

**VIETNAM NATIONAL UNIVERSITY – HO CHI MINH CITY
INTERNATIONAL UNIVERSITY
SCHOOL OF COMPUTER SCIENCE AND ENGINEERING**



**WEB APPLICATION DEVELOPMENT REPORT
PROJECT TOPIC: MOBILE STORE**

Group member

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**Ho Chi Minh City, Vietnam
Year 2019**

CHAPTER I : INTRODUCTION

○ **Motivation**

In a few years ago in Vietnam, the demand of online shopping is increasing suddenly. This will lead to the outbreak of the E-commerce website such as Sendo, Lazada, Tiki, etc...which satisfy the customers. There are two types of E-commerce website:

1. Multi-product website: Sell many type of products such as foods, drinks, clothes, electronic devices, etc...
2. Focused product website: Sell some type products but focus to highlight them.

This project focus on the second type and develop a website that support to customers to buy mobile devices more easily, a website that is attractive to them.

○ **Problems Statement**

Whenever a new mobile device is needed, people will not need to spend time go directly to the store. They visit online to view list of product, make a payment and get delivered product to the place.

○ **Scope**

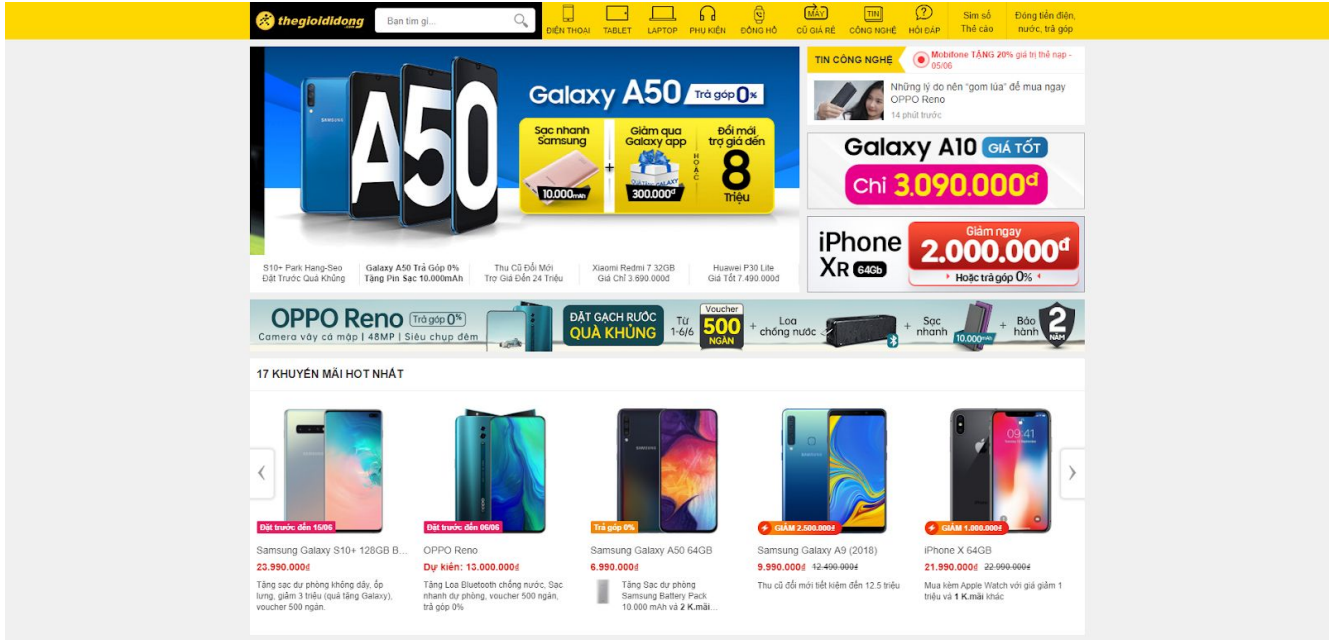
This system will be an website for any people or any companies who want to use system. The system will be designed to help the user to:

- Search for products.
- Advance search.
- Follow products.
- Make a payment.
- Manage previous payment history.

• CHAPTER II: LITERATURE REVIEW

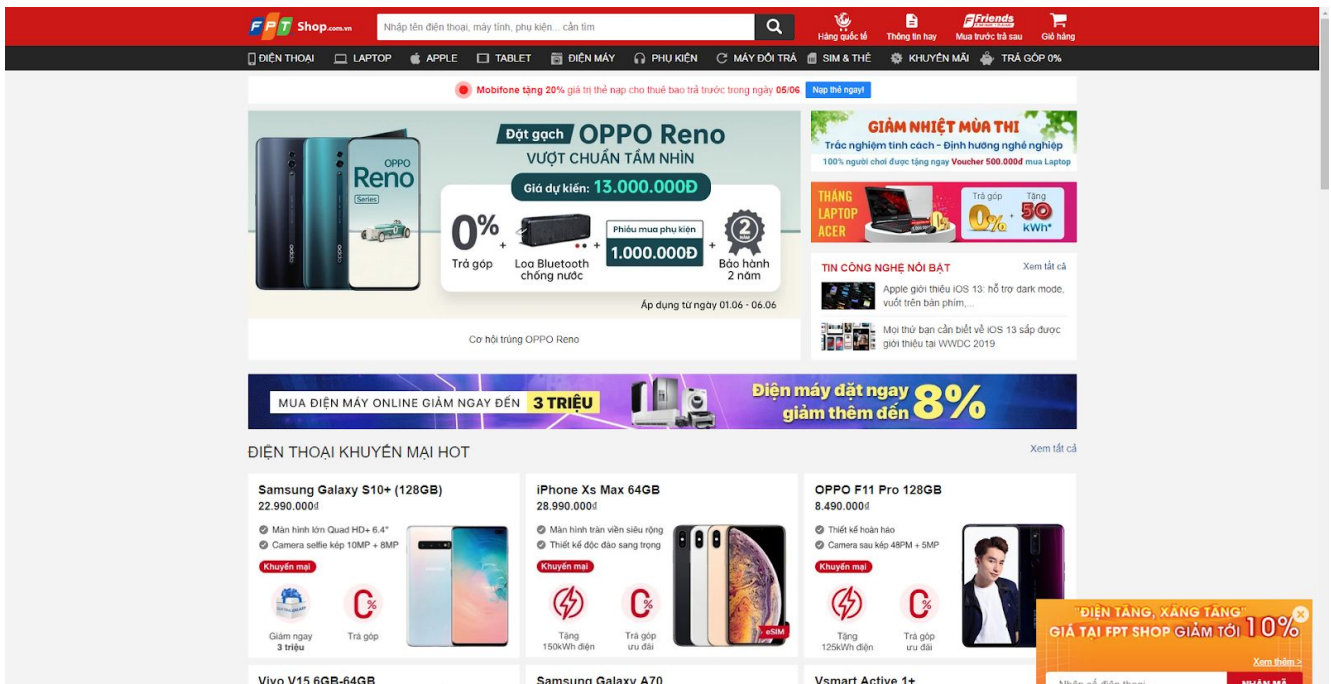
◦ Similar Applications/Systems

Thegioididong [1]



The screenshot shows the homepage of Thegioididong, a Vietnamese mobile phone retailer. The header features a yellow navigation bar with categories like DIEN THOAI, LAPTOP, and PHU KIỆN. A large banner for the Samsung Galaxy A50 is prominent, highlighting a 0% interest rate and a trade-in offer. Below this, there are sections for other phones like the Galaxy A10 and iPhone XR, each with their respective prices and promotional offers. A section titled '17 KHUYẾN MÃI HOT NHẤT' (17 Hottest Promotions) displays various deals on different phone models, including Samsung Galaxy S10+, OPPO Reno, and Samsung Galaxy A50. The bottom of the page features a large banner for 'MUA ĐIỆN MÁY ONLINE GIẢM NGAY ĐẾN 3 TRIỆU' (Online purchase of electronics up to 3 million VND off) and a section for 'DIỆN THOẠI KHUYẾN MÃI HOT' (Hotly promoted mobile phones) with specific offers on models like the Samsung Galaxy S10+, iPhone Xs Max, and OPPO F11 Pro.

