# Personal Blog on IBM Cloud Static Web App

#### **Team Members**

Furgan Ahmed Mohammed – furgan076@gmail.com

M. Jalaludeen Zubair – jalaludeenzubair 15@gmail.com

Md Sadan Fuzail S – fuzailahmed20962@gmail.com

S. Bharath – bharathshanmugam11@gmail.com

P. Aathi Siva Ganesh – p.aathisivaganesh@gmail.com

M. Arssam Basha – arssambasha82@gmail.com

# Phase 5: Project Documentation & Submission

## Objective:

The primary objective of the personal blog, hosted on the IBM Cloud as a static web app, is to share the passion for travel and adventure while demonstrating the capabilities of IBM Cloud for hosting static websites.

## **Design Thinking Process**

## 1.Content Planning:

- Lay the foundation for your travel blog by planning its structure and sections.
- Explore strategies for organizing travel stories, valuable tips, stunning photos, and interactive maps.
- Learn how to engage your audience with a well-structured and captivating blog layout.

#### 2.Content Creation:

- Dive into the art of captivating crafting travel stories that transport readers to exotic destinations.
- Share valuable travel tips, from packing hacks to cultural insights.
- Curate breathtaking photos that capture the essence of your journeys and leave a lasting impression.

## 3. Website Design:

- Designing an aesthetically pleasing and user-friendly layout for the travel blog.
- Utilizing HTML, CSS, and JavaScript to create interactive elements that enhance the user experience.
- Ensuring the blog is responsive and accessible across various devices and browsers.

## 4.IBM Cloud Setup:

- Creating an IBM Cloud account and setting the stage for hosting your travel blog.
- Diving into the process of creating a Static Web App on IBM Cloud to ensure reliable and scalable hosting.
- Optimizing the blog's performance and security for a seamless online presence.

### 5.Content Management:

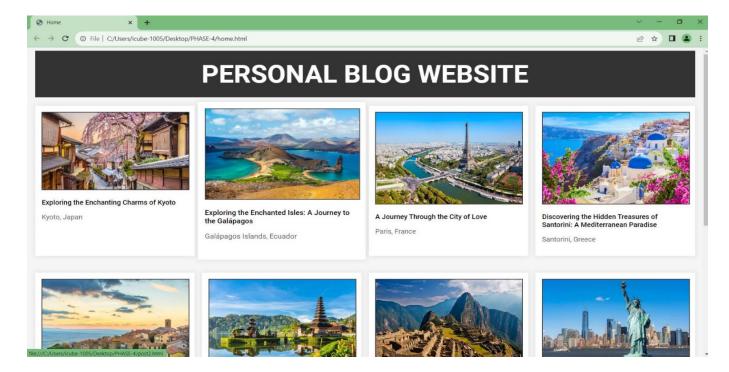
- Choosing a suitable content Management Platform System (CMS) or static site generator to streamline content updates.
- Exploring content management strategies to keep the travel blog fresh and engaging.
- Discovering the joy of hassle-free content management on the IBM Cloud platform.

## **Development Phases**

- Users can explore through the collection of blog posts on the website's homepage and click to view it.
- Social media sharing buttons allow users to easily share the website content with their friends and followers on various platforms, such as Facebook, X, Linked In, WhatsApp, etc.
- Interactive maps can provide users with useful information about the location. They can also create a sense of connection and trust between the website and the users.
- Build a website to host a personal blog on the IBM Cloud using HTML, CSS, Flask, IBM db2/SQLlite.
- Upload the document containing all the details regarding the deployment of the website.
- Deploy the code using docker image, container registry and Kubernetes.

