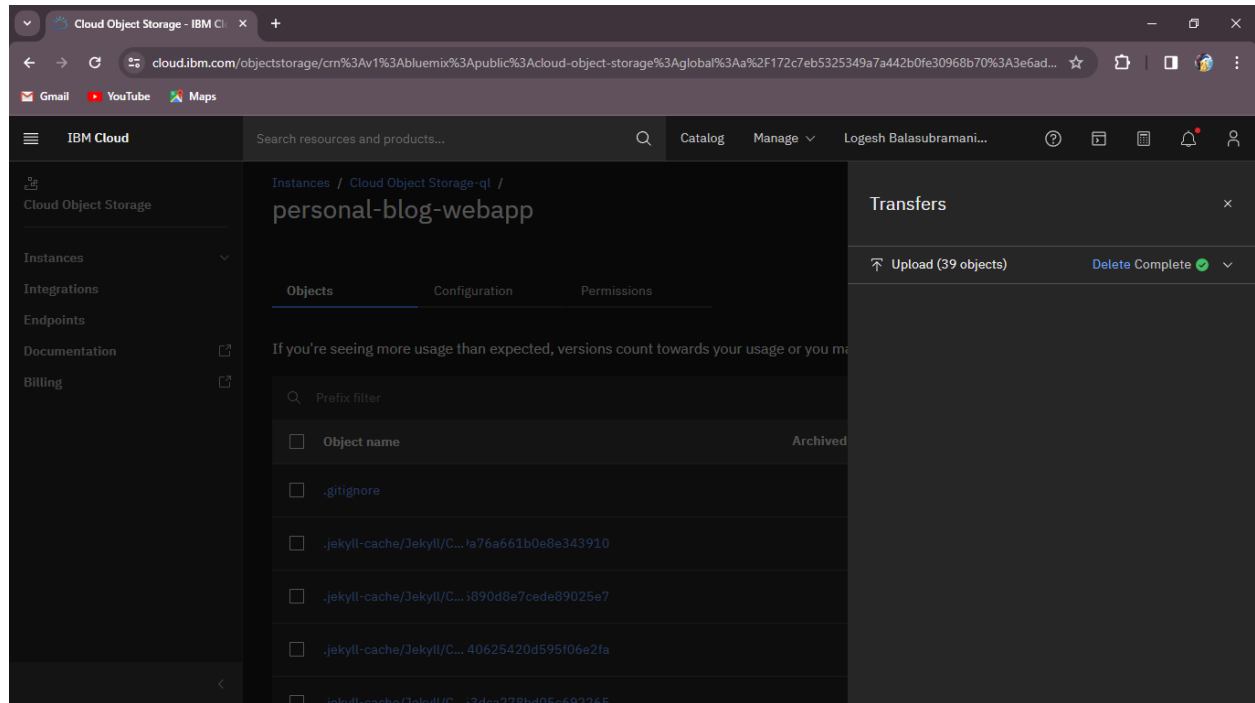
After selecting your project files press upload on the right side bottom.