FPT Shop [1]



The screenshot shows the homepage of FPT Shop, another Vietnamese mobile phone retailer. The header has a red navigation bar with categories like DIEN THOAI, LAPTOP, and PHU KIỆN. A large banner for the OPPO Reno is featured, highlighting a 0% interest rate and a trade-in offer. Below this, there are sections for other phones like the Galaxy A9 and iPhone X. A section titled 'GIẢM NHẬT MÙA THI' (Exam Season Discount) offers a 50% discount on laptops. The bottom of the page features a large banner for 'MUA ĐIỆN MÁY ONLINE GIẢM NGAY ĐẾN 3 TRIỆU' (Online purchase of electronics up to 3 million VND off) and a section for 'DIỆN THOẠI KHUYẾN MÃI HOT' (Hotly promoted mobile phones) with specific offers on models like the Samsung Galaxy S10+, iPhone Xs Max, and OPPO F11 Pro. A large orange banner at the bottom right promotes a 'DIỆN TẶNG, XÀNG TẶNG' (Gift with purchase) offer of up to 10% off on all products.

o Platform and Tools Review [2]



- **Netbeans 8.2:** An IDE tool for code editor and execution. Netbeans can support other framework or platform such as Maven, Angular, Ajax, etc...



- **Apache Maven:** A software project management and comprehension tool. Based on the concept of a project object model (POM), Maven can manage a project's build, reporting and documentation from a central piece of information. Netbeans also integrated this tool to easily import many libraries.



- **Draw.io:** An open source technology stack for building diagramming applications, and the world's most widely used browser-based end-user diagramming application. This is a great tool for design, not only for drawing UML diagram but also help the designer sketch an outline for graph, website, etc...



- **MySQL:** Open-source relational database management system (RDBMS). It is free and open-source software under the terms of the GNU General Public License, and is also available under a variety of proprietary licenses.



- **Spring Framework:** Application framework and inversion of control container for the Java platform. The framework's core features can be used by any Java application, but there are extensions for building web applications on top of the Java EE (Enterprise Edition) platform. This project used this framework in order to convert the text from any file into string.

- **CSS Grid Layout Generator:** A tool which can generate the HTML and CSS code based on the drag and drop user interface



- **Bootstrap:** A free and open-source CSS framework directed at responsive, mobile-first front-end web development. It contains CSS- and (optionally) JavaScript-based design templates for typography, forms, buttons, navigation and other interface components. This framework will be applied in the project in the future.

CHAPTER III: SYSTEM DESIGN

System Requirement Specification

System requirements are expressed in a website requirement document. The website requirement specification is the official of what is required of the system developers. This requirement document includes the requirements definition and the requirement specification. The website requirement document is not a design document. It should set out what the system should do without specifying how it should be done. The requirement set out in this document is complete and consistent.

The website specification document satisfies the following:

- It specifies the external system behaviors.
- It specifies constraints on the implementation.
- It is easy to change.
- It serves as reference tool for system maintainers.
- It record forethought about the life cycle of the system.
- It characterizes acceptable response to undesired events.

Functional Requirements

The system must provide following functionalities:

- Keeping records of admission of customers.
- Keeping the record of products.
- Keeping the daily sell.
- Storing the feedback given by the customer.
- Keeping details about the product it is delivered or not.

Non-functional Requirements

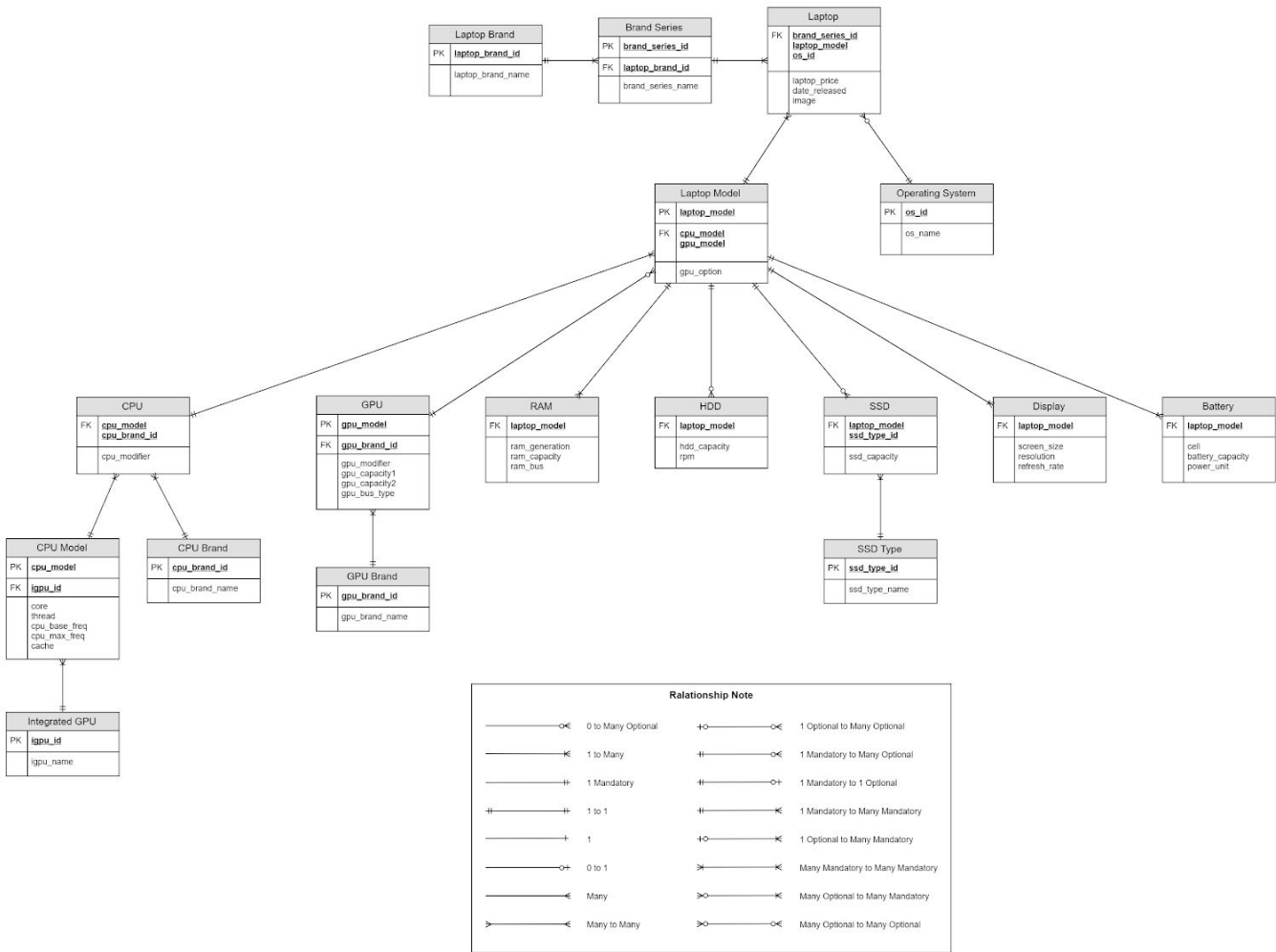
Insurance on internet:

- Secure access of confidential data
- 24/7 availability
- Better component design to get better performance.
- Various other non-functional requirements are:
 - Security
 - Reliability
 - Maintainability
 - Portability
 - Extensibility
 - Reusability

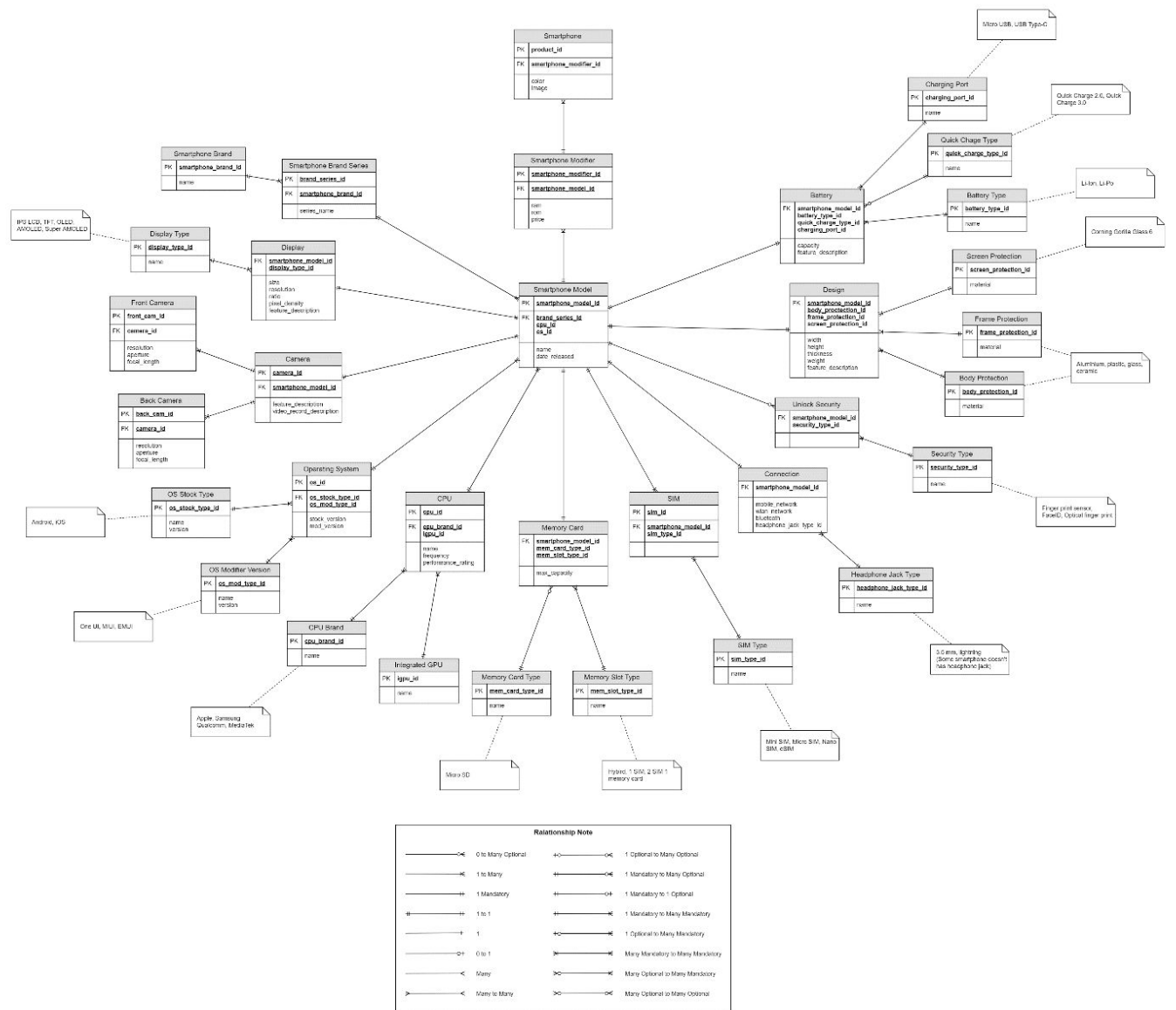
System Design Specification [3]

For the high resolution version and diagram documentation, please visit GitHub for more informations.

