A

Project Report

On

INSTANT SEARCH

Submitted in partial fulfillment for the award of degree of

Bachelor of Technology

By

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Department Of Computer Science & Engineering
Jaipur Engineering College & Research Centre
Jaipur, Rajasthan
April-2019

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Submitted To:

Guide	Supervisor
Shailesh Arrawatia	**Ms. Manju Vyas**
Assistant Professor	**Assistant Professor**

Department Of Computer Science & Engineering
Jaipur Engineering College & Research Centre
Jaipur, Rajasthan
April-2019

CANDIDATE'S DECLARATION

We hereby declare that the work presented in this project entitled "**Instant Search"** for subject **Project-II** in the partial fulfillment of the requirements for the award of the Degree of Bachelor of Technology in Computer Science & Engineering at Jaipur Engineering College and Research Centre, Jaipur is an authentic work of our own.
We have not submitted the matter embodied in this project work anywhere for the award of any degree or diploma.

Signature of Student :	**Signature of Student :**	**Signature of Student:**
Shubham Jindal	**Shubham Ranjan**	**Shubham Dudeja**
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Date: 20 April, 2019

Place: JECRC, Sitapura, Jaipur

BONAFIDE CERTIFICATE

This is to certify that the project entitled **"Instant Search"** for subject **Project II** is the bonafide work carried out by students **Shubham Jindal, Shubham Ranjan and Shubham Dudeja** of B.Tech in Computer Science & Engineering at Jaipur Engineering College and Research Centre, during the session 2018-2019, in partial fulfillment of the requirements for the award of the Degree of Bachelor of Technology in Computer Science & Engineering and the project has not formed the basis for the award previously of any degree, diploma, fellowship or any other similar title.

Signature of the Guide:
Shailesh Arrawatia
Assistant Professor

Place: JECRC, Sitapura, Jaipur
Date: 20 April, 2019

Signature of the Supervisor:
Ms. Manju Vyas
Assistant Professor

Place: JECRC, Sitapura, Jaipur
Date : 20 April, 2019

ACKNOWLEDGEMENT

It gives me immense pleasure to present this project report. We would like to take the opportunity to thank the people, without whom this would not have been possible.

Firstly, we would like to express our deep gratitude to Mr.Abhishek Dixit, TPO, JECRC, Jaipur and Mrs.Manju Vyas, Assistant Professor, JECRC, Jaipur for providing us an opportunity to accomplish the project at the prestigious institute.

We express our heartiest gratitude to them for the guidance and suggestion at every point of the project, truly fulfilling a role of a mentor. We gratefully acknowledge the important contributions and guidance provided by our institution and our professors. Without great support of **Jaipur Engineering College and Research Centre** it would not be possible for us to create this project. **JECRC Foundation** has always been very responsive in providing necessary information, and without their generous support plan would lack in accurate information on current developments.

Last but not the least, we would like to express our deepest appreciation to our family members for their valuable co-operation.

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VISION OF CSE DEPARTMENT

To become renowned Centre of excellence in computer science and engineering and make competent engineers & professionals with high ethical values prepared for lifelong learning.

MISSION OF CSE DEPARTMENT

1. To impart outcome based education for emerging technologies in the field of computer science and engineering.
2. To provide opportunities for interaction between academia and industry.
3. To provide platform for lifelong learning by accepting the change in technologies
4. To develop aptitude of fulfilling social responsibilities.

VISION OF INSTITUTE

To become a renowned center of outcome based learning, and work towards academic, professional, cultural and social enrichment of the lives of individuals and communities.

MISSION OF INSTITUTE

1. Focus on evaluation of learning outcomes and motivate students to inculcate research aptitude by project based learning.
2. Identify, based on informed perception of Indian, regional and global needs, areas of focus and provide platform to gain knowledge and solutions.
3. Offer opportunities for interaction between academia and industry.
4. Develop human potential to its fullest extent so that intellectually capable and imaginatively gifted leaders can emerge in a range of professions.

PROGRAM OUTCOME

1. **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **Problem analysis:** Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6. **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **Individual and team work**: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **Communication**: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. **Project management and finance**: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12. **Life-long learning**: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PROGRAM SPECIFIC OUTCOME

PSO1: Ability to interpret and analyze network specific and cyber security issues in real world environment.

PSO2: Ability to design and develop mobile and web-based applications under realistic constraints

PROGRAM EDUCATIONAL OBJECTIVES

1. To provide students with the fundamentals of Engineering Sciences with more emphasis in Computer Science &Engineering by way of analyzing and exploiting engineering challenges.
2. To train students with good scientific and engineering knowledge so as to comprehend, analyze, design, and create novel products and solutions for the real life problems in Computer Science & Engineering.
3. To inculcate professional and ethical attitude, effective communication skills, teamwork skills, multidisciplinary approach, entrepreneurial thinking and an ability to relate engineering issues with social issues for Computer Science & Engineering.
4. To provide students with an academic environment aware of excellence, leadership, written ethical codes and guidelines, and the self motivated life-long learning needed for a successful professional career in Computer Science & Engineering..
5. To prepare students to excel in Industry and Higher education by Educating Students along with High moral values and Knowledge in Computer Science & Engineering.

COURSE OUTCOME

Graduates would be able to:

CO1: Specify, design and construct software and application for real life problem.

CO2: Apply the knowledge to identify the range of solution for the real life problem and critically evaluate and justify proposed solution with team work.

CO-PO Mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	L	H	H	L	M	H	M	-	M	H	L	L	-	M
CO2	L	M	H	H	M	M	H	-	M	L	M	L	-	M

ABSTRACT

Instant-Search result page is used on an e-commerce website. This project also includes a simplified version of the implementation that includes a few less filtering options and common Searching Algorithms. Instant search engine is a software system that is designed to search for information on the e-commerce website or any other sites. The search results are generally presented in a line of results often referred to as search engine results pages (SERPs).