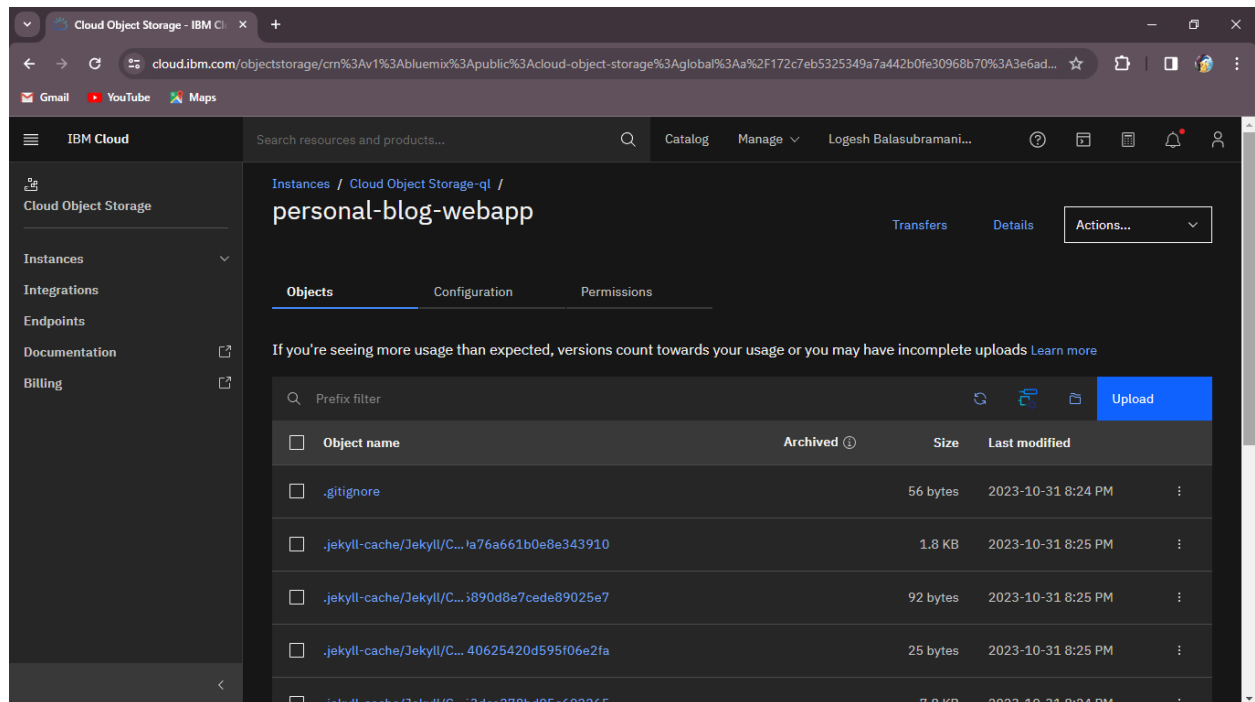
After pressing upload the files are uploading into your ibm cloud.



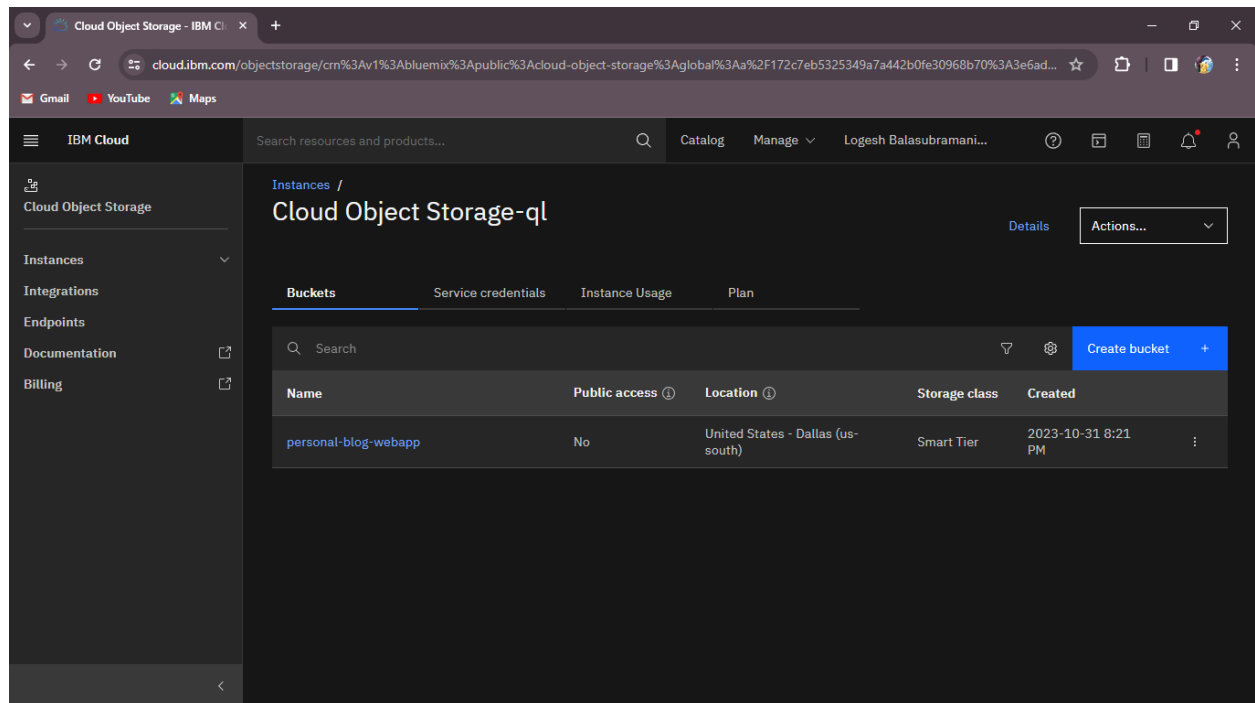
All files are uploaded now close the transfers tab.