- Entity Relationship Diagrams

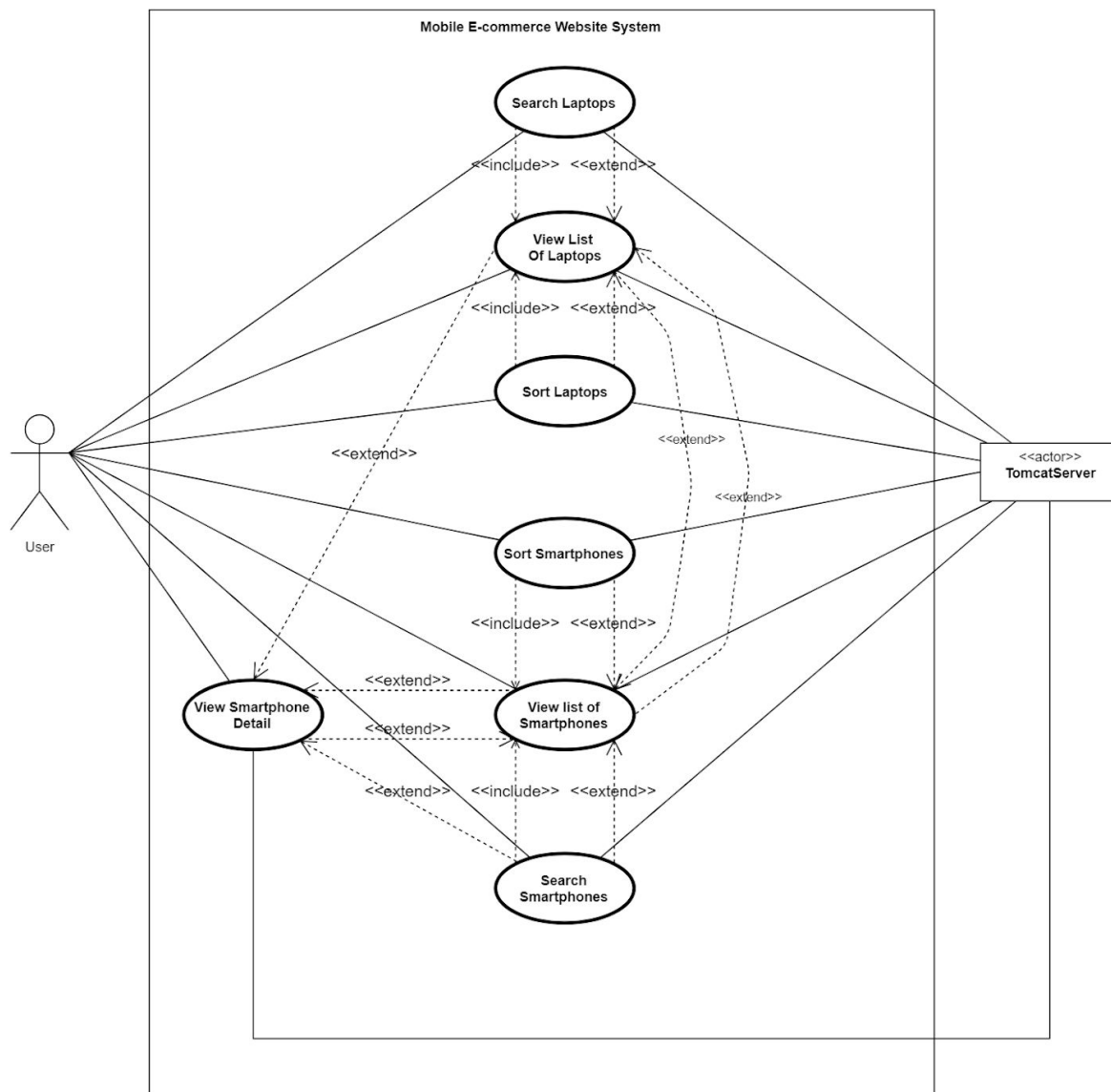


Laptop ERD



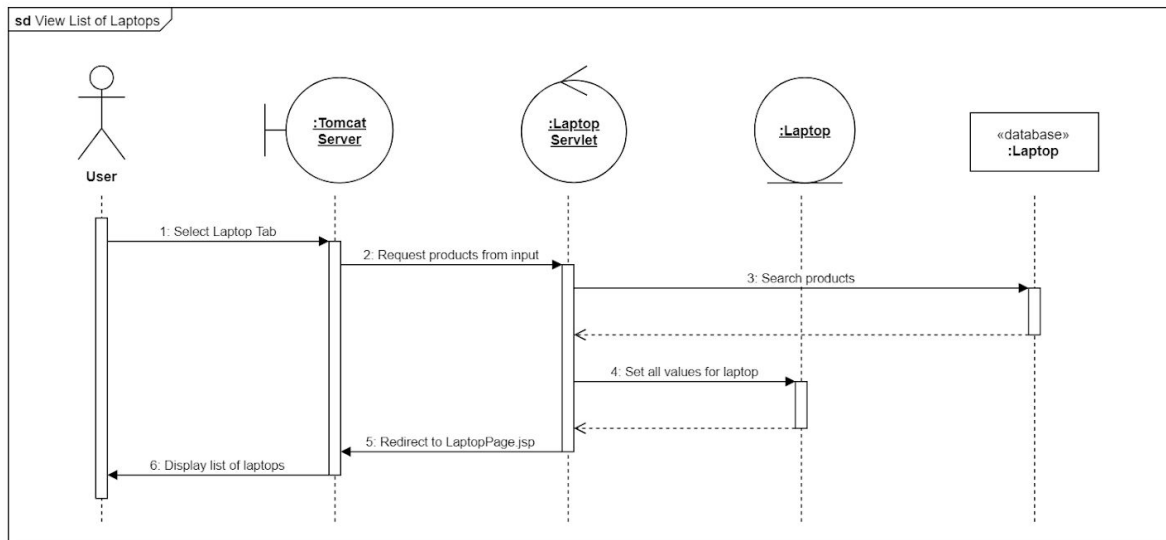
Smartphone ERD

- **Use Cases Diagram**

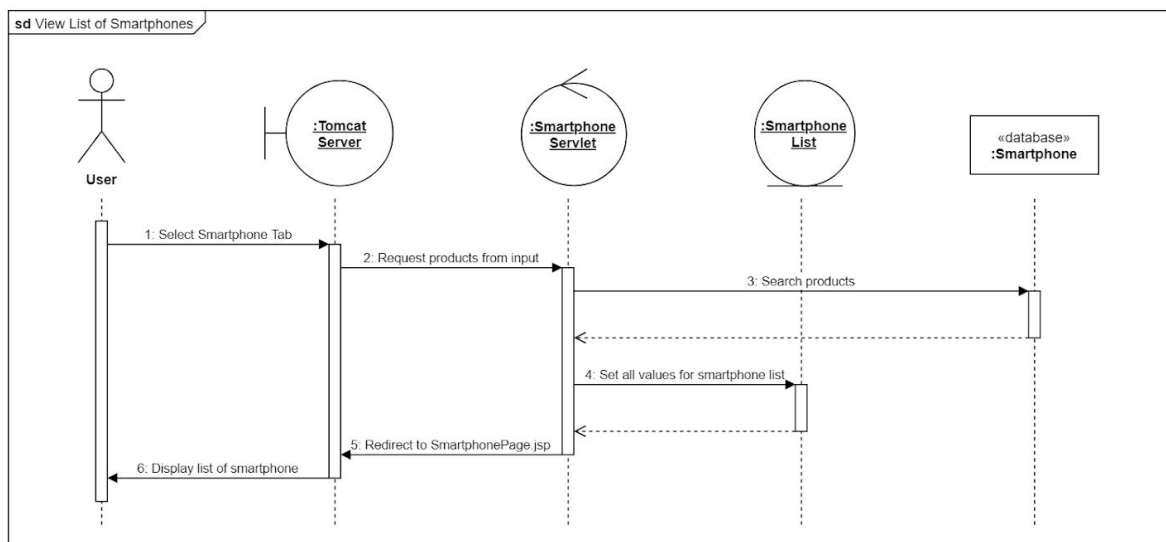


- **Sequence Diagram**

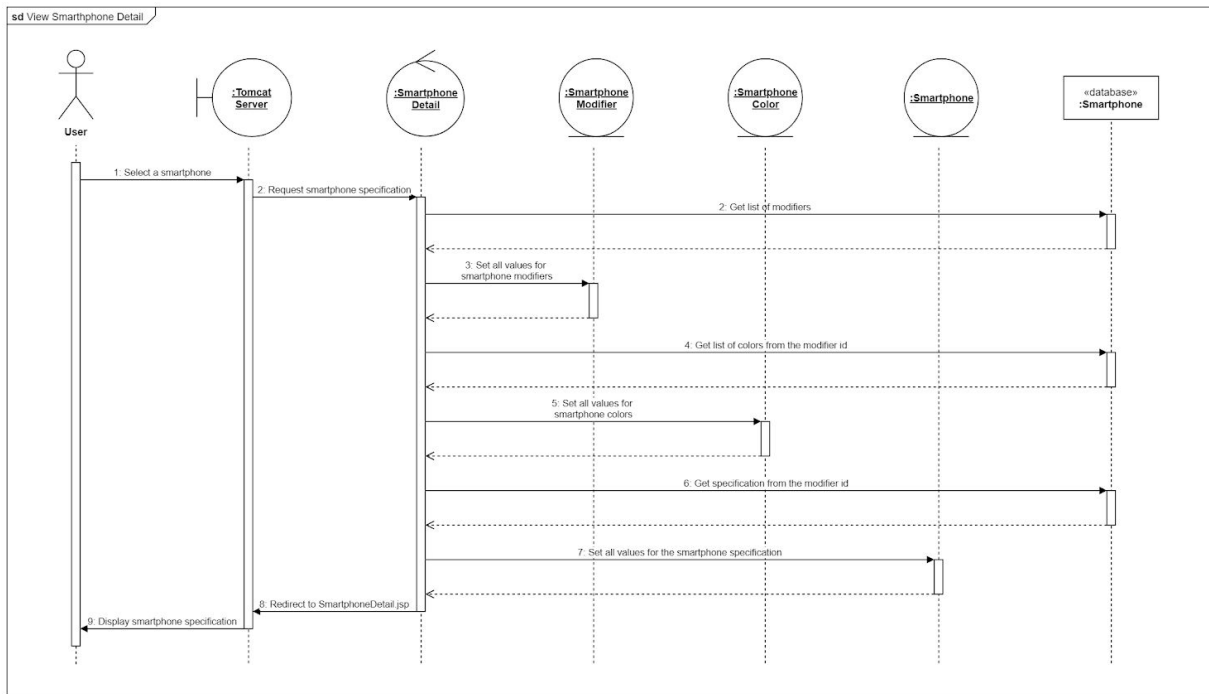
- View List of Laptops