Search engines are basically a web based tool that enables the users to find information on the Websites. SERPs is simply an acronym for Search Engine Result Pages. This page lists all the results found out for the particular query/keyword. Its simple; you enter your keyword (the word that you want to search for) and the Search Engines return with their list of websites that will provide you your desired results.

Instant Search Engines uses different mathematical algorithms for generating Search Results. Different Search Engines perceive different elements of a web page including page title, content, meta description and then come up with their results to rank on. Search Engine's algorithm are different. Instant Search is Fast and One time reloading page Search Bar of any website and give desired result as user want.

Instant search engines provide customized results based on the user's activity history. This leads to an effect that has been called a filter bubble. The term describes a phenomenon in which websites use algorithms to selectively guess what information a user would like to see, based on information about the user. As a result, websites tend to show only information that agrees with the user's past viewpoint. This puts the user in a state of intellectual isolation without contrary information.

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CHAPTER 1

INTRODUCTION

Instant Search is Fast and one time reloading page Search Bar of any website and give desired result as user want.

Instant search engines provide customized results based on the user's activity history. This leads to an effect that has been called a filter bubble. The term describes a phenomenon in which websites use algorithms to selectively guess what information a user would like to see, based on information about the user. As a result, websites tend to show only information that agrees with the user's past viewpoint. This puts the user in a state of intellectual isolation without contrary information.

Instant Search Engines use different mathematical algorithms for generating Search Results. Different Search Engines perceive different elements of a web page including page title, content, meta description and then come up with their results to rank on. Search Engine's algorithm are different. This project also includes a simplified version of the implementation that includes a few less filtering options and common Searching Algorithms.

The dashboard is an interface for accessing our data and index configuration. It's been designed for both developers and non-developers.

For developers, we recommend using our API clients for access to Instant Search full feature set as well as more dynamic control. However, to quickly test a static data set, it's possible to do an initial import using the dashboard.

Our dashboard is especially useful for project managers and other non-technical users to easily tweak index configuration settings after the data has initially been pushed.

This page lets you manage our API credentials. we can see our Application IDs and API Keys such as the Admin Key, Search-Only Key, and the Monitoring Key. All of these Keys are security-sensitive, as they give direct access to your data, settings, and analytics. To be safe, you might want to regenerate them from time to time, which you can do on this page, or using the API.

To easily bootstrap a working JavaScript app in seconds, we'll use the create-instantsearch-app command line tool.

See in src/app.js the credentials to instantsearch() and using three InstantSearch widgets:

● searchBox displays a nice looking Search Box for users to type queries in it

● hits displays the results from Instant Search, based on the query.

● pagination displays the pages to show more results.[5]

1.1 Purpose

Instant Search is a hosted full-text, numerical, and faceted search engine capable of delivering real-time results from the first keystroke. Instant Search powerful API lets you quickly and seamlessly implement search within your websites and mobile applications and delivering relevant results in under 100ms anywhere in the Website.

The entire system that manages your data and search requests was built to ensure speed at every point in the processing workflow. For example, search requests always have priority over indexing operations, to guarantee an optimal experience for your end users.

The primary goal of the engine is to find all items that match a query, then to order them from best to worst. We explain what relevance and ranking mean in many parts of our documentation, but the overriding principle is that Algolia uses a tie-breaking algorithm, using a variety of criteria, to weigh and compare matching items against each other. This ensures that the best matches appear at the top.

It provides a clean and user-friendly interface to the users.

A lot more widgets, discover them all in the widget showcase. To make search UI more efficient and practical for users, add some more widgets:

● a way to filter the store by brands

● a way to clear active filters

1.2 Project Scope

By this project, we will be able to make it easy for the users to search and look up things in short time span. This will increase the overall pros of the project and help in long run to look other products on the platform. It's a comprehensive view of the e-commerce search bar which will present a user-friendly look for the people searching.

The aim of this project is to build a Instant Search which is intended to fast search to any e-commerce website or where search bar needed. Any E-commerce Site they can use this

Search Bar for fast and reliable search for data set or include data set of own and this search bar give best result for any keyword.

1.3 Document Convention

First of all the software requirement specifications for this project was made an according to that the software requirement are decided and the list of all the features were decided and they were documented so that there will be a good document.

This document will freely interchange the pronoun “I” with “we” for team’s reference. As the development team is responsible for this document, no ambiguity arises from its usage. There is a clear distinction between every other phrase or word used in this project report.

The document is written in New Times Roman. The main headings and sub headings are bold while the textare in normal font. The document uses various diagram to illustrate various functionality of the function. It is further divided into heading and sub headings to provide an introduction to the application. The best part of this document is that it simplifies the complexity of understanding the application. It can be substituted as a user manual for the application and can be used by company officials to get the best out of this application. The document relates the various parts of the application and coagulation between them. The diagrams use in this documentation connects the various phases of the application and are in accordance with the currently used diagrams methodology.

CHAPTER 2

REQUIREMENT ANALYSIS

This step is used to analyze the tools required for the creation of the project. It checks the software and hardware requirement of the project under making. Both the requirements are checked with respect to the users interaction with the web platform.

2.1 Hardware Requirement

The project requires usual computer system like mobile phones, desktop and laptops. The website requires low specification so that it can run on any computer system.

Requires input device like keyboard for searching through the GitHub platform.

Minimum computer specification:-

- Processor : Intel Core i3 or higher.
- RAM : 2GB or more.

It's an online website so hardware requirement are negligible compared to the requirement made by the software.

2.2 Software Requirement

Various programming languages, editors and tools are used for the formation of this online project. The formation required the knowledge of front-end and back-end scripting languages. It uses deployment on web server.

