Part A: Basic System Architecture

For a business, this cloud architecture is created to enable an internet ordering system. Three basic components make it a web server user interact with, a backend server handling order processing, and a database securely storing all product and order information.

Given our group's relatively high usage number Group 22 we had to pick AWS options that wouldn't fail but also wouldn't cost too much. This setup balances both well. Our arrangement strikes a balance both.

Web Server
We selected a t3. medium EC2 instance for the web server; it provides 2 vCPUs and 4 GB RAM. That's enough to display the website content and manage user traffic. Though still quick enough for thousands of users, it is also less expensive than other larger cases.

Backend Server
The backend does the heavy lifting by handling orders and passing data between the web and database. Consequently, we chose a t3. large EC2 with 2 vCPUs and 8 GB of RAM. Because the extra memory will be used mostly in calculations and data logic, we believe this is a wise option.

We're using Amazon RDS with MySQL to store the data. The instance type is db. m6g. large, which also runs 2 vCPUs and 8 GB RAM. To ensure it doesn't lag while storing thousands of write requests, we supplied it 100 GB (GP3 SSD). This lets it manage reading and writing information very quickly.

Everything is hosted inside a VPC to keep things secure. only the web server is accessible to the internet via an Internet Gateway. Only conversing with one another inside the same network, the backend and database are secret. We also utilised security groups to restrict access among every section.

Figure 1: vCPU & RAM allocation per component