## Structure of the Website

#### Homepage



The structure of the website in the image is as follows:

- The website has a header section that contains the website title in white text on a green background. The title is "Personal Blog Website".
- Below the header, there is a main section that displays the content of the blog in a grid layout. The main section has six parts, each consisting of an image and a text:
  - The first image shows a photo of a traditional Japanese building with a cherry blossom tree in the foreground. The text is "Exploring the Enchanting Charms of Kyoto, Japan".
  - The second image shows a photo of a group of sea lions on a rocky shore. The text is "Exploring the Enchanted Isles: A Journey to the Galapagos Islands, Ecuador".
  - The third image shows a photo of the Eiffel Tower at night. The text is "Romantic Getaway in Paris, France".
  - o The fourth image shows a photo of a white village on a cliff overlooking the sea. The text is "Santorini: A Dream Destination in Greece".
  - o The fifth image shows a photo of a skyscraper with a glass facade. The text is "New York City: The City That Never Sleeps".
  - The sixth image shows a photo of a beach with palm trees and clear water. The text is "Tropical Paradise in Maldives".

### Post Page



The structure of the website in the image is as follows:

- The website has a header section that contains the name of the website, a logo, a navigation menu, and a search bar.
- Below the header, there is a main section that displays the content of the blog post or article. The main section has three parts:
  - o A header image that spans the width of the page and shows a photo of a traditional Japanese building with a cherry blossom tree in the foreground.
  - o A title that is centered and has a large font size. The title is "Exploring the Enchanting Charms of Kyoto".
  - A body text that is divided into paragraphs and has a normal font size. The body text discusses the history and attractions of Kyoto, such as temples, gardens, festivals, and cuisine.
  - o On the left side of the main section, there is a share button that allows the user to share the article on social media platforms.

### **Content Creation**

- 1. **Understand your audience**: Before you start writing, think about who your target audience is. Are they budget travelers, luxury travelers, or adventure seekers? Knowing your audience will help you tailor your content to their interests and preferences.
- 2. **Choose a unique angle**: With so many travel blogs and websites out there, it's important to find a unique angle that sets your content apart. Consider writing about lesser-known destinations, off-the-beaten-path experiences, or cultural traditions that are not widely known.
- 3. **Tell a story**: Travel stories are more than just a list of places you've visited. They should transport readers to the destination and make them feel like they're experiencing it firsthand. Use descriptive language and sensory details to bring your stories to life.
- 4. **Provide practical advice**: In addition to storytelling, provide practical advice that readers can use when planning their own trips. This could include packing tips, budgeting advice, or recommendations for local restaurants and attractions.
- 5. **Use high-quality photos**: Photos are an essential part of travel content. They should be high-quality and capture the essence of the destination. Consider investing in a good camera or smartphone with a high-quality camera to take stunning photos.
- 6. **Be authentic**: Finally, be authentic in your writing and photography. Don't be afraid to share your personal experiences and opinions, even if they're not popular or mainstream. Authenticity will help you build a loyal following of readers who appreciate your unique perspective.

## **Technical Implementation Details**

Frontend: HTML, CSS, JavaScript

Backend: Flask

Database: IBM DB2

Social Media Integration: Links to Facebook, Twitter, Pinterest, LinkedIn, and WhatsApp sharing

mechanisms.

Mapping: Integration with Google Maps for location-related content

**Hosting:** Kubernetes

## Frontend

#### HTML

index.html appears to be the main page, where it lists multiple blog posts. It uses Flask templating to loop through the posts retrieved from the database and display their information. The page includes a header, images, post titles, and post locations.

```
index.html
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>My Blog</title>
k rel="stylesheet" href="/app/static/index.css" />
<link rel="preconnect" href="https://fonts.googleapis.com">
k rel="preconnect" href="https://fonts.gstatic.com" crossorigin>
href="https://fonts.googleapis.com/css2?family=Roboto:wght@300;400;500;700&display=swap"
rel="stylesheet">
</head>
<body>
<header>PERSONAL BLOG WEBSITE</header>
<div class="all-posts-container">
{% for post in posts %}
<div class="post-container">
<a href="{{ url_for('view_post', post_id=post.id) }}" class="post-preview">
```

```
<div class="picture-space">
<img class="picture"</pre>
src="{{post.image_url }}"
alt="{{post.heading }} image"
width="500px"
/>
</div>
<div class="post-info">
{{ post.heading }}
{{ post.location }}
</div>
</a>
</div>
{% endfor %}
</div>
</body>
</html>
```

post.html seems to be a template for displaying individual blog posts. It includes social media sharing buttons, post content, and additional styling. The template takes a single post object as an argument and displays its content, such as the title, location, image, and actual post content.

