Web Technologies

Exercise Sheet 1 – Web-Shop - Presentations and HTML

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Contents

1 General Questions

1.1 Topologies

Topologies	Advantages	Drawbacks
Star	+ easy and inexpensive to implement	- fully dependent on the stability and performance of the central node
Bus	+ inexpensive to implement + allow nodes to added and removed without circumstance + network is independent of failure of individual nodes	- extension of bus network is limited due to physical constraints
Meshed	+ independent of failure of individual nodes	- link costs are high

1.2 Circuit Switching vs. Packet Switching

Circuit Switching
Circuit switching establishes a dedicated communication path between two devices before data transmission begins. This path, or circuit, remains open and reserved for the duration of the communication, even if no data is being transmitted. This is similar to a dedicated phone line.

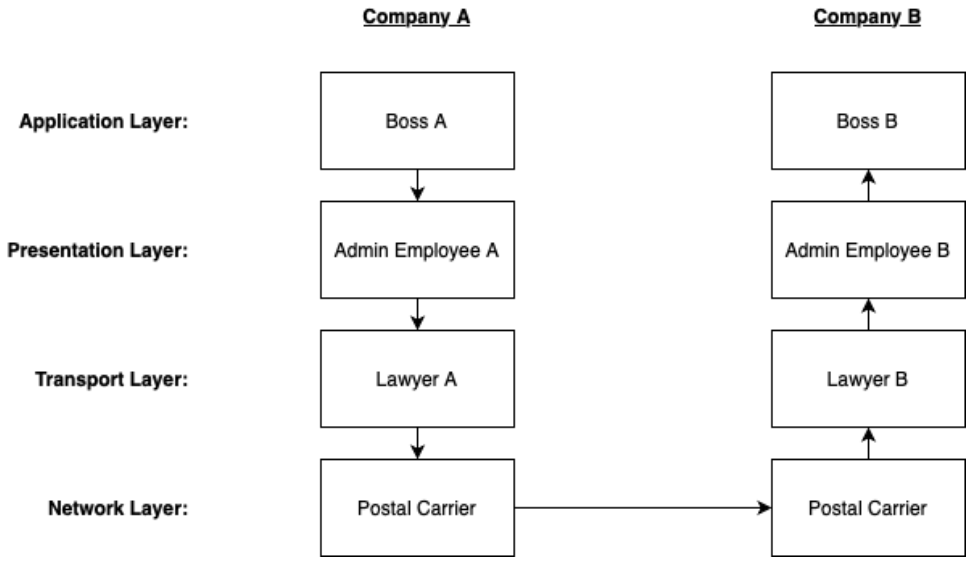
Packet Switching
Packet switching, on the other hand, breaks data into small packets that are independently transmitted over the network. E ach packet contains the destination address and sequence information, allowing them to be reassembled at the receiver's end. The network doesn't establish a dedicated path; packets from different sources can share the same physical links, making more efficient use of network resources.

Example: Phone Call vs. Email
Imagine a phone call (circuit switching) and sending an email (packet switching):

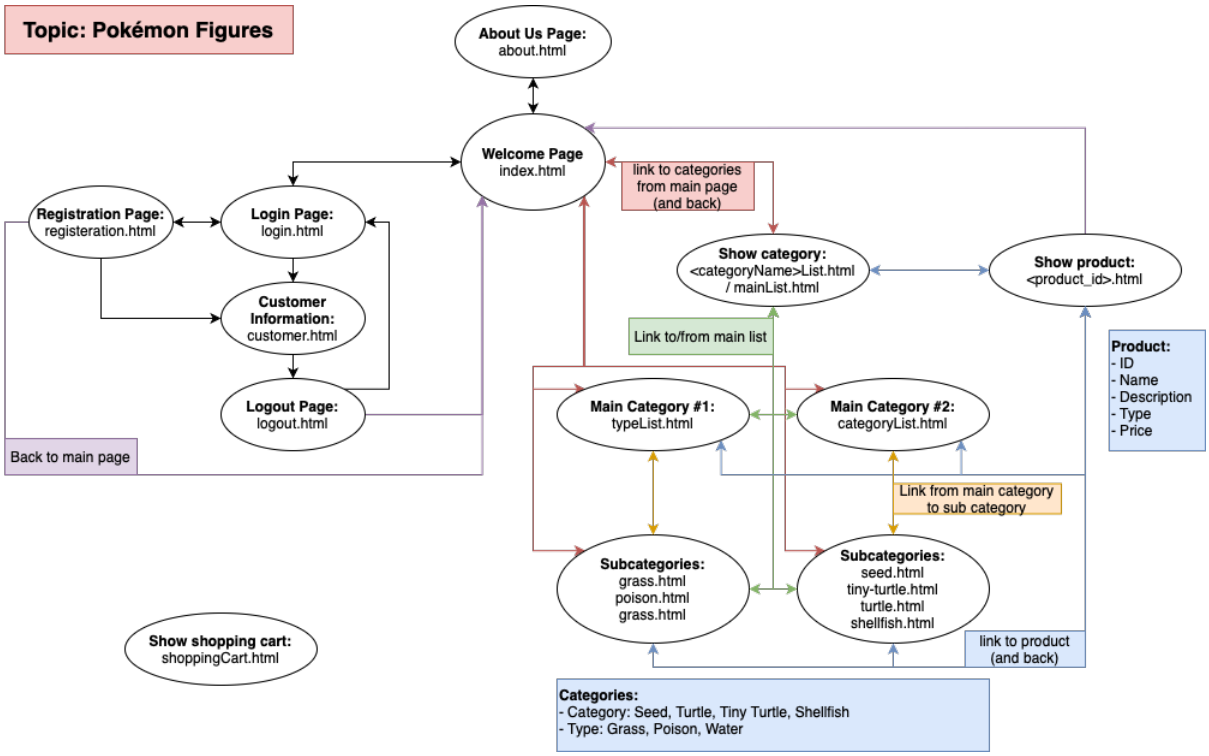
- *Email (Packet Switching)*
  When you dial a number, the phone network establishes a dedicated circuit between your phone and the recipient's phone. This circuit remains open for the entire duration of the call, regardless of whether you're speaking or silent. No one else can use that circuit during your call.

- *Phone Call (Circuit Switching)*
  When you send an email, it is broken down into packets. Each packet travels independently across the internet, potentially taking different routes. The packets may be interspersed with packets from other users sharing the same network infrastructure. At the recipient's end, the packets are reassembled to form the original email.

1.3 Communication Layers



2 Conceptual Model



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