What is AWS

AWS is short for Amazon web services, and in short it is a reliable platform which many use to host their website online. The term host is where we can see some of amazon's tools that will keep the website running so that we don't need to have our own code running from our end.

Link to AWS:
https://aws.amazon.com/?nc2=h_lg

Why AWS

- Widely used globally
- Safe and reliable
- secure
- Professional
- Lots of tools to help manage and run

How

- Choosing the right package

There are two main types of websites one being static and the other being dynamic. For this case we are a dynamic website, this is where the page changes for different users as different users will have different filters and data displayed. We recommend choosing AWS EC2, Amazon Elastic Compute Cloud (Amazon EC2) to operate dynamic websites. This is a higher end package with high resources and computational power available across all platforms.

Link to AWS EC2
https://aws.amazon.com/ec2/?p=solution&c=usecase&pd=website&z=8

Using AWS, EC2, Streamlit

1. Creating and launching a EC2 Instance
    a. Create a free AWS account
    b. Search and Select EC2
    c. Click launch an instance
    d. Choose
        i. Ubuntu server 24.04 LTS
        ii. Instance type should be t2.micro (free tier option)
        iii. Create a new key pair (.pem) and download it
    e. Allow access to these ports in the security group
        i. SSH (22) - for remote access
        ii. Custom TCP(8501) - for streamlit Dashboard
    f. Launch the instance
2. Converting .pem to .ppk for PuTTY
    a. Download and open PuTTYgen
    b. Load your .pem file
    c. Save it as a .ppk file to use with PuTTY
3. Connect Via PuTTY

    a. Host: `ubuntu@<your-ec2-public-ip>`
    b. Under connection > SSH >Auth, browse for the .ppk file
    c. Click Open to connect
4. Install Software
    a. Once connected in the PuTTY terminal:
        i. sudo apt update
        ii. sudo apt install python3-pip git python3-venv –y

5. Clone Github repository
   Use a personal access token to bypass github password authentication
    a. In the PuTTY terminal
        i. git clone https://<your-username>:<your-token>@github.com/rmit-computing-technologies/Data-science-project-.git
        ii. Cd Data-science-project-
6. Set up Python Virtual environments
    a. python3 -m venv venv
    b. source venv/bin/activate
7. Install the required packages
    a. pip install streamlit pandas numpy openpyxl
8. Run the dashboard
    a. streamlit run dashboard.py --server.port 8501 --server.enableCORS false
9. Access the dashboard
    a. The terminal will promopt you with a link to acces the website
    b. (e.g., `http://13.210.70.102:8501`)

Summary

in conclusion AWS is a cloud platform made by Amazon that allows users to run and manage websites online without needing our own physical servers. It's very widely used around the world due to being powerful, flexible and reliable.