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**ISTINYE UNIVERSITY**

**FACULTY OF ENGINEERING AND NATURAL SCIENCE**

**COMPUTER ENGINEERING DEPARTMENT**

**CAPSTONE PROJECT 1**

**PRELIMINARY REPORT**

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**PROJECT TITLE**

E-Commerce Web Site and Mobile Application

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**ABSTRACT**

E-commerce is a term which refers to creating artificial environment that build a bridge between seller and customer through web sites, mobile applications.

Our project is about creating well-structured web site and mobile application by caring high quality user experience, in order to provide e-commerce service to the end user. At the end of the project, our aim is to gain more experience about software development and create easily usable, comprehensive e-commerce web site and mobile application.

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INTRODUCTION

Because of the fact that human being have been suffering from COVID-19 pandemic, problem that is conventional shopping especially in crowded places being risky raised and therefore, their approach to the shopping have changed from the conventional shopping to the online shopping and these circumstances create a need for online shopping applications and a new term e-commerce.

Because of raised and continuing problem of being risky of conventional shopping because of pandemic and therefore changed shopping habits, we have decided to develop e-commerce web and mobile application.

We believe that constructing a not complicate to use e-commerce application starts from well-thought project basis. In the front-end side, we will construct project basis in a way that core components that builds UI of the applications hides the complication of the back-end of the project and serves easy usage. In the back-end side, we construct our application in a manner caring about responsiveness and speed in the whole of the project. After creating our basic, core mechanisms for our application, we will continue build new mechanisms without losing the main ideas of the project by using these core mechanisms in a cumulative manner.

We decided to choose this problem to solve because e-commerce is one of the best growing areas in the software development and hopefully, making use of e-commerce applications more basic to the general user will increase this growing rate more.

LITERATURE REVIEW

Anam Bhatti and et al claimed that: “In this article determined the ecommerce trends in coronavirus predicament as well as how imminent progress in e-commerce that might affect consumer behavior in future.”. [1]

As it can be seen above that the relationship between e-commerce and coronavirus has been stated in other studies also.

For instance, one of the e-commerce web site is of MediaMarkt that is company selling technological products. And UI of the MediaMarkt site sometimes can be very complicated. Also web site has not responsive design. [2] Our aim is to simplify such complicated situations and provide responsive design.

MATERIAL AND METHODS

In order to make collaboration more effective and provide version control, we have considered to use Git version control system and GitHub. [3] [4]

We have decided to use the PostgreSQL DBMS and JavaScript language and Node.js run time environment and Express.js framework in order to develop our back-end for web site and mobile application. [5] [6] [7] We will be using microservices architecture to constitute our back-end.

Moreover, we are going to use React, which is one of the JavaScript libraries that is used for generating UI, with Styled Components, which is one of the modern styling methods in the web environment for styling the components created with React. [8] [9] We will be also using React Router in order to achieve client-side routing. [10]

For State Management in React, we will be using Redux Toolkit and so we can handle complicated state changes more easily. [11]

We have selected React Native library to develop cross platform e-commerce mobile application. [12]

Lastly, we have decided to use Jest testing framework in order to testing our back-end and front-end of our applications. [13]

We have found important to mention that some new materials can be added to handle specific problems during the project development and some materials mentioned here can be excluded according to the project development process.

EXPECTED RESULTS UNTIL THE NEXT REPORT ON THE PROJECT

Hopefully, we expect to complete our knowledge basis about tools and methods that we are going to use. By using this knowledge basis, we will constitute our aimed solution. And after the delivering next report, we are going to start developing our e-commerce application.

GANTT CHART

Timeline

Description automatically generated

Figure 1: Gantt Chart of the project timeline.

As it can be seen at Figure 1, we have divided our project mainly three pieces (front-end, back-end and mobile application) and we allocate some months for research and learning and development for each piece.

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[Figure 1: Gantt Chart of the project timeline. 5](#_Toc122051219)