Front-end Requirement:-

- HTML5
- CSS
- Vanilla Javascript

Back-end Requirement:-

- Jquery
- Ajax Request

- GitHub REST API

Deployment Requirement:-

- GitHUb Web Server

Software	Functionality	Use in Project	Why?
JavaScript	An object- oriented programming language with fast dynamic interpreters.[1]	An essential core software tool used in all browsers.[3]	Very easy to learn. It is a scripting, lightweight programming language, and it is a programmable code that can be embedded into HTML pages. This code can be performed by all web browsers. Old or modern.[2]
HTML5	Hyper Text markup Language	HTML embeds objects & images and it can be use to create interactive web pages.	HTML objects form the architecture of all websites. And it is the markup language used for creating web pages and any information that could be showed on a web browser.
CSS	Cascading Style Sheets	Colors, fonts, positioning and styling of data has been controlled and taken care by CSS.	The exact content of the website can be searched by spider of the engine when it scans thoroughly. Externally, CSS code is getting stored and it streamlines the XHTML code for faster and smooth loading and working.
Net Beans	IDE	Used for powerful, multi language development environment	Freeware Great GUI builder, Great Ant integration, Great and CONSISTENT IDE with Great speed, Great Debugger, Great

			Profiler.

Table 2.1: Software Fundamentals

2.3 Functional Requirement

- It should provide the details of the product dynamically without any of clashes among the other products.
- It should generate a list of products to the user and create hyperlink to these various products along the database.
- Secure the search through the database and API calls.[4]
- The web page reference should be functional.
- The webpage should send the user to the new tab instead of opening in the existing tab of the browser.
- Relevant results from the first keystroke.
- It should have rich set of filters like multi-level categories, range slider and star rating.
- The web page should be responsive with respect to different devices opening it.

2.4 Non Functional Requirements

- **Performance Requirement**

  The online Instant search should take the minimum amount of time to open the page clicked by the user. It should be fast and reliable. The dynamic search pattern should be fast and accurate with respect to existing product. The important requirement is that the application should perform smoothly without any error. There should be no sudden breakdown of the application when the wrong input is fed. There should be no bugs once the application is deployed. Since the application is online the performance will not be affected by the increase in the number of users as the cloud has capacity to handle huge numbers of users at a particular time. Thus performance of the application can be degraded when the error is made while feeding the data or creating the validation rules.

- **Scalability Requirement**

  The number of users that can simultaneously connect, number of processes that can run in parallel etc should be flexible.

- **Security Requirement**

  The login credential of the users and system admin will be handled by the platform that uses the two step verification process for dataset. If the anyone login from other system, he/she will be prompted will he security code that will be provided by the data set on the Admin personal or registered email id. This security feature will provide a secure environment to the application and any hacking will be nullified. The platform further can't change any data in the database on its own as each dataset

- **Availability Requirement**

  There should be presence of web browser with latest update to keep in track with latest programming syntax used in the directory. The JavaScript should be enabled within the browser. The application is available to every intended user who is having a proper connection and platform.

- **Training Requirement**

  Training requirements for the person working on this project development are knowledge of HTML, CSS, JavaScript.

  The developer should know how to handle the REST API calls.

- **Reliability Requirement**

  The system should provide a reliable environment to the user such that web page doesn't crash when searching dynamically.

2.5 User Classes and Characteristics

The anticipated users for the applications are:

The company: This application is intently designed for the requirements of a particular company. The company manages the backend database structure and its functionality. Every company requires as software to manage its services, our application simplifies the company's need of the software being readily available anywhere anytime to share your story.

The Developer: The developer will use the application to remove the bugs and to add new updates as company demands. The team will see the efficiency and the performance of the application when the application will be operated in the real time environment after the application is deployed by the company.

The Individual User: This application is intently designed for the requirements of a particular individual. The individual connects to other developers and check out their project and its functionality.

CHAPTER 3

SYSTEM DESIGN

System design is the process of defining the elements of a system such as the architecture, modules and components, the different interfaces of those components and the data that goes through that system. It is meant to satisfy specific needs and requirements of a business or organization through the engineering of a coherent and well-running system.

Systems design implies a systematic approach to the design of a system. It may take a bottom-up or top-down approach, but either way the process is systematic wherein it takes into account all related variables of the system that needs to be created—from the architecture, to the required hardware and software, right down to the data and how it travels and transforms throughout its travel through the system. Systems design then overlaps with systems analysis, systems engineering and systems architecture.

3.1 Use Case Diagram

To model a system, the most important aspect is to capture the dynamic behavior. Dynamic behavior means the behavior of the system when it is running/operating.

Only static behavior is not sufficient to model a system rather dynamic behavior is more important than static behavior. In UML, there are five diagrams available to model the dynamic nature and use case diagram is one of them. Now as we have to discuss that the use case diagram is dynamic in nature, there should be some internal or external factors for making the interaction.

These internal and external agents are known as actors. Use case diagrams consists of actors, use cases and their relationships. The diagram is used to model the system/subsystem of an application. A single use case diagram captures a particular functionality of a system.

Hence to model the entire system, a number of use case diagrams are used.

In brief, the purposes of use case diagrams can be said to be as follows −

- Used to gather the requirements of a system.
- Used to get an outside view of a system.
- Identify the external and internal factors influencing the system.
- Show the interaction among the requirements are actors.