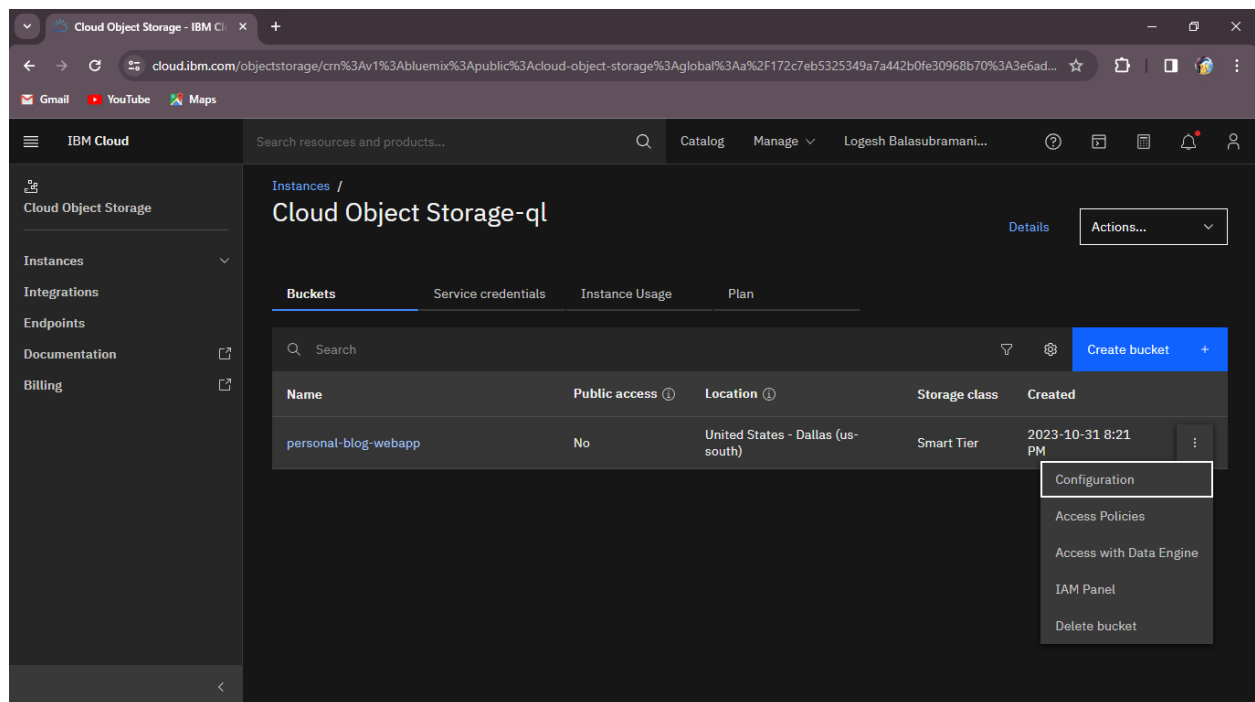
You can see your all files are uploader here.