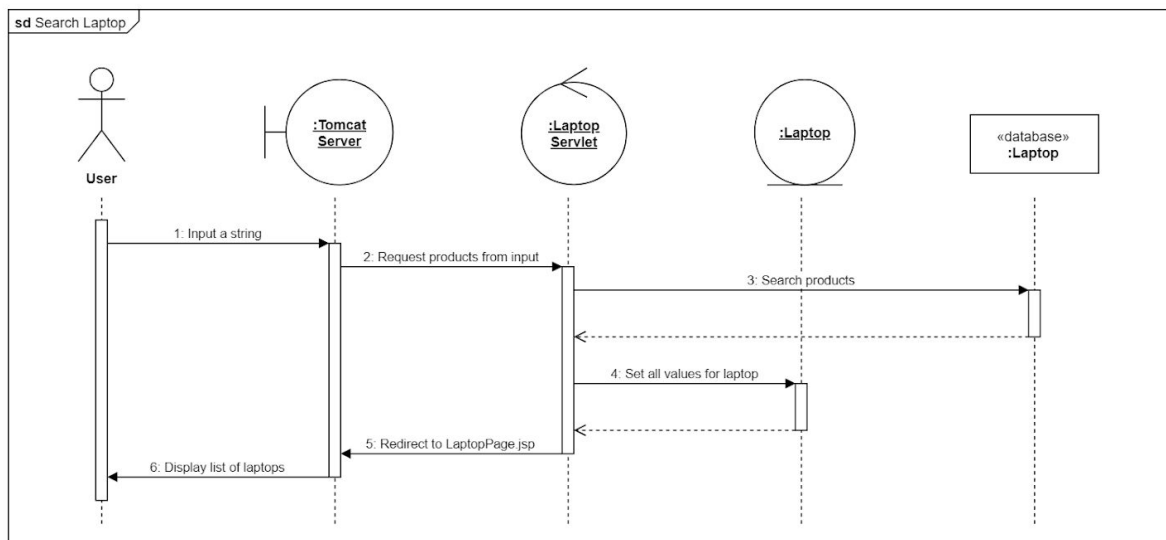
- View List of Smartphones



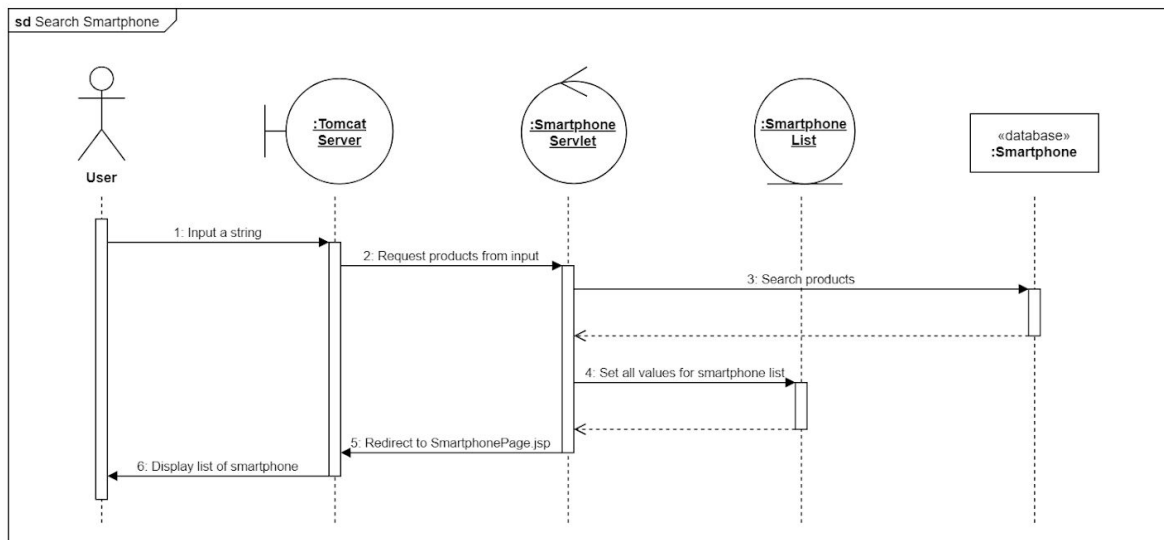
- View Smartphone Detail



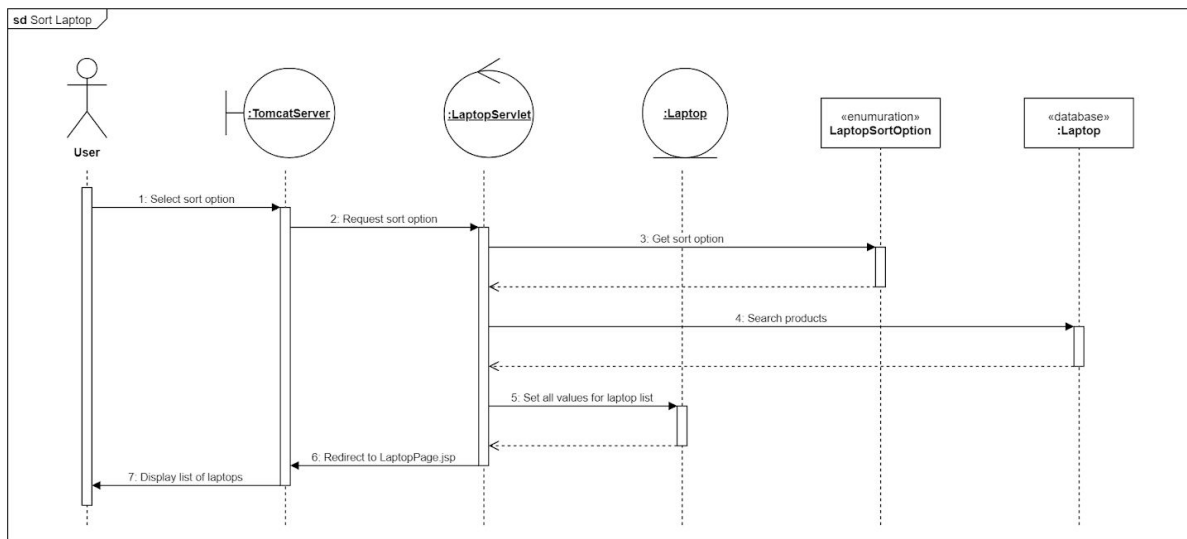
- Search Laptops



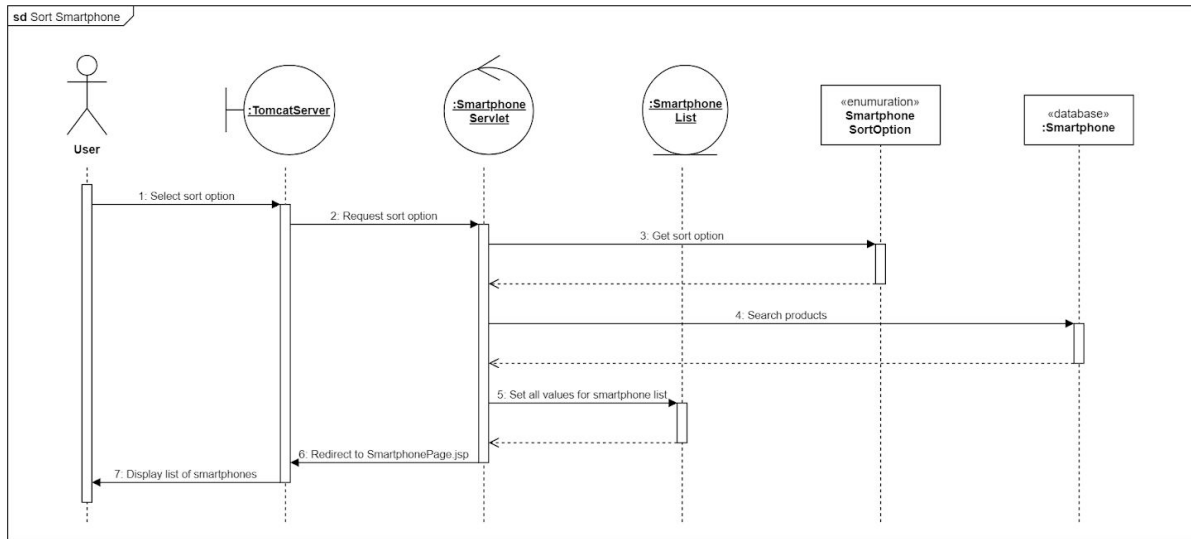
- Search Smartphones



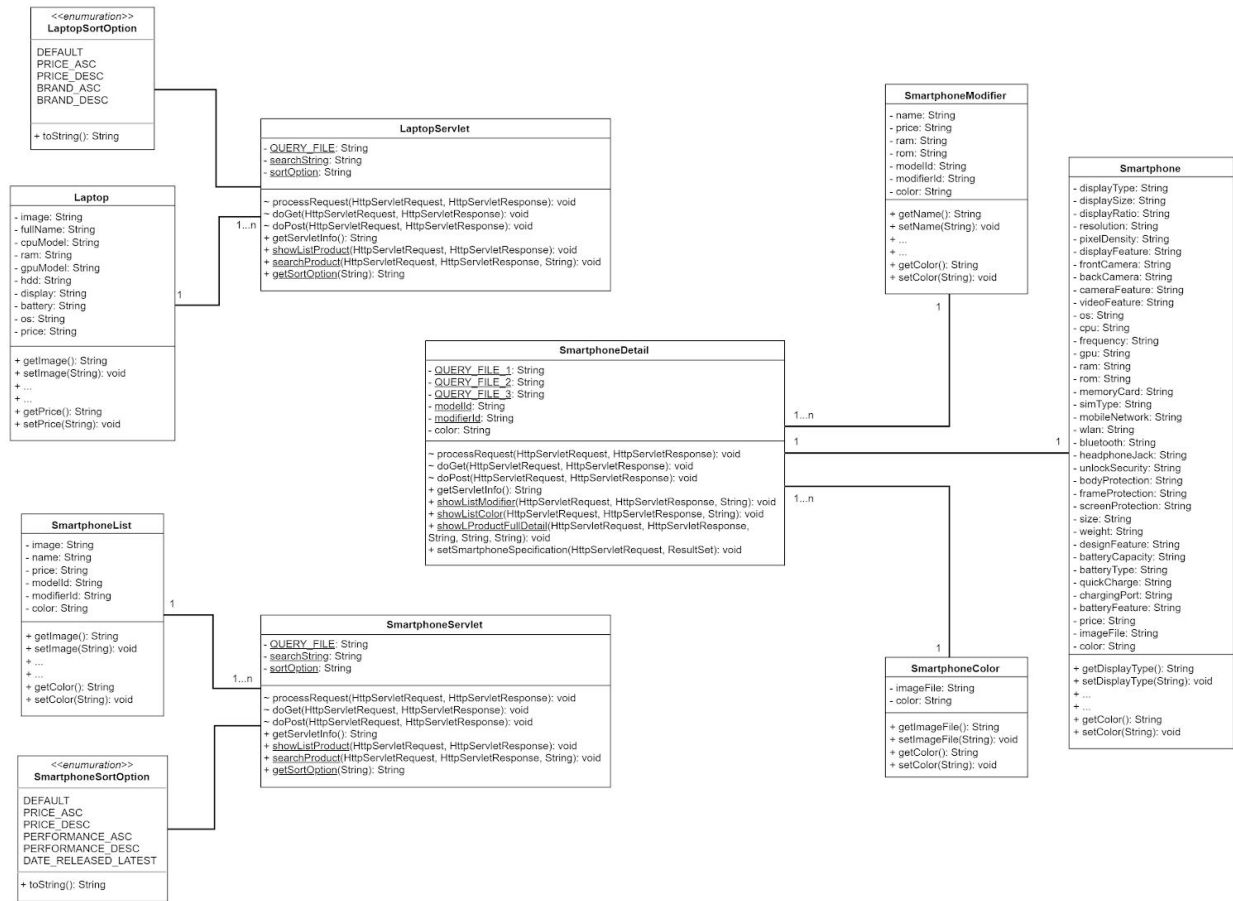