## post.html

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>My Blog</title>
<link rel="stylesheet" href="/app/static/style.css" />
k rel="preconnect" href="https://fonts.googleapis.com">
k rel="preconnect" href="https://fonts.gstatic.com" crossorigin>
k
href="https://fonts.googleapis.com/css2?family=Roboto:wght@300;400;500;700&display=swap"
rel="stylesheet">
</head>
<body>
<div class="share-btn-container">
<a href="#" class="facebook-btn">
<i class="fab fa-facebook"></i>
</a>
<a href="#" class="twitter-btn">
<i class="fab fa-x-twitter"></i>
</a>
<a href="#" class="linkedin-btn">
```

```
<i class="fab fa-linkedin"></i></i>
</a>
<a href="#" class="pinterest-btn">
<i class="fab fa-pinterest"></i>
</a>
<a href="#" class="whatsapp-btn">
<i class="fab fa-whatsapp"></i></i></or>
</a>
</div>
<div class="content">
<h1 id="title">{{ post.heading }}</h1>
<a href="#" class="maps-btn">
<i id="location">{{ post.location }}</i></i>
<i class="fa-solid fa-map-location-dot"></i></i>
</a>
<div class="main-content-container">
<img class="img" src="{{ post.image_url }}" alt="Image" />
{{ post.content }}
</div>
</div>
<script src="main.js"></script>
</body></html>
```

The application uses CSS to style the HTML templates. It references two CSS files, index.css and style.css. CSS files define the visual presentation of the web pages, including fonts, colors, layout, and other styling elements. Proper CSS styling enhances the overall look and user experience of the website.

```
index.css
.post-info {
font-family: Roboto, Arial;
font-size: 16px;
}
.post-title {
font-weight: 500;
}
.post-location {
color: rgb(92, 92, 92);
}
.post-container {
padding: 15px;
background-color: rgb(255, 255, 255);
box-shadow: 0 0 10px rgba(0, 0, 0, 0.1);
transition: transform .2s;
}
.post-container:hover {
transform: scale(1.05);
```

```
}
.all-posts-container {
display: grid;
grid-template-columns: 1fr 1fr 1fr;
column-gap: 16px;
row-gap: 40px;
}
a {
text-decoration: inherit;
color: inherit;
}
.picture {
border: 2px solid rgb(52, 52, 52);
width: 100%;
}
@media (max-width: 450px) {
.all-posts-container {
grid-template-columns: 1fr;
}
@media (min-width: 451px) and (max-width: 750px) {
.all-posts-container {
grid-template-columns: 1fr 1fr;
}
```

```
}
@media (min-width: 751px) and (max-width: 1249px) {
.all-posts-container {
grid-template-columns: 1fr 1fr 1fr;
}
}
@media (min-width: 1250px) {
.all-posts-container {
grid-template-columns: 1fr 1fr 1fr;
}
}
header {
text-align: center;
font-weight: 700;
font-family: Roboto, Arial;
font-size: 60px;
background-color: rgb(51, 51, 51);
color: rgb(255, 255, 255);
padding: 20px;
margin-bottom: 20px;
}
body {
background-color: rgb(245, 245, 245);
padding-left: 10px;
```

```
padding-right: 10px;
}
style.css
/* Content */
.content {
padding: 8px 90px;
font-family: "Roboto", sans-serif;
}
.content p {
line-height: 1.9;
}
.content img {
max-height: 500px;
}
/* Share Buttons */
.share-btn-container {
background: #fff;
display: flex;
flex-direction: column;
padding: 16px;
box-shadow: 0 4px 8px rgba(0, 0, 0, 0.3);
position: fixed;
top: 50%;
```