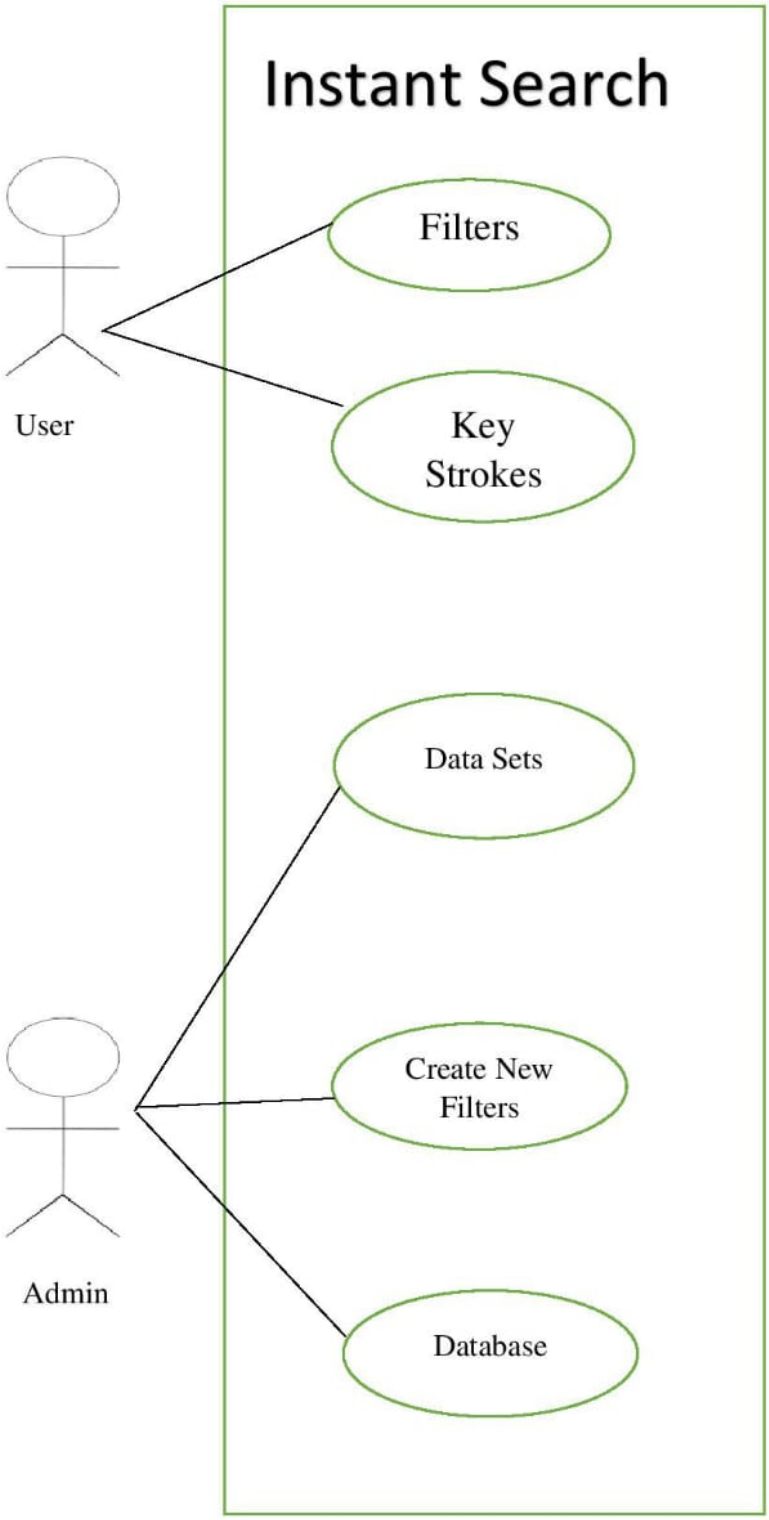


Figure 3.1: Use Case Diagram

3.2 Sequence Diagram/Activity Diagram

Activity diagrams are graphical representations of workflows of stepwise activities and actions with support for choice, iteration and concurrency. In the Unified Modeling Language, activity diagrams are intended to model both computational and organizational processes (i.e. workflows). Activity diagrams show the overall flow of control.

Arrows run from the start towards the end and represent the order in which activities happen.

Activity diagrams may be regarded as a form of flowchart. Typical flowchart techniques lack constructs for expressing concurrency. However, the join and split symbols in activity diagrams only resolve this for simple cases; the meaning of the model is not clear when they are arbitrarily combined with decisions or loops.

The purpose of an activity diagram can be described as −

- Draw the activity flow of a system.
- Describe the sequence from one activity to another.
- Describe the parallel, branched and concurrent flow of the system.

