



**DEPARTMENT OF COMPUTER &
SOFTWARE ENGINEERING
COLLEGE OF E&ME, NUST, RAWALPINDI**



**Subject Name
Cloud Computing
Project**

**SUBMITTED TO:
Maj Abdul Basit**

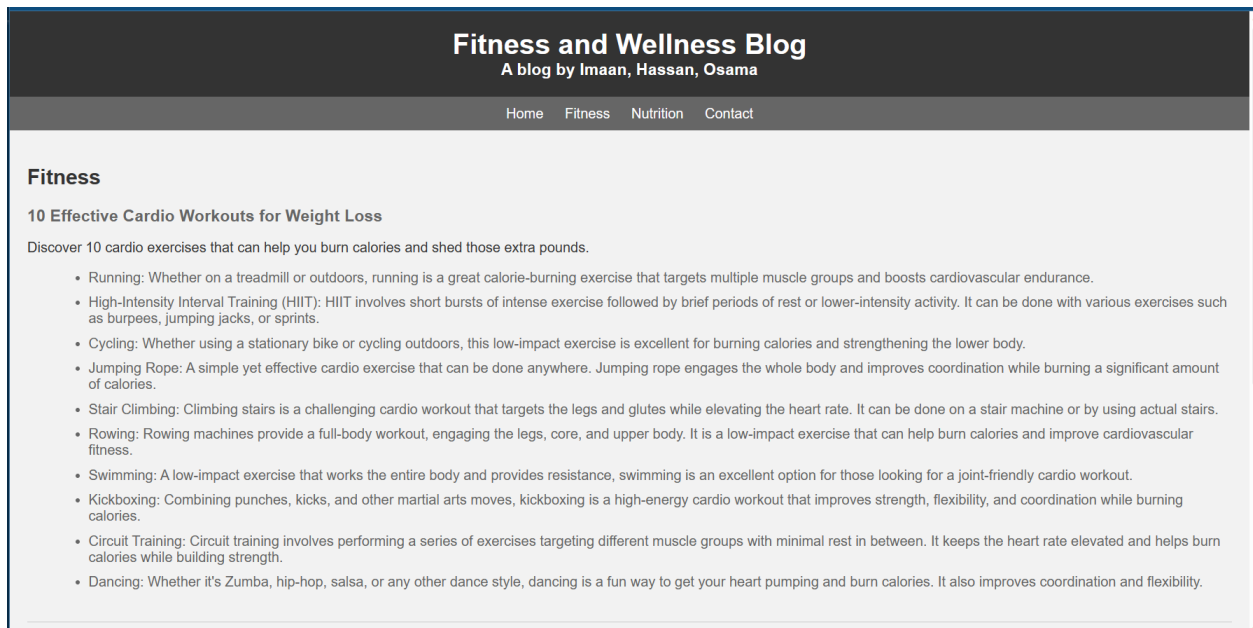
**SUBMITTED BY:
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DE- 41 Dept CE**

Screenshots of the website:

Home Page:



Fitness page:



Nutrition Page:

Fitness and Wellness Blog

A blog by Imaan, Hassan, Osama

[Home](#)[Fitness](#)[Nutrition](#)[Contact](#)

Nutrition

5 Healthy and Delicious Breakfast Ideas

Start your day off right with these nutritious and tasty breakfast options

- Oatmeal with Fresh Berries: Start your day with a bowl of oatmeal topped with a handful of fresh berries for added antioxidants and natural sweetness.
- Avocado Toast: Spread mashed avocado on whole grain toast and top it with a sprinkle of sea salt, a drizzle of olive oil, and a squeeze of lemon juice.
- Greek Yogurt Parfait: Layer Greek yogurt with mixed berries, granola, and a drizzle of honey for a protein-packed and satisfying breakfast.
- Vegetable Omelette: Whip up a colorful omelette with sautéed vegetables like spinach, bell peppers, and mushrooms for a nutritious and protein-rich breakfast.
- Whole Grain Pancakes: Make fluffy pancakes using whole grain flour and serve them with a dollop of Greek yogurt, sliced bananas, and a drizzle of pure maple syrup.

The Role of Protein in a Balanced Diet

Learn why protein is essential for your health and how to incorporate it into your meals.

- Building and Repairing Tissues: Protein is essential for the growth, maintenance, and repair of body tissues, including muscles, organs, skin, and hair.
- Muscle Development and Strength: Adequate protein intake supports muscle development and strength, making it crucial for athletes, active individuals, and those involved in strength training.
- Enzyme Production and Function: Many enzymes responsible for various biochemical reactions in the body are made up of proteins. These enzymes are essential for digestion, metabolism, and other physiological processes.