```
transform: translateY(-50%);
}
.share-btn-container a i {
font-size: 32px;
.share-btn-container a {
margin: 12px 0;
transition: 500ms;
}
.share-btn-container a:hover, .maps-btn :hover{
transform: scale(1.2);
}
.share-btn-container .fa-facebook {
color: #3b5998;
.share-btn-container .fa-x-twitter {
color: #000000
}
.share-btn-container .fa-linkedin {
color: #0077b5;
}
.share-btn-container .fa-pinterest {
color: #bd081c;
}
```

```
.share-btn-container .fa-whatsapp {
color: #25d366;
}
.maps-btn .fa-map-location-dot {
color: #cdca15;
transition: 500ms;
}
.maps-btn {
text-decoration: none;
color: #1c95a2;
}
.img {
width: 50vw;
max-width: 100%;
border: 2px solid rgba(0, 0, 0);
}
/* Media Queries */
@media (max-width: 550px) {
.content {
padding: 8px 32px;
.share-btn-container {
transform: unset;
top: unset;
```

```
left: 0;
bottom: 0;
width: 100%;
flex-direction: row;
box-shadow: 4px 0 8px rgba(0, 0, 0, 0.3);
padding: 16px 0;
justify-content: center;
.share-btn-container a {
margin: 0 32px;
}
.img {
width: 100vw;
max-width: 100%;
border: 2px solid rgba(0, 0, 0);
}
/* Comment Section */
.container{
display: flex;
justify-content: space-between;
padding: 10px;
margin: 10px 0;
}
```

```
.comment-container {
width: 80%;
margin: 0 auto;
font-family: Arial, sans-serif;
.comment-container h2 {
text-align: center;
#commentInput{
flex: 0.99;
padding:10px;
}
.comment {
display: flex;
justify-content: space-between;
background-color: #f2f2f2;
padding: 10px;
margin: 10px 0;
border: 1px solid #ddd;
border-radius: 5px;
.comment-actions {
display: flex;
}
```

```
.delete-button {
background-color: #ff5757;
color: white;
border: none;
padding: 5px 10px;
margin-left: 5px;
cursor: pointer;
}
.material-symbols-outlined:hover{
cursor:pointer;
}
.send{
font-size:30px;
}
```

```
JavaScript
```

```
The provided JavaScript code appears to serve two main functions: sharing and mapping.
main.js
// Share and Maps section
const facebookBtn = document.querySelector(".facebook-btn");
const twitterBtn = document.querySelector(".twitter-btn");
const pinterestBtn = document.querySelector(".pinterest-btn");
const linkedinBtn = document.querySelector(".linkedin-btn");
const whatsappBtn = document.querySelector(".whatsapp-btn");
const mapsBtn = document.querySelector(".maps-btn");
function init() {
 const img = document.querySelector(".img");
 let postUrl = encodeURI(document.location.href);
 let postTitle = encodeURI(document.getElementById("title").textContent);
 let postImg = encodeURI(img.src);
 let location = encodeURI(document.getElementById("location").textContent);
 facebookBtn.setAttribute(
  "href".
  https://www.facebook.com/sharer.php?u=${postUrl}
 );
twitterBtn.setAttribute(
  "href".
  https://twitter.com/share?url=${postUrl}&text=${postTitle}
```

```
);
pinterestBtn.setAttribute(
  "href",
https://pinterest.com/pin/create/bookmarklet/?media=${postImg}&url=${postUrl}&description=
${postTitle}
);
 linkedinBtn.setAttribute(
  "href",
  https://www.linkedin.com/shareArticle?url=${postUrl}&title=${postTitle}
 );
 whatsappBtn.setAttribute(
  "href",
  https://wa.me/?text=${postTitle} ${postUrl}
);
 mapsBtn.setAttribute(
  "href",
  https://www.google.com/maps?q=${location}&ie=UTF8
);
}
init();
```

## Backend

#### Flask

The Flask code interacts with an IBM Db2 database to create a web application for displaying and viewing blog posts. This code exemplifies how to establish a connection to the database, retrieve data, and render web pages using the Flask framework.

