High Level Design (HLD)

E-Commerce Website

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Document Version Control

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| Version | Description | Author |
| 1.0 | Created flowcharts and made idea about project | Tejas Gund |
| 1.1 | Made frontend of the project | Tejas Gund |
| 1.2 | Created payment gateway | Tejas Gund |
|  | Finalized project | Tejas Gund |

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**Introduction**:

E-Commerce, also known as electronic commerce or internet commerce, is an activity of buying and selling goods or services over the internet or open networks. So, any kind of transaction (whether money, funds, or data) is considered as E-commerce. So, E-commerce can be defined in many ways, some define E-Commerce as buying and selling goods and services over the Internet, others define E-Commerce as retail sales to consumers for which the transaction takes place on open networks. The buying and selling of products, services, and digital products through the Internet all fall under the umbrella of e-commerce.

“All forms of transactions relating to commercial activities, including both organizations and individuals, which are based on the processing and transmission of digitized data including text, sound, and visual images.” According to this view, E-commerce does not necessarily require the use of the Internet. E-commerce includes all forms of transactions that process and transmit digitized data which includes text, sound and visual images.

E-commerce is the application of information technology and communication technology to three basic activities related to commercial business, the three basic activities are as follows:

1. Production and support- which includes assisting production, distribution, and maintenance of goods and services.
2. Transaction preparation- which includes getting product information into the market-place and bringing buyers and sellers into contract with each other; and
3. Transaction completion- which includes concluding transactions, transferring payments, and securing financial services.

**Objectives:**

The objectives for this project are:

1. Create a set of requirements for a Website CMS for small businesses based on research
2. Build and test a prototype of a Website CMS for small businesses based on the requirements found
3. Knowing when an item was saved or not saved in the shopping cart.
4. Returning to different parts of the site after adding an item to the shopping cart.
5. Easy scanning and selecting items in a list.
6. Effective categorical organization of products.
7. Simple navigation from home page to information and order links for specific products.
8. Obvious shopping links or buttons.
9. Minimal and effective security notifications or messages.
   1. Consistent layout of product information.

**Web Development:**

**Web development** is the work involved in developing a [website](https://en.wikipedia.org/wiki/Web_site) for the [Internet](https://en.wikipedia.org/wiki/Internet) ([World Wide Web](https://en.wikipedia.org/wiki/World_Wide_Web)) or an [intranet](https://en.wikipedia.org/wiki/Intranet) (a private network).[[1]](https://en.wikipedia.org/wiki/Web_development#cite_note-:0-1) Web development can range from developing a simple single [static page](https://en.wikipedia.org/wiki/Static_Web_page) of [plain text](https://en.wikipedia.org/wiki/Plain_text) to complex [web applications](https://en.wikipedia.org/wiki/Web_application), [electronic businesses](https://en.wikipedia.org/wiki/Electronic_business), and [social network services](https://en.wikipedia.org/wiki/Social_network_service). A more comprehensive list of tasks to which Web development commonly refers, may include [Web engineering](https://en.wikipedia.org/wiki/Web_engineering), [Web design](https://en.wikipedia.org/wiki/Web_design), [Web content development](https://en.wikipedia.org/wiki/Web_content_development), client liaison, [client-side](https://en.wikipedia.org/wiki/Client-side_scripting)/[server-side scripting](https://en.wikipedia.org/wiki/Server-side_scripting), [Web server](https://en.wikipedia.org/wiki/Web_server) and [network security](https://en.wikipedia.org/wiki/Network_security) configuration, and [e-commerce](https://en.wikipedia.org/wiki/E-commerce) development.

Among Web professionals, "Web development" usually refers to the main non-design aspects of building Web sites: writing [markup](https://en.wikipedia.org/wiki/Markup_language) and [coding](https://en.wikipedia.org/wiki/Computer_programming).[[2]](https://en.wikipedia.org/wiki/Web_development#cite_note-2) Web development may use [content management systems](https://en.wikipedia.org/wiki/Content_management_system) (CMS) to make content changes easier and available with basic technical skills.

For larger organizations and businesses, Web development teams can consist of hundreds of people ([Web developers](https://en.wikipedia.org/wiki/Web_developer)) and follow standard methods like [Agile methodologies](https://en.wikipedia.org/wiki/Agile_software_development) while developing Web sites.[[1]](https://en.wikipedia.org/wiki/Web_development#cite_note-:0-1) Smaller organizations may only require a single permanent or contracting developer, or secondary assignment to related job positions such as a [graphic designer](https://en.wikipedia.org/wiki/Graphic_designer) or [information systems](https://en.wikipedia.org/wiki/Information_systems) technician. Web development may be a collaborative effort between departments rather than the domain of a designated department. There are three kinds of Web developer specialization: [front-end developer](https://en.wikipedia.org/wiki/Front-end_Web_development), back-end developer, and full-stack developer.[[3]](https://en.wikipedia.org/wiki/Web_development#cite_note-3) Front-end developers are responsible for behavior and visuals that run in the user browser, while back-end developers deal with the servers. Since the commercialization of the Web with [Tim Berners-Lee](https://en.wikipedia.org/wiki/Tim_Berners-Lee)[[4]](https://en.wikipedia.org/wiki/Web_development#cite_note-4) developing the World Wide Web at CERN, the industry has boomed and has become one of the most used technologies ever.

**UI Development:**

What is a UI Developer?

A [UI (User Interface)](https://www.simplilearn.com/what-is-ui-ux-design-and-difference-between-ux-and-ui-article) developer specializes in designing and developing the visual and interactive components of websites, [web applications](https://www.simplilearn.com/progressive-web-apps-article), and mobile applications. The user interface has a direct impact on user experience. Therefore, a UI developer deals with the interface's technical aspects while considering the visuals, creative elements, and ease of use pertaining to websites and applications.

The Role and Responsibilities of a UI Developer

While the role and responsibilities of a UI developer can vary depending on the organization they work for and the specific project they are working on, some common responsibilities of a UI developer include:

1. Designing user interfaces: A UI developer is responsible for creating user interfaces that are visually appealing, easy to use, and intuitive.
2. Writing codes: They write clean, efficient, and maintainable code using [front-end web development](https://www.simplilearn.com/how-to-become-a-front-end-developer-article) technologies such as [HTML,](https://www.simplilearn.com/tutorials/html-tutorial/what-is-html) [CSS](https://www.simplilearn.com/tutorials/css-tutorial), and [JavaScript](https://www.simplilearn.com/tutorials/javascript-tutorial/introduction-to-javascript).
3. Implementing designs: These professionals also work closely with the design team to implement the designs into the final product to ensure the design is accurately translated into a functional interface.
4. Creating and testing prototypes: Before implementing a specific user interface, prototype creation is a crucial step that helps identify any glitches, shortcomings, or loopholes. UI developers create prototypes of the user interface and test them with users to ensure that the design meets the requirements of the end users. Further, they check if the user interface is compatible with different browsers and devices.
5. Optimizing performance: UI developers also ensure the interface runs smoothly. Therefore, they optimize the user interface to ensure that it loads quickly and performs efficiently. They also test the user interface to ensure that it works as expected and is free of bugs.

**Software requirements or specifications:**

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| Number | Description |
| 1. | Windows 7,8,10,11 |
| 2. | HTML/CSS/JavaScript/Node/Firebase |

**Data flow diagrams:**