- Sort Laptops



- Sort smartphone



■ Class Diagram



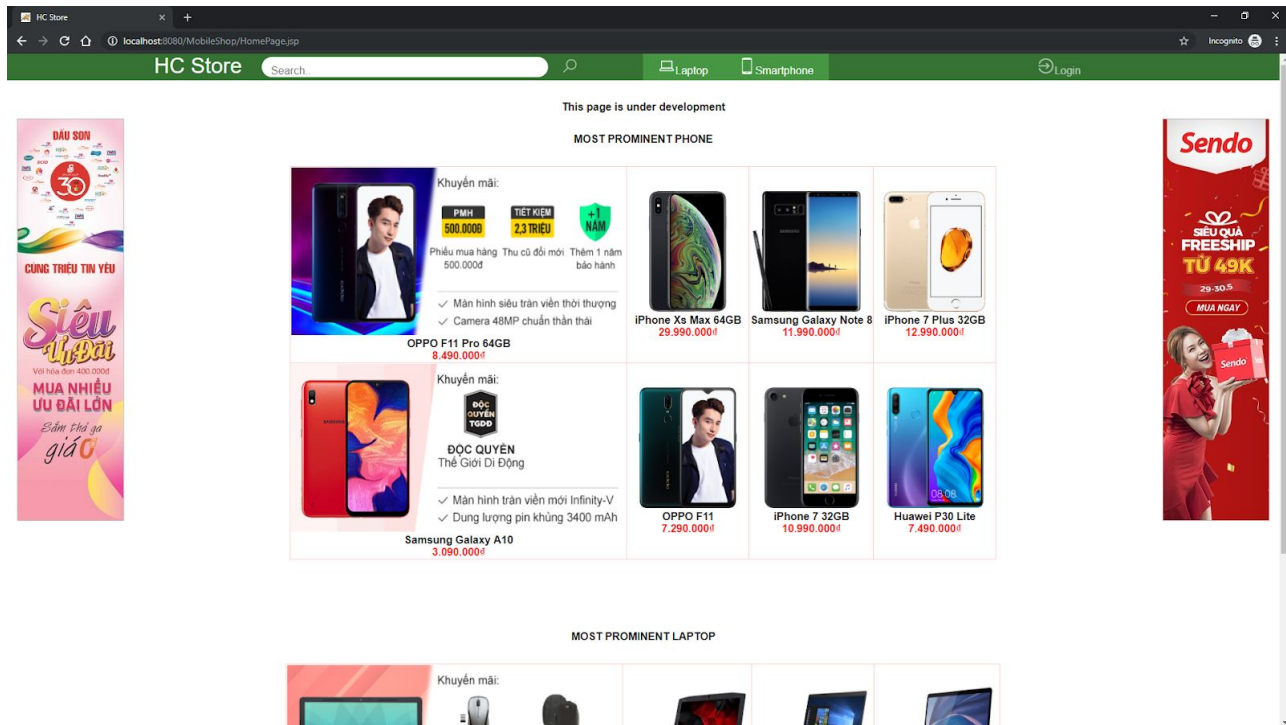
CHAPTER IV: SYSTEM IMPLEMENTATION

- **Installation**

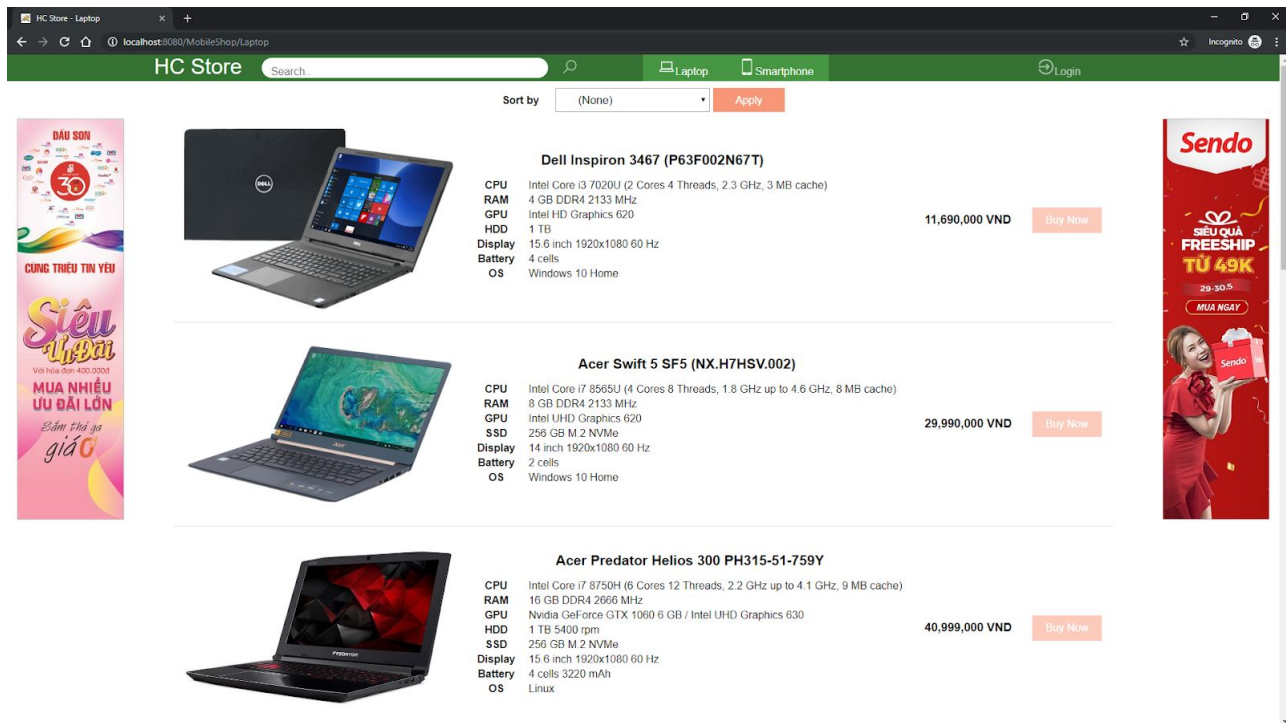
1. Visit this website below and clone the project
<https://github.com/HCMIU-CSE-WEB2019/Mobile-Shop>