```
app.py
from flask import Flask, render_template
import ibm_db
app = Flask(__name__)
def get_posts_from_db():
conn = ibm_db.connect("DATABASE=bludb;HOSTNAME=b0aebb68-94fa-46ec-a1fc-
1c999edb6187.c3n41cmd0nqnrk39u98g.databases.appdomain.cloud;PORT=31249;UID=qvm12834;
PWD=y6HwghDRDHiUlF1f;", "", "")
stmt = ibm_db.exec_immediate(conn, "SELECT * FROM posts")
posts = []
while ibm_db.fetch_row(stmt):
post = {
"heading": ibm_db.result(stmt, "HEADING"),
"location": ibm_db.result(stmt, "LOCATION"),
"image_url": ibm_db.result(stmt, "IMAGE_URL"),
"content": ibm_db.result(stmt, "CONTENT"),
}
posts.append(post)
ibm_db.close(conn)
return posts
@app.route('/')
```

```
def index():
posts = get_posts_from_db()
return render_template('index.html', posts=posts)
@app.route('/post/<int:post_id>')
def view_post(post_id):
conn = ibm_db.connect("DATABASE=bludb;HOSTNAME=b0aebb68-94fa-46ec-a1fc-
1c999edb6187.c3n41cmd0nqnrk39u98g.databases.appdomain.cloud;PORT=31249;UID=qvm12834;
PWD=y6HwghDRDHiUlF1f;", "", "")
stmt = ibm_db.prepare(conn, "SELECT * FROM posts WHERE ID = ?")
ibm_db.bind_param(stmt, 1, post_id)
if ibm_db.execute(stmt):
row = ibm_db.fetch_assoc(stmt)
ibm_db.close(conn)
if row:
post = {
"heading": row["HEADING"],
"location": row["LOCATION"],
"image_url": row["IMAGE_URL"],
"content": row["CONTENT"],
}
return render_template('post.html', post=post)
return "Post not found"
if __name__ == '__main__':
app.run(debug=True)
```

## **Database**

#### Db2

IBM Db2 offers several ways to store image data, providing flexibility based on image size, access patterns, and performance requirements. DB2 allows storing images in the file system and keeping references to the image files in the database. This approach is suitable for scenarios where the images might be accessed directly without requiring additional processing within the database. IBM Db2 provides several options for accessing data from our travel blog website.