Then go to the main object page.

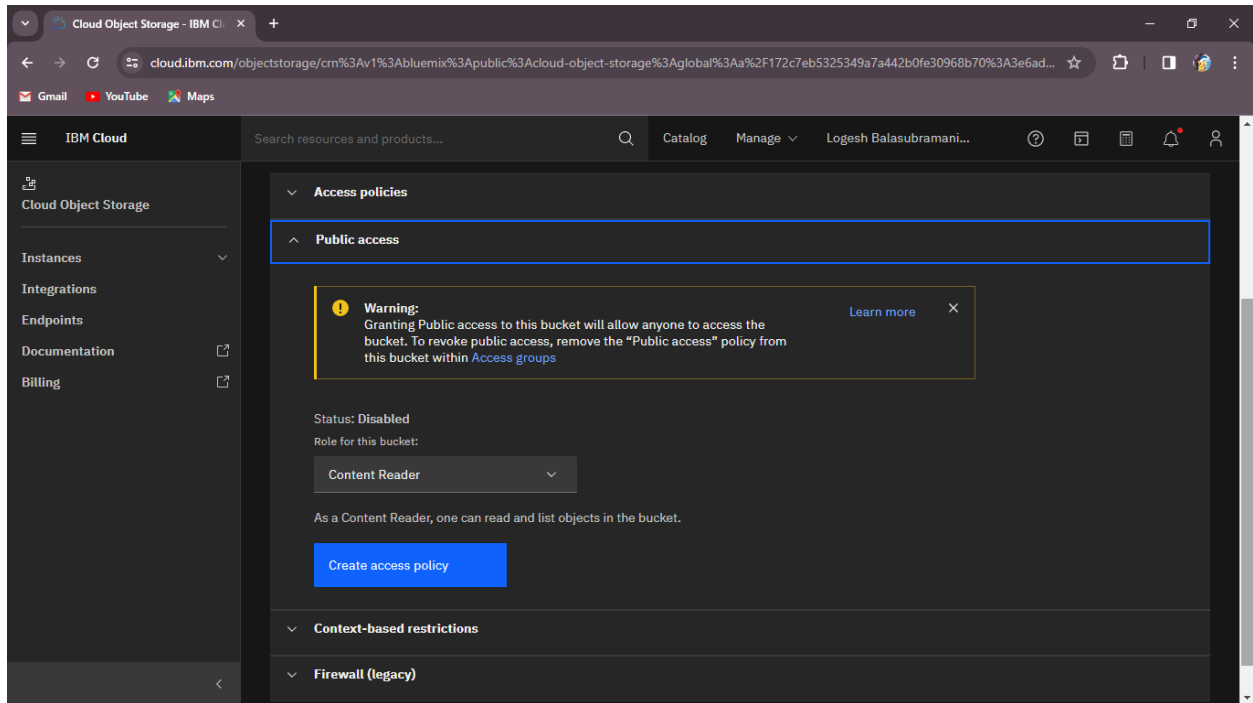


Press the three dot button on the bucket end and choose access policies.

