

1. Explain the various steps involved in creating a grocery e-commerce website using systems development lifecycle.

A. Project Planning:

Create a detailed project plan, including timelines, budgets, resource allocation and risk assessment.

System Design:

Create the architecture and design of the website, including database design, user interfaces and security measures. Decide on the technology stack and third-party integrations.

Building the system:

Develop the grocery e-commerce website according to the design specifications. Write the code for frontend and back-end components.

Testing:

Conduct various testing phases, such as unit testing, integration testing and user acceptance testing, to identify and fix defects and ensure the website functions correctly.

Deployment:

Deploy the website on a production server or cloud infrastructure. Configure domain names, web servers and security measures.

2. Explain the factors in website optimization.

A: The optimization of website performance is more complicated than it seems and involves atleast three factors :

- Page Content

- Page generation and

- page delivery.

- Page Content :

→ Using efficient styles and techniques for page design and content can reduce response times by two to five seconds.

→ simple steps include reducing unnecessary HTML comments and white space using more efficient graphics.

- Page generation :

→ Page generation speed can be enhanced by segregating computer services to perform dedicated functions.

→ Using a single server or multiple servers to perform dedicated functions reduces throughput to more than 50%.

- Page Delivery :

→ It can be sped by using edge-caching services like Akamai or specialized content delivery networks such as Real Networks or by increasing local bandwidth.

3. How to build / host e-commerce website?
Describe how owning or outsourcing a website will benefit with suitable example.

A. i) Planning:

- Define your niche and target audience.
- set clear business objectives and goals.

ii) Domain and Hosting:

- Register a domain name that reflects your brand.
- Choose a reliable hosting provider.

iii) Platform selection:

- Choose an e-commerce platform like Shopify, WooCommerce, Magento or custom development.

iv) Design and Development:

- Design a user-friendly, visually appealing website with clear navigation.
- Ensure mobile responsiveness.

v) Content creation:

- Create high-quality product descriptions, images and videos.

vi) Security and Payment Integration:

- Implement robust security measures to protect customer data.

vii) Testing:

- Thoroughly test the website for functionality, performance and security.

Owning a Website:

1. Control:

You have full control over your website's design, content and functionality.

2. Cost - efficiency:

Over time, owning your website can be more cost effective than outsourcing, as you don't need to pay ongoing service fees.

3. Example:

If you own a small online craft store and want maintain a unique brand image with frequent updates to your product offerings, owning your websites gives you the flexibility to do so without relying on external agencies.

Outsourcing a website:

1. Expertise:

You can tap into the expertise of professional web developers, designers and marketers.

2. Time - saving:

Outsourcing frees up your time to focus on core business activities.

3. Example:

Suppose you run a buy online fashion store with limited technical knowledge, outsourcing your websites development and maintenance to a

specialized e-commerce agency ensures that your site runs smoothly stays secure.

4. Discuss about right-sizing the hardware platform.

A: Customer demand:

→ Most important factor affecting speed of site.

Factors in overall demand:

→ No. of simultaneous users in peak periods.

→ Nature of customer requests.

→ Type of content.

→ Required security

→ No. of items in inventory

→ No. of page requests.

→ Speed of legacy applications.

Factors in right-sizing e-commerce platform:

→ Scalability:

• Availability of site to increase in size as demand warrants.

→ Ways to scale hardware:

• Vertically: Increase processing power of individual components.

• Horizontally: Employ multiple computers to share workload.