### Dockerfile

## 1. Base Image Selection:

## FROM python:3.9

This line specifies the base image for the Docker container. In this case, it's using an official Python 3.9 image as the parent image. The official Python images are well-maintained and come with Python pre-installed.

## 2. Working Directory:

## WORKDIR /app

This line sets the working directory in the container to '/app'. This is where the application code and any subsequent operations will be executed.

#### 3. Copy Application Files:

## COPY . /app

This command copies the contents of the current directory (the directory where the Dockerfile is located) into the '/app' directory in the container. It effectively transfers the application code and files into the container.

## 4. Install Dependencies:

## RUN pip install -r requirements.txt

This command installs the Python packages listed in the 'requirements.txt' file. These are the dependencies required for the application to run. This step is essential to ensure that all necessary packages are available in the container.

## 5. Expose Port:

#### **EXPOSE 5000**

This line instructs Docker to expose port 5000. It doesn't publish the port to the host; it's more of a declaration that the container will be listening on port 5000. It's up to the user when running the container to map the exposed container port to a host port.

#### 6. Environment Variable:

## ENV FLASK\_APP=app.py

This sets an environment variable `FLASK\_APP` to `app.py`. This environment variable is used by Flask to determine the main application file. It's a configuration detail for the Flask application.

#### 7. Run Command:

## CMD ["flask", "run", "--host=0.0.0.0"]

This is the command that will be executed when the container is run. It runs the Flask application using the `flask run` command and specifies `--host=0.0.0.0` to allow external access to the application. The Flask development server will be accessible on port 5000 inside the container.

## Hosting

## Kubernetes

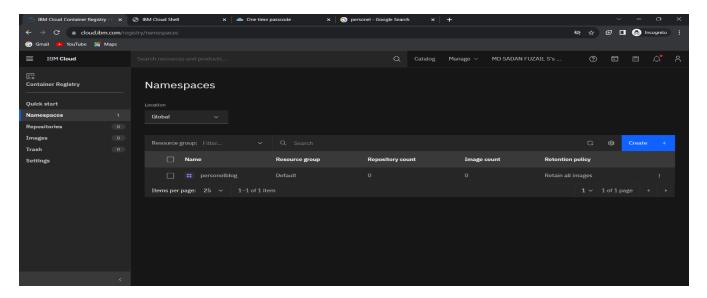
```
| Min Count Counter (agent) | Min Count (agent
```

Install the container registry plugin by using the command, "ibmcloud plugin install container-registry -r 'IBM Cloud'".

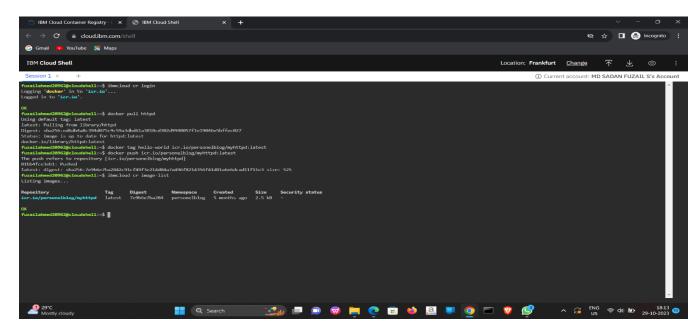
And then Log in to your IBM Cloud account using the command "ibmcloud login –a <a href="https://cloud.ibm.com">https://cloud.ibm.com</a>" or "ibmcloud login –sso" if the first command doesn't work.

Target the correct IBM Cloud Container Registry region. Use the command "ibmcloud cr region-set global".

Choose a name and create that namespace by using the command "ibmcloud cr namespace-add personal blog".



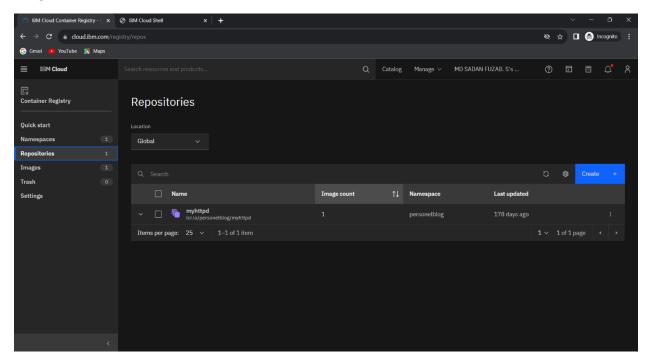
As we can see in the above image the namespace is successfully created.



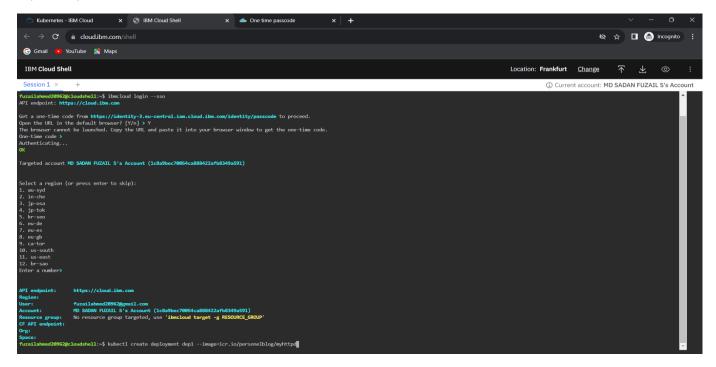
To push the namespace, login in the IBM cloud shell using this command "ibmcloud cr login". And use the following commands.

- 1. docker pull httpd
- 2. docker tag hello-world icr.io/personalblog/myhttpd:latest
- 3. docker push icr.io/personalblog/myhttpd:latest

And the namespace will be pushed into the repository. For checking type the command **"ibmcloud cr image-list"** it will show all the pushed namespaces as can be seen in the above image.