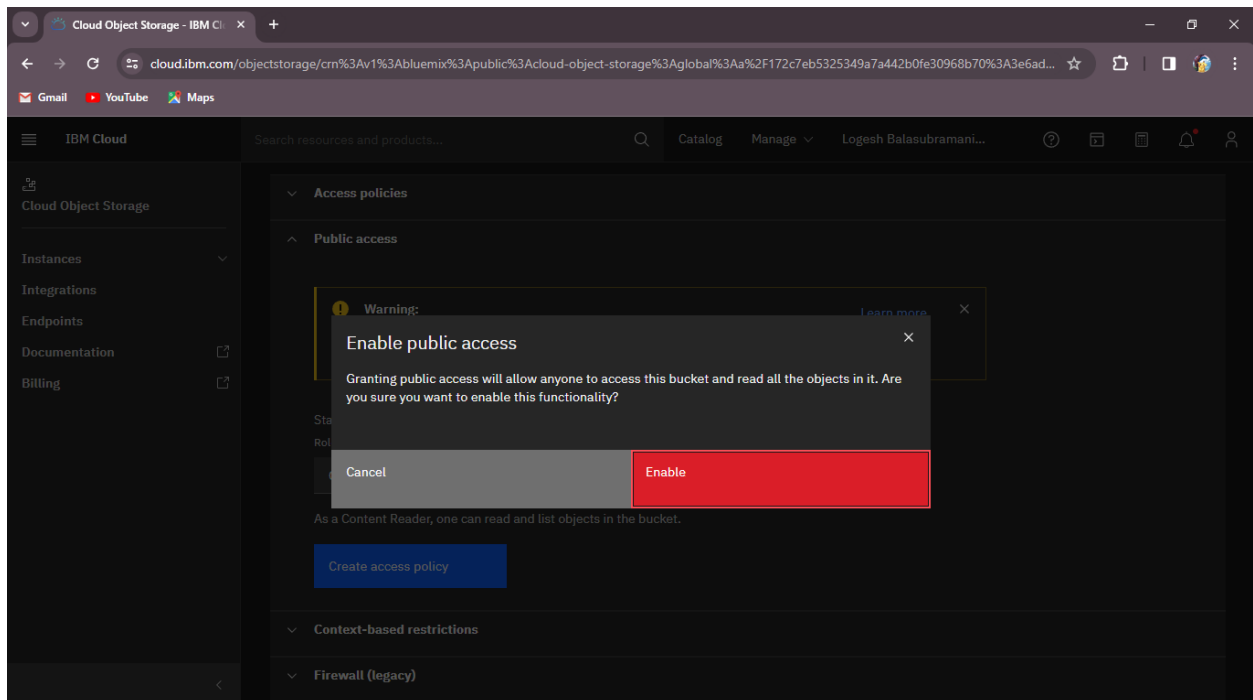




Now press access policy.



After clicking the create access policy this popup tab will show.



And goto the configuration page.

