1. Introduction

The objective of this project is to design and deploy a simple web application using Amazon Web Services (AWS). The project demonstrates the use of core AWS cloud services including Compute, Storage, Networking, and Database services using an AWS Free Tier account.

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2. Project Team

This project was completed as a group work with collaboration between team members.

Member	**Responsibility**	**Kachour Karim 52200125015**	
Member 1	EC2 and web server setup	**Kachour Karim 52200125015**	
Member 2	RDS database configuration	**Kachour Karim 52200125015**	
Member 3	S3 storage setup	**Kachour Karim 52200125015**	
Member 4	Documentation and GitHub repository	**Kachour Karim 52200125015**	

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3. AWS Services Used

3.1 Amazon EC2 (Compute)

Amazon EC2 was used to host the web server. An Amazon Linux 2 instance was launched and configured with Apache to serve the website.

Screenshot #1 : EC2 running

3.2 Amazon RDS (Database)

Amazon RDS with MySQL engine was used to create a managed relational database to support the application.

3.3 Amazon S3 (Storage)

Amazon S3 was used to store static files related to the project.

3.4 Amazon VPC and Security Groups (Networking)

Networking was managed using Amazon VPC. Security Groups were configured to allow HTTP and SSH access.

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4. Project Architecture

The user accesses the website through a web browser.
Requests are sent to the EC2 instance hosting the web server.
The EC2 instance can communicate with the RDS database.
Static files are stored in an S3 bucket.

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5. Step-by-Step Guide (Replication Guide)

Step 1: Create an EC2 Instance

- Launch Amazon Linux 2 (t2.micro)
- Configure Security Group (HTTP & SSH)
- Start the instance

Screenshot #2 : page Apache visible

Step 2: Install Web Server

sudo yum update -y

sudo yum install httpd -y

sudo systemctl start httpd

sudo systemctl enable httpd

Step 3: Create RDS Database

- Engine: MySQL
- Template: Free Tier
- Public access: No

Screenshot #3 : RDS available

Step 4: Create S3 Bucket

- Create a bucket
- Upload at least one file

Screenshot #4 : bucket visible

Step 5: Test the Application

- Access the website using the EC2 public IP
- Verify RDS and S3 are active

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6. Results

The website is accessible through the internet.
The EC2 instance runs successfully.
The database and storage services are properly configured.

Screenshots are provided to demonstrate the working services.

“All project materials, including this report and any code/files used, are available at: https://github.com/Shenmuee/project-cloud-computing”