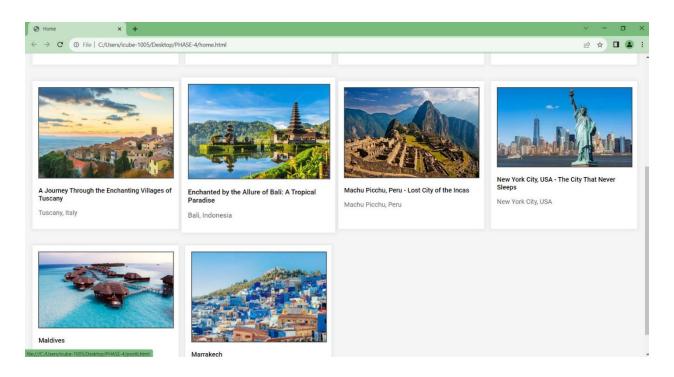
The above images show that the namespace 'personalblog' is successfully pushed into the repository.



After pushing the 'personalblog' into the container registry repository, we need to create Kubernetes cluster to deploy the image. Use the command "kubectl create deployment dep1 -- image=icr.io/personalblog/myhttpd". This can be done only after upgrading Kubernetes.

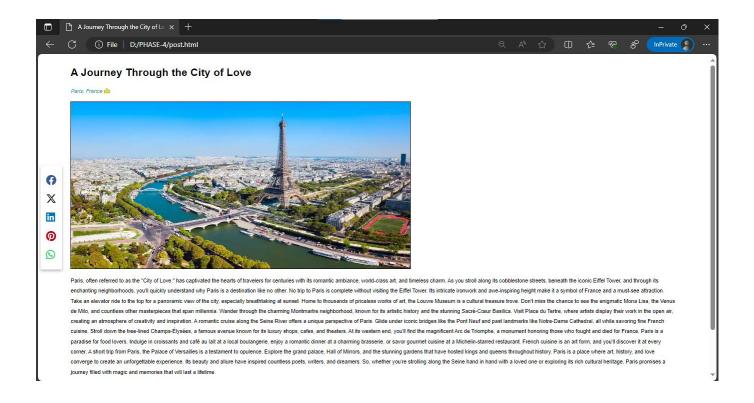
# User Interface of the Blog

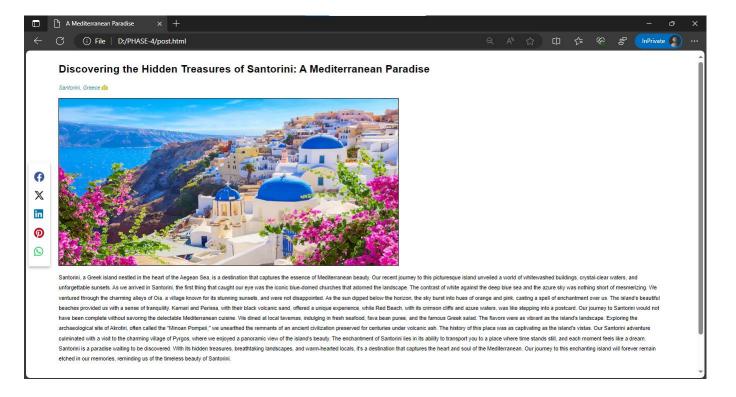






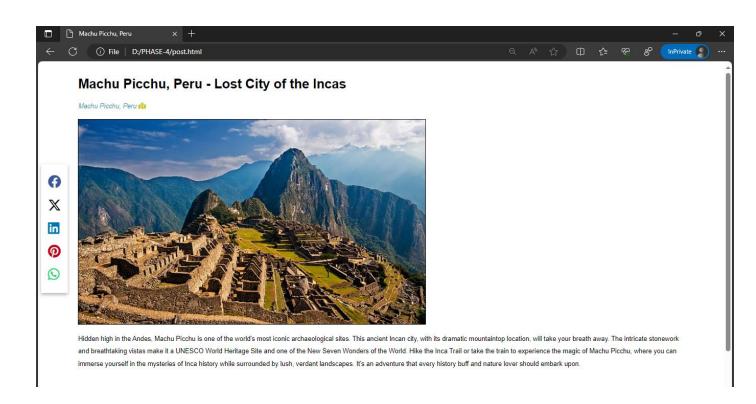




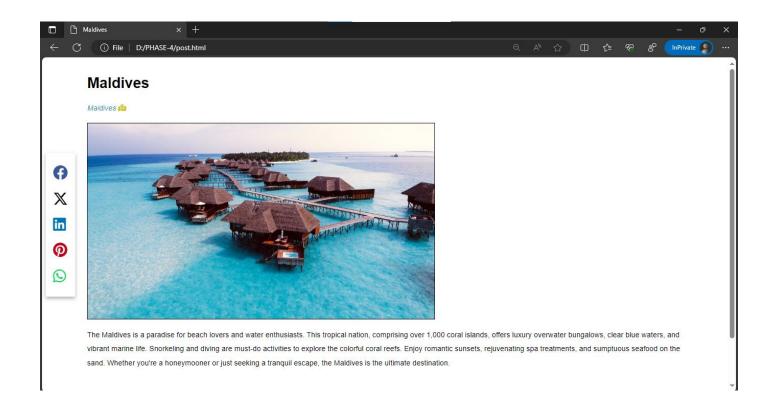


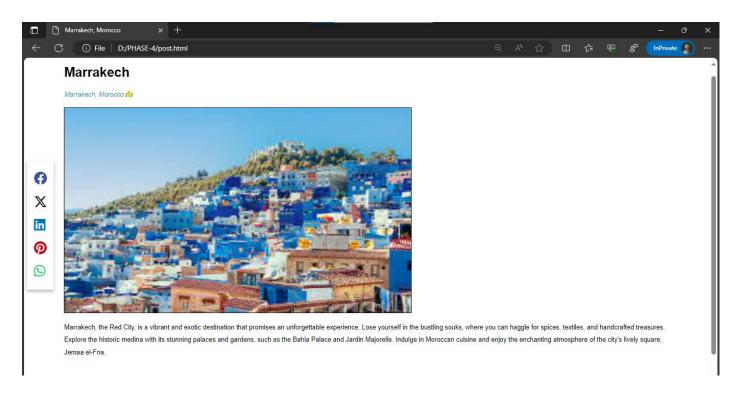












## Conclusion

In this document, we have presented our project's objective, which is to create a website that showcases our personal interests and hobbies. We have followed the design thinking process, which consists of five phases: empathize, define, ideate, prototype, and test. We have also explained the development phases of our project, which are: planning, designing, coding, testing, and deploying.

We have described the website structure, which is based on a simple and user-friendly layout. We have also discussed the content creation process, which involves researching, writing, editing, and formatting our blog posts. Technical implementation details, such as the tools and technologies that we used to build our website have been mentioned. HTML, CSS, and JavaScript were used for the front-end development, Flask for the back-end development and IBM db2/SQLlite for the database management. We have also included screenshots or images of the blog's user interface to illustrate our design choices and functionality.