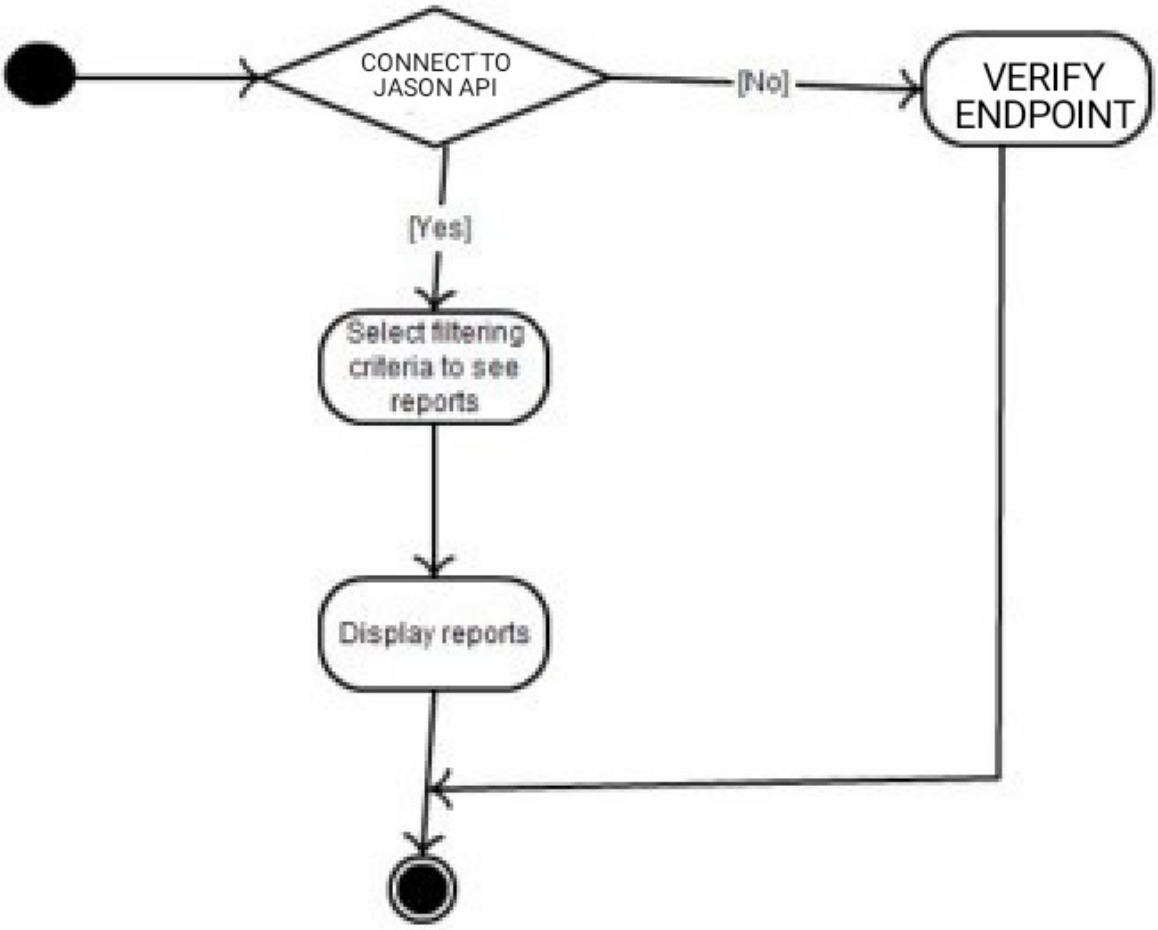
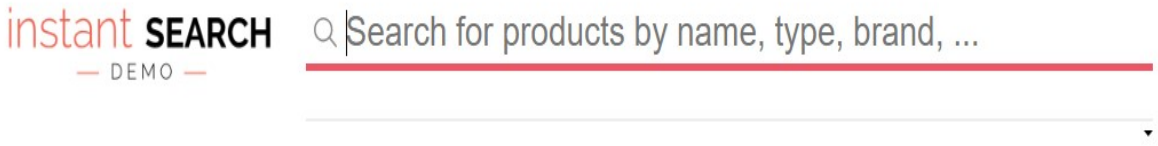