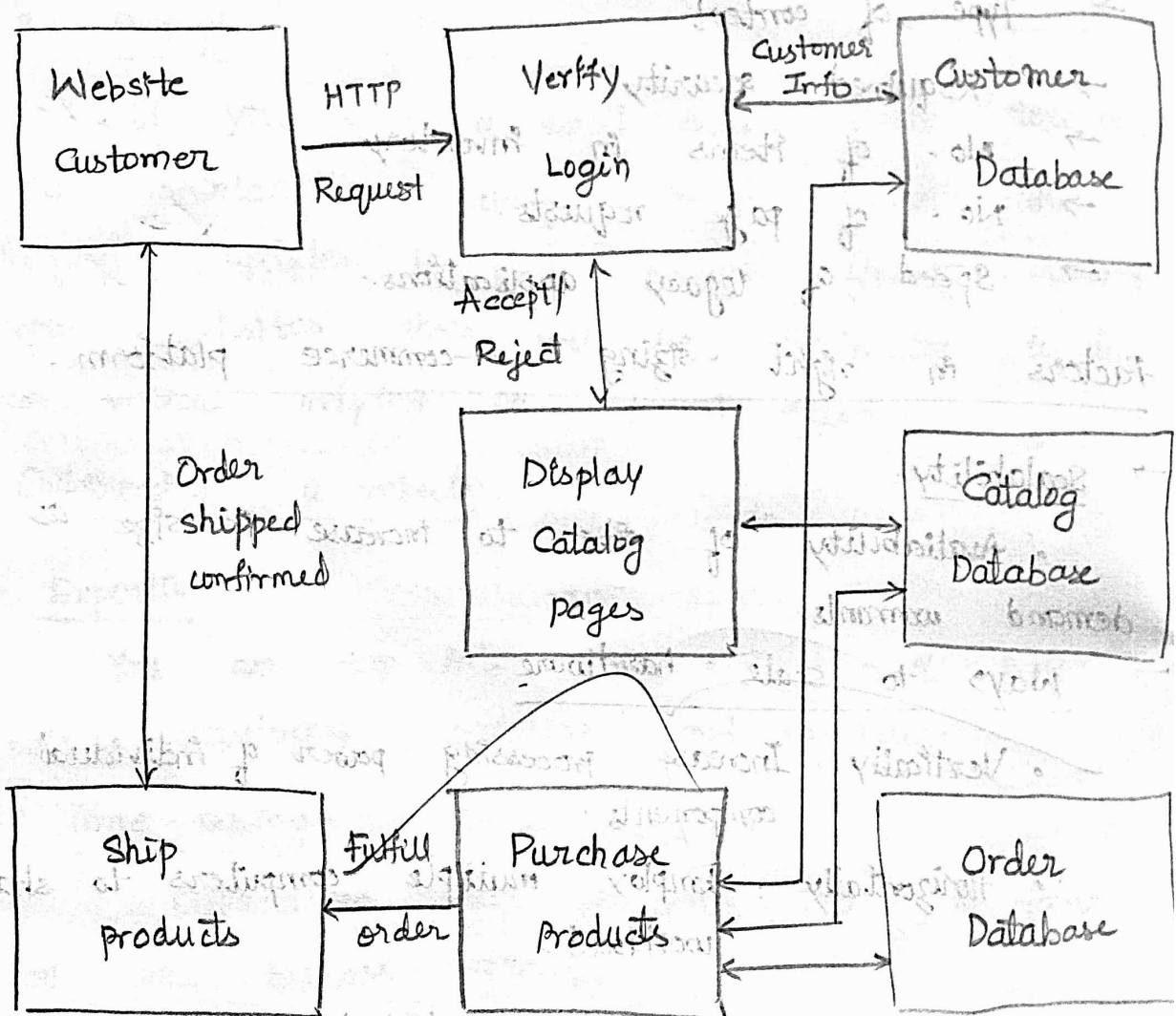
• Improve processing architecture.

5. Explain types of system design with neat sketch.

A: Two components of system design are:

1) Logical Design:

A logical design involves a data flow diagram that describes the flow of information at your e-commerce. the processing functions that must be performed and the databases that will be used.