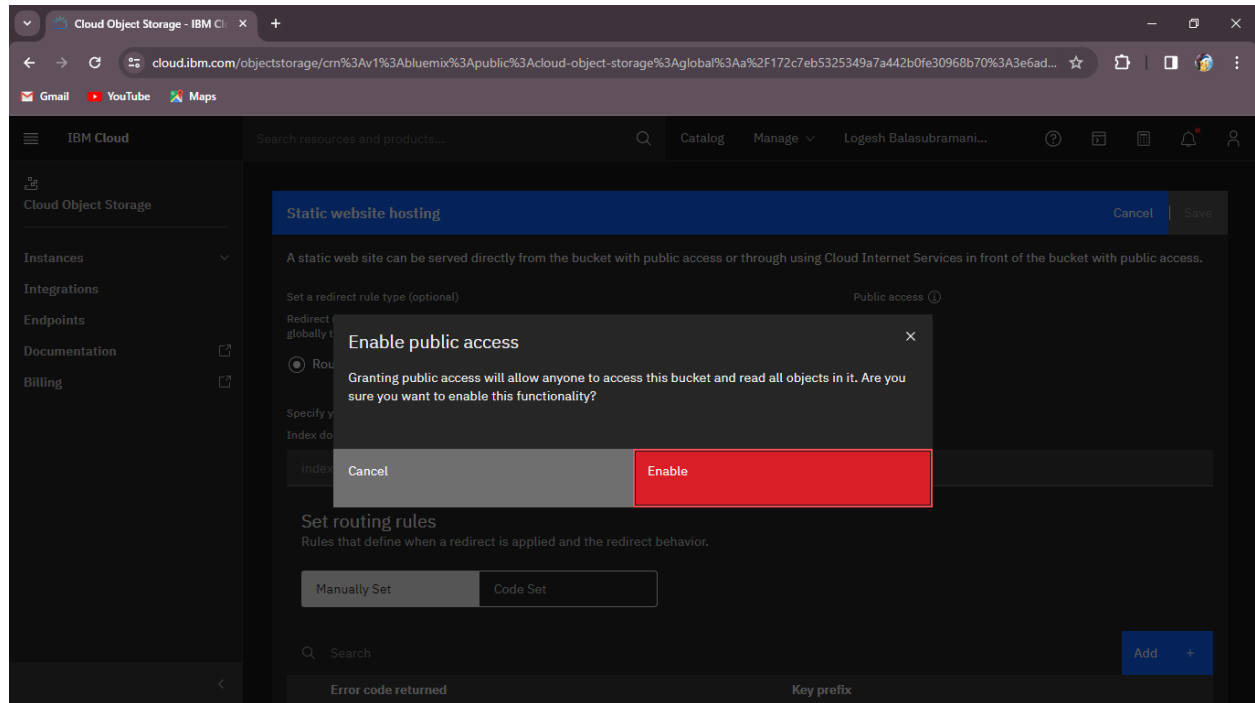
The screenshot shows the IBM Cloud Object Storage configuration page for a bucket named 'personal-blog-webapp'. The 'Configuration' tab is selected, showing options for Objects, Configuration, and Permissions. The 'Bucket configuration' section includes links to Jump to various settings like Bucket details, Endpoints, Versioning, Object Lock, Key management, Activity Tracker, Monitoring, Archive rule, Retention policy, Lifecycle policy, Static website hosting, and Cross-Origin Resource Sharing (CORS) rules. The 'Bucket details' section displays the following information:

Bucket details		Show less ^	
Bucket name	personal-blog-webapp	Total bytes	28.2 KB
Service instance	cloud-object-storage	Resiliency	Regional
Total objects	5	Location	United States - Dallas (us-south)
Storage class	Smart Tier ⓘ	Date created	2023-10-31 8:21 PM

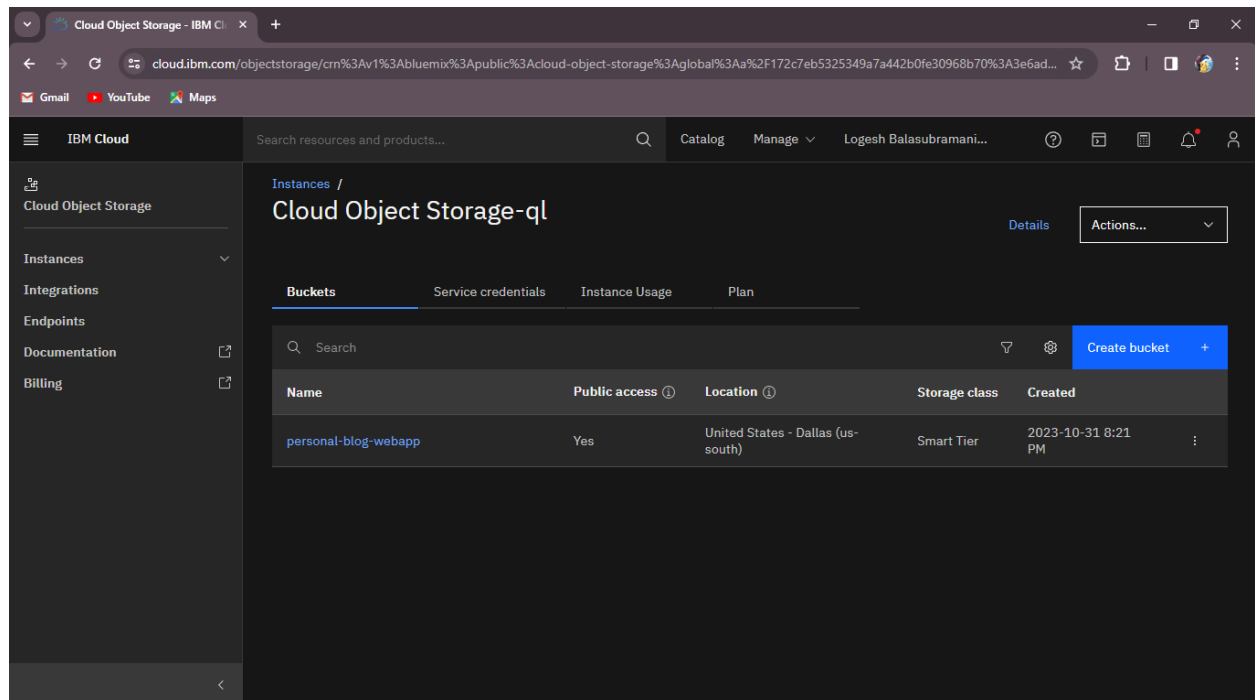
Scroll down until see the static website hosting.