Figure 3.2: Activity Diagram

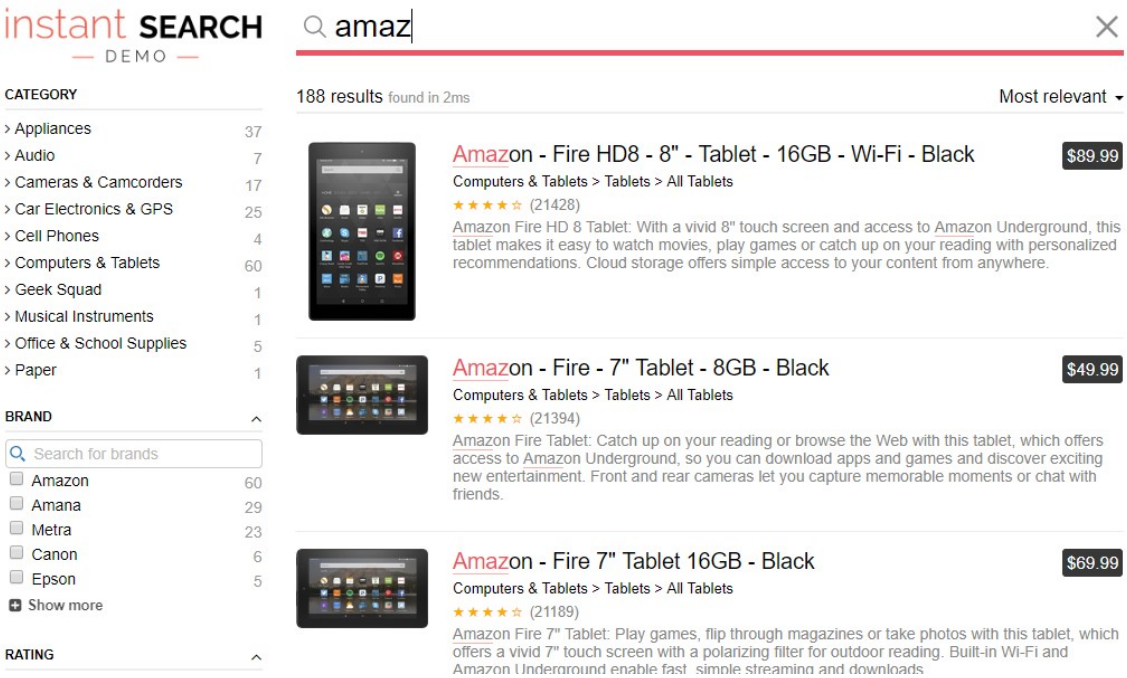
CHAPTER4

SCREENSHOTS

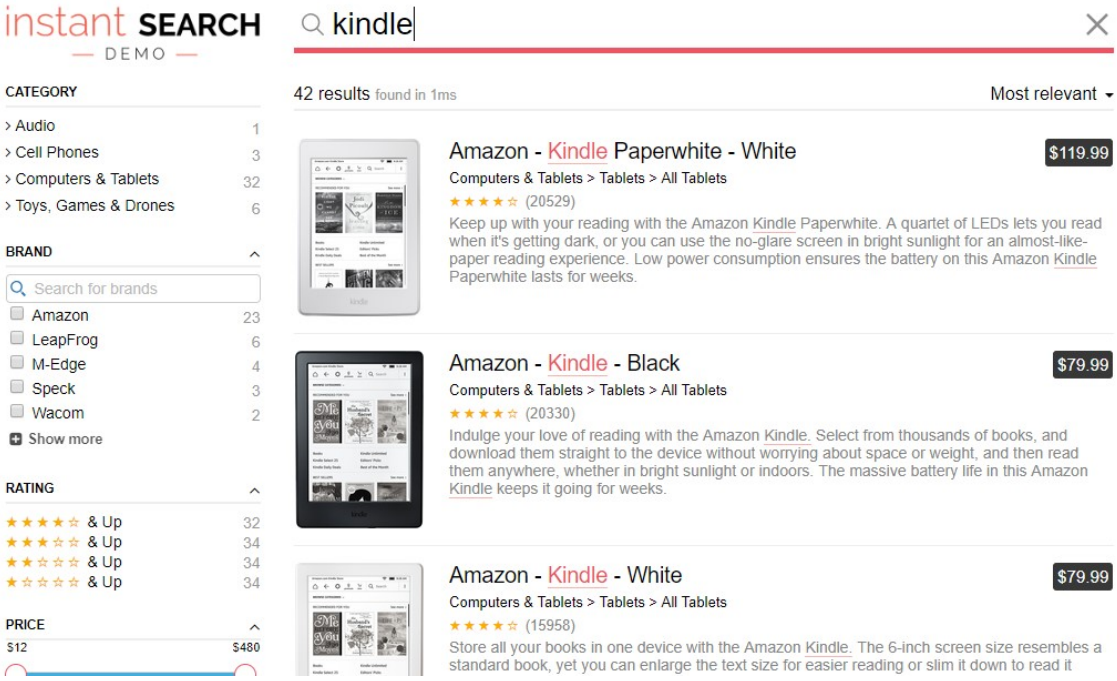
Various screenshots taken during the usage of the project is shown below. These screenshots are shown as they are depicted on the website.



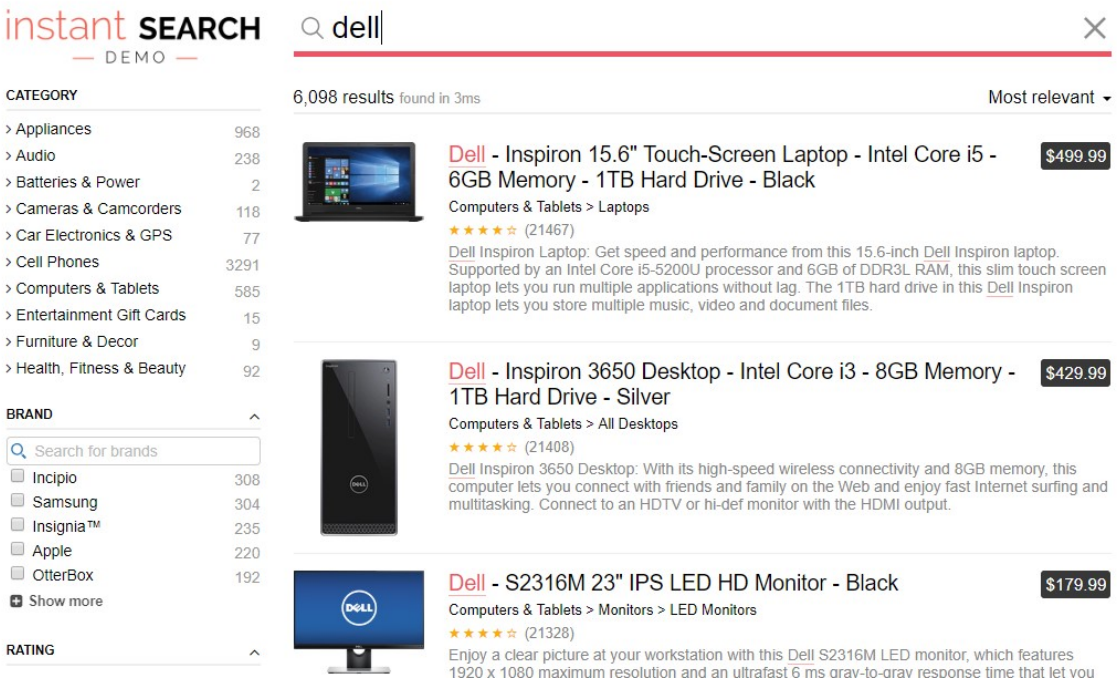
Homepage, BEFORE SEARCH



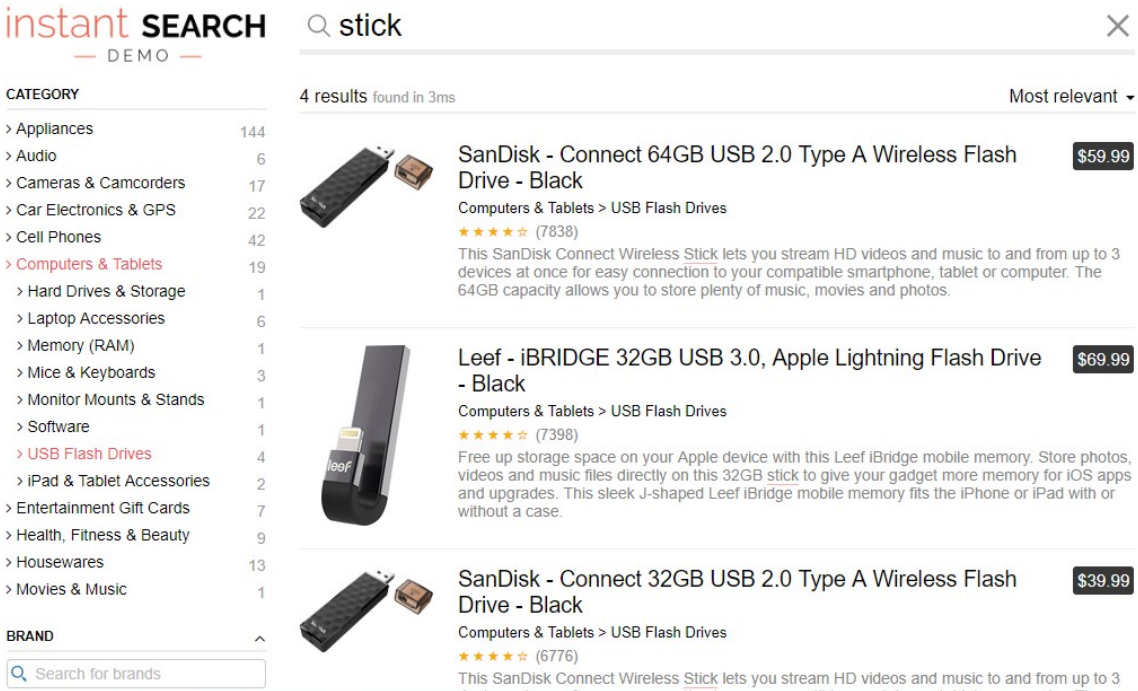
Search with keyword “amaz”