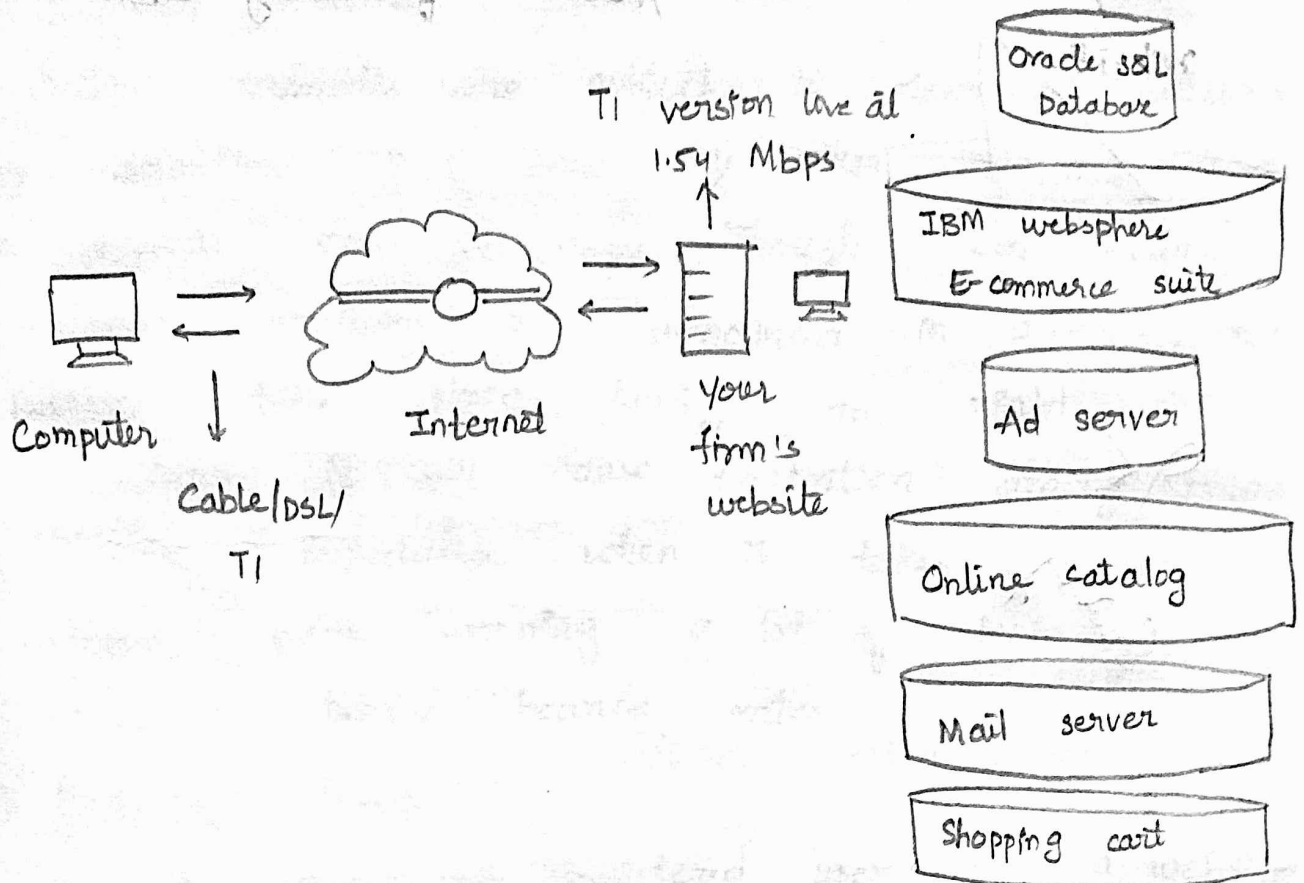


Logical Design for a simple website

ii) Physical Design :

→ A physical design translates the logical design into physical components.

→ specifies actual physical, software components, models and so on.

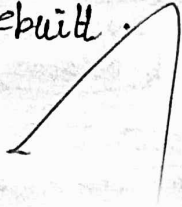


6. Why does it cost so much to maintain an e-commerce site?

- A.:
- E-commerce sites are always in a process of change, improvement and correction.
 - Studies of traditional systems maintenance have found 20% of the time is devoted to debugging code and responding to emergency situations.
 - Another 20% of the time is concerned with changes in reports, data files and links to backend databases.

- The remaining 60% of maintenance time is devoted to general administration and making changes and enhancements to the system.

- E-commerce sites are never finished, they are always in the process of being built and rebuilt.



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