Contact Us Page:

Fitness and Wellness Blog

A blog by Imaan, Hassan, Osama

[Home](#)[Fitness](#)[Nutrition](#)[Contact](#)

Contact Us

Name:

Email:

Message:

Send

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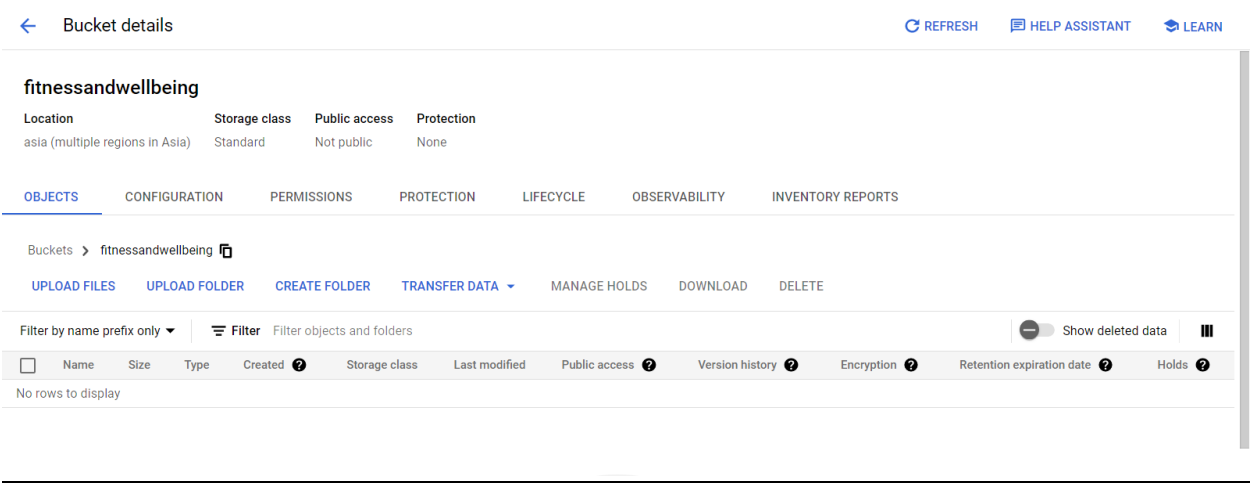
Explanation:

We created a fitness and well-being blog website for guiding fitness aspirers to gain insights. The website consists of 4 pages:

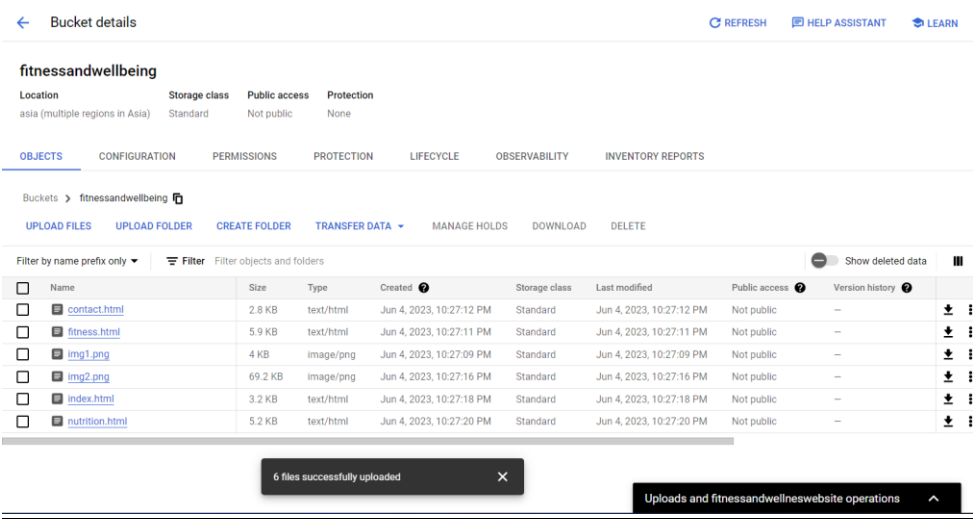
- Home Page: The purpose of the website is stated along with one image.
- Fitness Page: Different exercises are named, and their benefits are explained.
- Nutrition Page: The importance of healthy eating is emphasized and 5 healthy breakfast options are given.
- Contact Us Page: This serves to allow the user to send feedback or get into contact with the blog owners.

Documentation:

Step 1: A cloud storage bucket was created:



Step 2: The HTML files were uploaded.



Step 3: The storage bucket was given public access

Grant access to "fitnessandwellbeing"

Grant principals access to this resource and add roles to specify what actions the principals can take. Optionally, add conditions to grant access to principals only when a specific criteria is met. [Learn more about IAM conditions](#)

Resource

 fitnessandwellbeing

Add principals

Principals are users, groups, domains, or service accounts. [Learn more about principals in IAM](#)

New principals

allUsers

Assign roles

Roles are composed of sets of permissions and determine what the principal can do with this resource. [Learn more](#)

Role *

Storage Object Viewer

IAM condition (optional)

+ ADD IAM CONDITION

Read access to GCS objects.