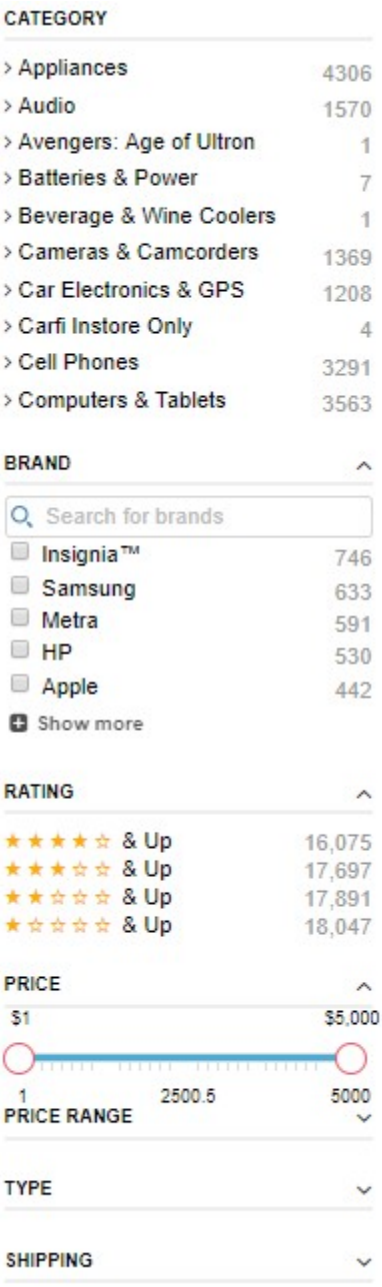
Search with keyword “kindle”



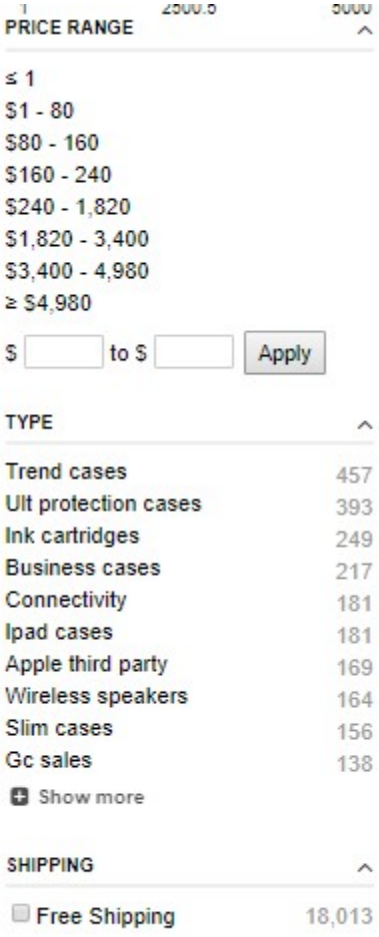
Search with keyword “kindle”



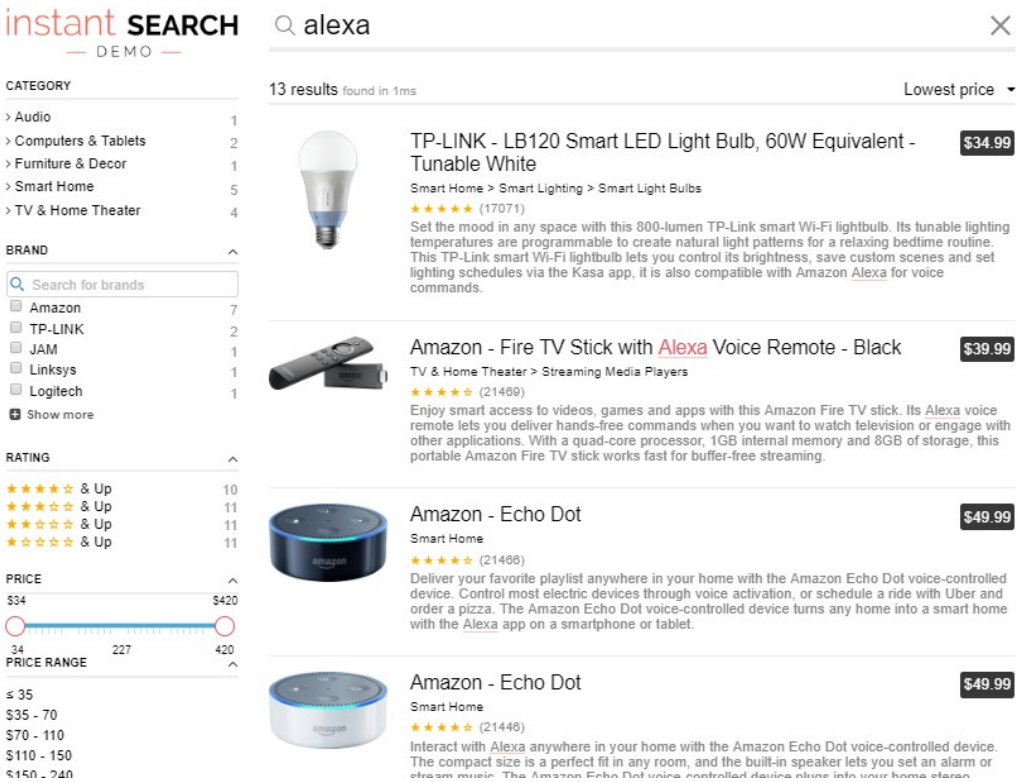
Using FILTERS



List of Filters



Expanding FILTER categorization



Using sort by “lowest price”