2. Open Netbeans 8.2, click **File -> Open Project** and find the project location
3. Open the HomePage.jsp file from the path **MobileShop -> WebPages -> HomePage.jsp**
4. Right click and select "Run File (Shift + F6)"

- Demo image

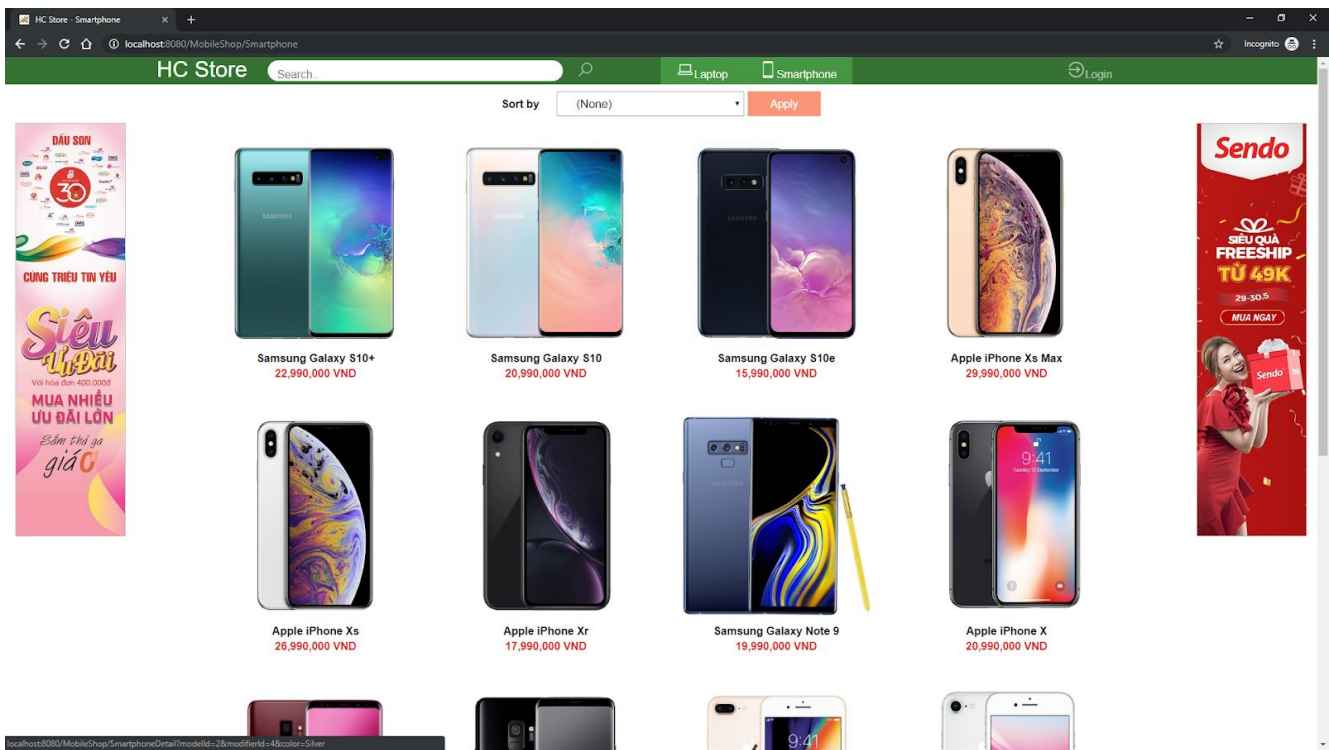
Homepage:



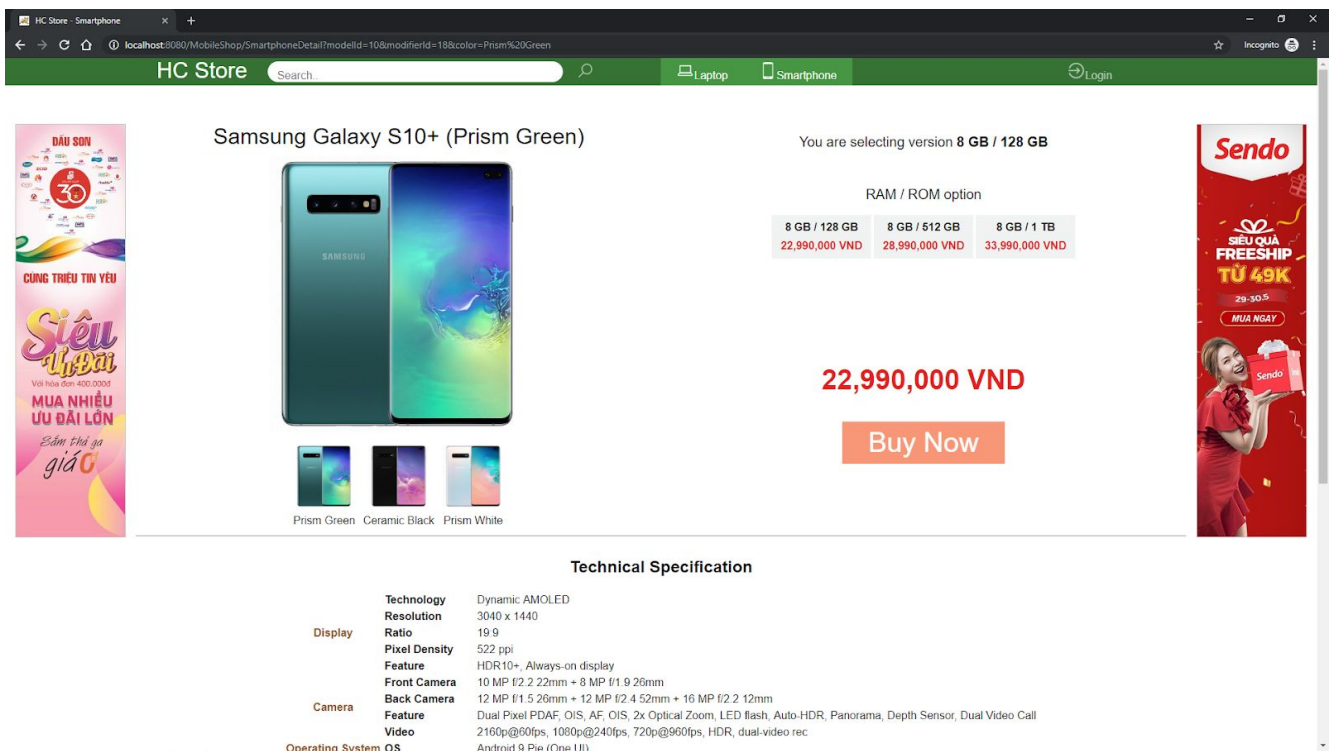
Laptop Page:



Smartphone Page:



Smartphone detail:



● CHAPTER V: CONCLUSION AND DISCUSSION

○ List of accomplished work

- Class diagram.
- Use case
- Database design and creation.
- Homepage.
- Page of smartphone list and laptop list..
- Page of smartphone detail.

○ Strength and Weakness

- Strength:
 - *Database*: A complex database will help the advance searching become easier
 - *User Interface*: Within a well structured layout, a good color combination (green and white) and some simple icons, the UI will bring a better look and feel for the user.
 - *User Experience*: Some color transition on the button such as Apply, Buy Now, Laptop, Smartphone will make a smooth feeling for the user.
- Weakness:
 - *Security*: The connection between MySQL and Java will make the hacker try to break into the database by applying SQL injection technique which will cause the catastrophic damage such as delete database by using search tool on the website.

```
//Search Laptop
content += "AND CONCAT(laptopbrand.laptop_brand_name, ' ', "
+ "          brandseries.brand_series_name, ' ', "
+ "          laptop.laptop_model"
+ ") LIKE '%" + searchString + "%'";
```

On the laptop site, searching **%' OR 1 LIKE %1** may give an unwanted result

```
//Search Laptop
content += "AND CONCAT(laptopbrand.laptop_brand_name, ' ', "
+ "          brandseries.brand_series_name, ' ', "
+ "          laptop.laptop_model"
+ ") LIKE '%" + searchString + "%' OR 1 LIKE '%1%'";
```

	Acer Swift Air 2018 (MRE825A/A) CPU: Intel Core i7-8550U (4 Cores, 8 Threads, 1.6 GHz up to 4 GHz, 6 MB cache) RAM: 8 GB LPDDR3 GPU: Intel UHD Graphics 620 SSD: 256 GB M.2 NVMe Display: 13.5 inch 1920x1080 60 Hz Battery: 4 cells 42 Wh OS: Linux	31,490,000 VND	Buy Now
	Acer Swift Air 2018 (MRE828A/A) CPU: Intel Core i7-8550U (4 Cores, 8 Threads, 1.6 GHz up to 4 GHz, 6 MB cache) RAM: 8 GB LPDDR3 GPU: Intel UHD Graphics 620 SSD: 256 GB M.2 NVMe Display: 13.5 inch 1920x1080 60 Hz Battery: 4 cells 42 Wh OS: macOS	31,490,000 VND	Buy Now
	Acer Swift Air 2018 (MRE825A/A) CPU: Intel Core i7-8550U (4 Cores, 8 Threads, 1.6 GHz up to 4 GHz, 6 MB cache) RAM: 8 GB LPDDR3 GPU: Intel UHD Graphics 620 SSD: 256 GB M.2 NVMe Display: 13.5 inch 1920x1080 60 Hz Battery: 4 cells 42 Wh OS: Ubuntu	31,490,000 VND	Buy Now
	Acer Swift Air 2018 (MRE828A/A) CPU: Intel Core i7-8550U (4 Cores, 8 Threads, 1.6 GHz up to 4 GHz, 6 MB cache) RAM: 8 GB LPDDR3 GPU: Intel UHD Graphics 620 SSD: 256 GB M.2 NVMe Display: 13.5 inch 1920x1080 60 Hz Battery: 4 cells 42 Wh OS: Windows 10 Home	31,490,000 VND	Buy Now

Future Work

- Customer account system with SHA-512 security.
- Login by Facebook or Google account.
- Online payment and delivery.
- Email automation system.
- Bootstrap for CSS.
- Entity class rearrangement for the model part of MVC.

● References

- [1] Thegioididong <https://www.thegioididong.com/>
 FPT Shop <https://fptshop.com.vn/>

- [2] Netbeans 8.2 <https://netbeans.org/downloads/8.2/>
 Apache Maven <https://maven.apache.org/>
 Draw.io <https://www.draw.io/>
 MySQL Workbench 8.0 CE <https://www.mysql.com/>
 MySQL Connector 8.0.15 <https://mvnrepository.com/artifact/mysql/mysql-connector-java/8.0.15>
 Spring Framework <https://spring.io/projects/spring-framework>
 CSS Grid Layout Generator <https://vue-grid-generator.netlify.com/>
 Bootstrap 4.3.1 <https://getbootstrap.com/>

- [3] GitHub <https://github.com/HCMIU-CSE-WEB2019/Mobile-Shop/tree/master/ReportContent>