The screenshot shows the 'Static website hosting' configuration page. It includes a description: 'A static web site can be served directly from the bucket with public access or through using Cloud Internet Services in front of the bucket with public access.' Below this, there are options to 'Set a redirect rule type (optional)' with a 'Public access ⓘ' toggle set to 'Off'. The 'Redirect requests' section offers two choices: 'Routing rules (individual)' (selected) and 'Redirect all requests (global)'. The 'Specify your index and error documents' section shows 'index.html' for the index document and 'error.html' for the error document (optional). The 'Set routing rules' section includes a search bar and an 'Add +' button.

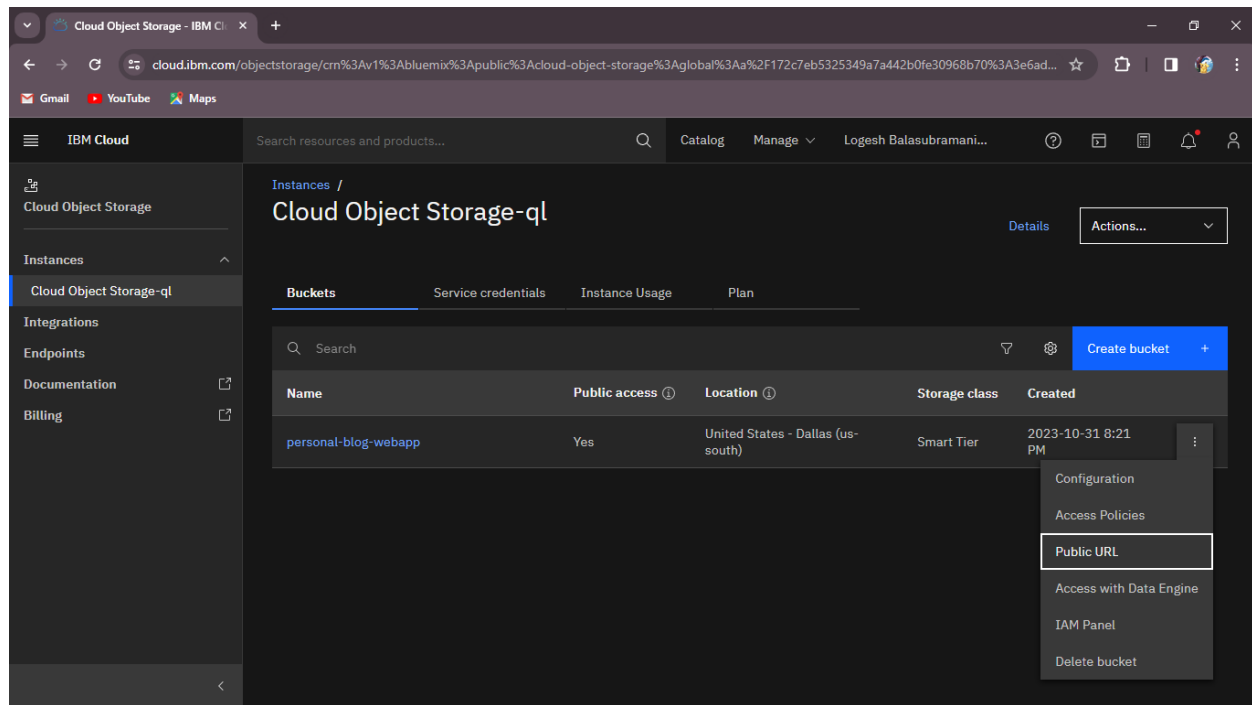
Enable the public access on this configuration tab and this popup tab will appear and save it.



