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QUESTION 1-

🡪 In this question, I was required to draw a labelled n-tier architecture of an e-travel portal. I’ve explained about the diagram in detail here in my own words:

-**The User Presentation layer:**

This layer here is what the users see as a platform. This is where the user interacts with the website, and depending upon the user’s choice, they get their required results by applying certain filters such as what is their budget, how many days they want it for, what are the ratings of the place and many more. This is where they initiate their choice and receive the particular results for their choices once the portal fetches that information from the database.

-**The Business Logic Layer:**

This layer can be understood as an interpreter layer between the Presentation layer and the Data management layer. The reason is that, this layers performs all the logical operation for the request from the user, process it logically- make decisions and then communicate with the data management layer to get the correct information, processes it and then return it to the user as a response.

-**The Data Management Layer**

This layer stores or retrieve dat for the requests the user have and pass it on to the business logic layer to process it logically. The business logic layer and the data management layer works hand in hand to return the dat to the user.

Down below is the labelled diagram for the same.

Diagram

Description automatically generated

QUESTION-2

🡪In a general 5-layer network architecture, there are these following layers:

5)Application layer (user interface)

4)Transport layer (data transportation)

3)Internet layer (efficient routing of packets)

2)Data link layer (error free tranmission of data)

1)Physical layer (transceiver)

These layers have their own characteristics and functionalities and the same with the given example is stated below:

-The application layer generated the data connection between let’s say a web browser and a server. This layer controls the user interface.

-The transport layer establishes the connection between remote host and an applicaion. This layer controls the data transportability from one system to another.

-The internet layer is responsible for creating packets and facilitates efficient routing of these packets over the network.

-The data link layer is responsible for creating frames and ensure that there are no errors in the transmission over the network.

-The physical layer is responsible for sending a stream of data over a physical medium. This is the lowest layer of the TCP/IP protocol.

**5)Application layer 4)Transport layer 3)Internet layer 2)Data link layer 1)Physical layer**

**TORONTO:**

**Layer 5-** Call a taxi for the travel to the airport

**Layer 4-** Find the right gate for the flight booked. Go through immigration & security check, hand in baggage for security screening.

**Layer 3-** Claim the boarding pass for the flight.

**Layer 2-** Find the hand luggage from the baggage carousel to take it in-flight.

**Layer 1-** Board onto the flight, flight takes off.

**LONDON:**

**Layer 1-** Flight lands, disembark the plane.

**Layer 2-** Clear the immigration and get a stamp on the passport.

**Layer 3-** Claim the checked-in luggage from the baggage carousel.

**Layer 4-** Head to the right terminal for exit

**Layer 5-** Call a taxi to get to the final destination of that city

Diagram

Description automatically generated

QUESTION-3

Connection at my home to access the Internet-

There are mainly 4 steps to connect my computer to the internet at my home.

Firstly, my ISP (Bell) has access to the internet.

Secondly, my ISP sends the internet to my Modem at my home via a wired connection.

Thirdly, my Modem is connected with a Bell home hub router that has the ability to connect more than 1 device wirelessly and also with ethernet.

Next, my Ground floor home router is connected with a wireless range extender on my first floor to maximize the coverage of my wifi and reduce the speed drop. I usually connect mostly to my wireless extender, as it has the best range from my room.

Down below is the labeled diagram for the same:

Diagram

Description automatically generated

Connection from my home to Seneca’s web server-

There are a few layers for accessing the Seneca website from my home.

Firstly, my computer is connected to my home router (my ISP-provided router).

Secondly, my home network border router is connected with the Seneca’s border router

Next, the router is then connected with the proxy server of the Seneca’s network

Next, before the actual website, the network systems is protected with a firewall

Lastly, it goes to the Seneca’s server to fetch the information.

Diagram

Description automatically generated