+ ADD ANOTHER ROLE

SAVE

CANCEL

Step 4: Website Configuration

fitnessandwellbeing website configuration

Configure index and error pages for any static website associated with fitnessandwellbeing. [Learn more](#)

Index (main) page suffix

index.html

Specify a suffix to append to the URL when visitors request your top-level domain or URLs without associated objects. Ex. With the suffix index.html, example.com serves visitors content from the object example.com/index.html (if it exists).

Error (404 not found) page

Specify an object to serve when visitors request a URL that directs to no object or index page. Ex. A user visits example.com/dir – if neither that URL nor example.com/dir/index.html directs to an object, the error page is served.

CANCEL

SAVE

Step 5: Create a load balancer for scalability.

←

Create a load balancer

HTTP(S) Load Balancing

Layer 7 load balancing for HTTP and HTTPS applications [Learn more](#)

Configure

HTTP LB
HTTPS LB (includes HTTP/2 LB)

Options

Internet-facing or internal
Single or multi-region

START CONFIGURATION

Step 6: Configure its Backend and Frontend servers

←

Create a load balancer

Please answer a few questions to help us select the right load balancing type for your application

Internet facing or internal only

Do you want to load balance traffic from the Internet to your VMs or serverless services, or only between VMs in your network or serverless services?

☒ From Internet to my VMs or serverless services

☐ Only between my VMs or serverless services

Global or Regional

Do you want to deploy your application in global, regional, or classic mode?

☒ Global HTTP(S) Load Balancer

☐ Global HTTP(S) Load Balancer (classic)

☐ Regional HTTP(S) Load Balancer (recommended for Standard Network Tier)

CONTINUE

←

New Classic HTTP(S) load balancer

Load Balancer name *

Lowercase, no spaces.

☒ Frontend configuration

☒ Backend configuration

☒ Host and path rules

☐ Review and finalize (optional)

New Frontend IP and port

Name

frontendfitness

Toggle item "Protocol: HTTP, IP: Ephemeral, Port: 80"

Lowercase, no spaces.

DESCRIPTION

Protocol

HTTP

Select HTTPS to support clients that support HTTP/2. The load balancer automatically offers HTTP/2 as part of the TLS handshake.

Network Service Tier

Classic HTTP(S) load balancing supports both the Premium and Standard Network Service tiers. IPv6 addresses require Premium tier. Standard tier addresses require selecting a region for the frontend. [Learn more](#)

☒ Premium (Current project-level tier, [change](#))

☐ Standard

Your load balancer has a backend with CDN enabled. The standard network service tier can't be used while CDN is enabled.

IP version

IPv4

IP address

Ephemeral

←

New Classic HTTP(S) load balancer

HELP ASSISTANT

Load Balancer name *

Lowercase, no spaces.

Frontend configuration

Backend configuration

Host and path rules

Review and finalize (optional)

Backend configuration

Create or select a backend service for incoming traffic. You can add multiple backend services and backend buckets to serve different types of content.

Backend services & backend buckets *

fitnessbucket

Backend buckets

Name	
fitnessbucket	

Load Balancer details:

←

Load balancer details

EDIT

DELETE

VIEW IN NETWORK TOPOLOGY

HELP ASSISTANT

fitnesslb

DETAILS

MONITORING

CACHING

Frontend

Protocol	IP:Port	Certificate	SSL Policy	Network Tier
HTTP	34.36.99.201:80	-	-	Premium

Host and path rules

Hosts	Paths	Backend
All unmatched (default)	All unmatched (default)	blogbucket
hsi.example.com	/path1/*	blogbucket
hsi.example.com	/*	blogbucket

Backend

Backend buckets

1. blogbucket

Storage bucket name	Cloud CDN	Edge security policy
fitnessandwellbeing	Disabled	None

Step 7: Creating a private DNS zone for access on VM

←

Zone details

EDIT

ADD NETWORKS

DELETE ZONE

hsi

DNS name

hsi.example.com.

Type

Private

RECORD SETS

IN USE BY

ADD STANDARD

ADD WITH ROUTING POLICY

DELETE RECORD SETS

REFRESH

Filter

Filter record sets

	DNS name	Type	TTL (seconds)	Routing policy		
<input type="checkbox"/>	hsi.example.com.	NS	21600	Default	▼	
<input type="checkbox"/>	hsi.example.com.	SOA	21600	Default	▼	
<input type="checkbox"/>	hsi.example.com.	A	300	Default	▼	

EQUIVALENT REST

Challenges:

- Tried creating instance groups and instance templates, however the instances were being shown as unhealthy from the health checks.
- The VM instances were not starting.

- Domain name, hosting was not available because of high pricing.

Public URL of the website:

<https://storage.googleapis.com/fitnessandwellbeing/index.html>

IP address of load balancer:

34.36.99.201:80

Future Work: A domain/hosting name could be obtained to map to this IP address for public hosting.