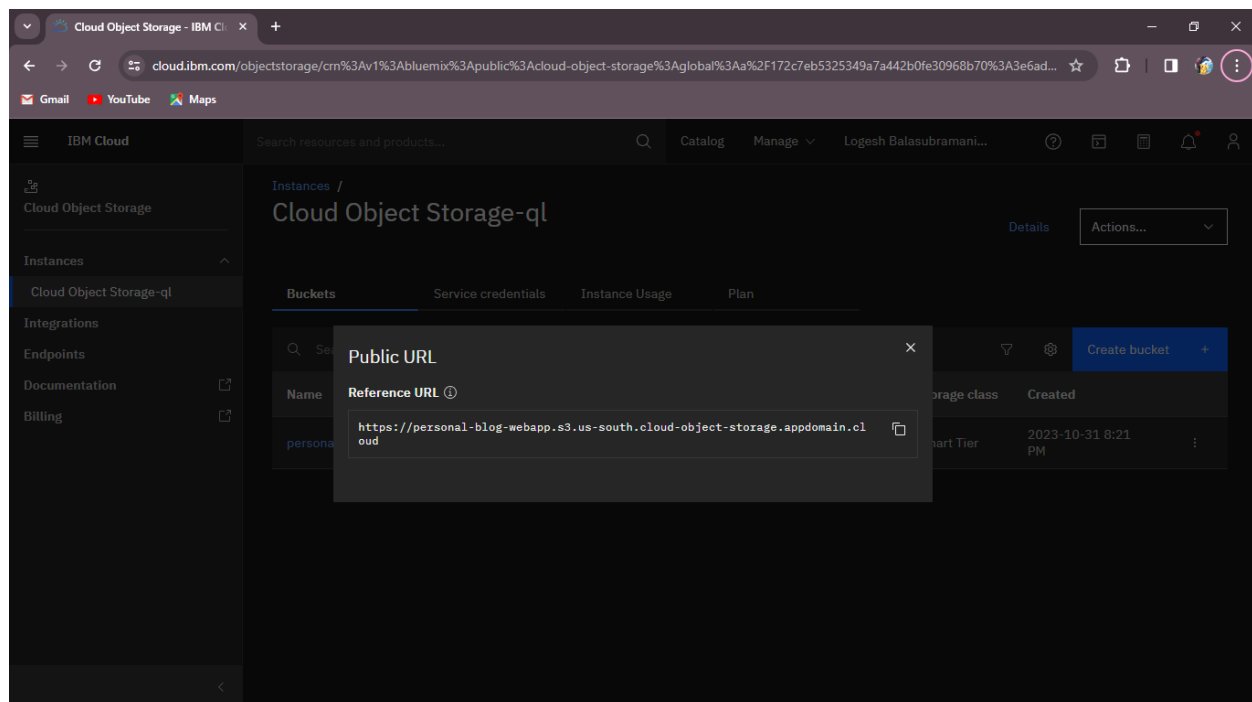
And come to main page.



Press the three dot icon on the end of bucket and choose public URL.



Copy the URL and paste it on your browser search bar.



Here is the final output of our project.