CHAPTER 5

TESTING

The reason behind testing was to find errors. Every program or software has errors in it, against the common view that there are no errors in it if the program or software is working. Executing the programs with the intention of finding the errors in it is therefore testing; hence a successful test is one which finds errors. Testing is an activity, however, it is restricted to being performed after the development phase is complete, but is carried parallel with all stages of system development, starting with requirement specification.

Test cases were devised with a purpose in mind. A test case is a set of the data that a system will process as normal input. The software units developed in the system are modules and routines that are assembled and integrated to perform the required function of the system. Test results once gathered and evaluated, provide a qualitative indication of the software quality and reliability and serve as the basis for design modification if required. In this phase, testing is done at different levels. Actually testing phase of the implementations works accurately and efficiently before live operation commences.

5.1 Unit Testing

The unit testing was done after the coding phase. The purpose of the unit testing was to locate errors in the current module, independent of the other modules. Some changes in the coding were done during the testing phase. Finally, all the modules were individually tested following bottom to top approach, starting with smallest and lowest modules and then testing one at a time.

5.2 Black Box Testing

This method of software testing tests the functionality of an application as opposed to its internal structures or working(i.e. white box testing). Specific knowledge of the application's code/internal structure and programming knowledge, in general, is not required. Test cases are built to specifications and requirements, i.e., what the application is supposed to do. It uses external descriptions of the software, including specifications, requirements, and design to

derive test cases. These tests can be functional or non-functional, though usually functional. The test designer selects valid and invalid inputs and determines the correct output. There is no knowledge of the test object's internal structure.

5.3 White Box Testing

This method of software testing tests internal structures or workings of an application, as opposed to its functionality (i.e. black-box testing). In white-box testing, an internal perspective of the system, as well as programming skills, are required and used to design test cases. The tester chooses inputs to exercise paths through the code and determine the appropriate outputs.

5.4 Integration Testing

Once the unit was over, all the modules were integrated for integration testing. External and internal interfaces are implemented and work as per design, the performance of the module is not degraded.

5.5 Validation Testing

At the culmination of integration testing, software is said to be completely assembled as a package; interfacing errors have been uncovered and corrected. Then as a final series of software test, validation tests were carried out.

5.6 Acceptance Testing

This is the final stage in the testing process before the system is accepted for operational use. Any requirement problem or requirement definition problem revealed from acceptance testing are considered and made error free.

Test Strategy

The Test Strategy presents the recommended approach to the testing of the software applications. The previous section on described what will be tested; this describes how it will be tested.

The main considerations for the test strategy are the techniques to be used and the criterion for knowing when the testing is completed. In addition to the considerations provided for each test below, testing should only be executed using known, controlled databases, in secured environments.

- **Testing Type:**
  - **Data and Database Integrity Testing**

    The databases and the database processes should be tested as separate systems. These systems should be tested without the applications (as the interface to the data). Additional research into the DBMS needs to be performed to identify the tools / techniques that may exist to support the testing.
  - **System Testing**

    Testing of the application should focus on any target requirements that can be traced directly to use cases (or business functions), and business rules. The goals of these tests are to verify proper data acceptance, processing, and retrieval, and the appropriate implementation of the business rules. This type of testing is based upon black box techniques, that is, verifying the application (and its internal processes) by interacting with the application via the GUI and analyzing the output (results).
  - **Performance Testing**

    Performance testing measures response times, transaction rates, and other time sensitive requirements. The goal of Performance testing is to verify and validate the performance requirements have been achieved. Performance testing is usually executed several times, each using a different "background load" on the system. The initial test should be performed with a "nominal" load, similar to the normal load experienced (or anticipated) on the target system. A second performance test is run using a peak load.
  - **Load Testing**

    Load testing measures subjects the system-under-test to varying workloads to evaluate the system's ability to continue to function properly under these different workloads. The goal of load testing is to determine and ensure that the system functions properly beyond the expected maximum workload. Additionally, load testing evaluates the performance characteristics (response times, transaction rates, and other time sensitive issues).

- **Volume Testing**

  Volume Testing subjects the software to large amounts of data to determine if limits are reached that cause the software to fail. Volume testing also identifies the continuous maximum load or volume the system can handle for a given period. For example, if the software is processing a set of database records to generate a report, a Volume Test would use a large test database and check that the software behaved normally and produced the correct report.

- **Recovery Testing**

  Failover / Recovery testing ensures that an application or entire system can successfully failover and recover from a variety of hardware, software, or network malfunctions with undue loss of data or data integrity.

  Failover testing ensures that, for those systems that must be kept running, when a failover condition occurs, the alternate or backup systems properly "take over" for the failed system without loss of data or transactions.

  Recovery testing is an antagonistic test process in which the application or system is exposed to extreme conditions (or simulated conditions) such as device I/O failures or invalid database pointers / keys. Recovery processes are invoked and the application / system is monitored and / or inspected to verify proper application / system / and data recovery has been achieved.

- **Configuration Testing**

  Configuration testing verifies operation of the software on different software and hardware configurations. In most production environments, the particular hardware specifications for the client workstations, network connections and database servers vary. Client workstations may have different software loaded (e.g. applications, drivers, etc.) and at any one time many different combinations may be active and using different resources.

CHAPTER 6

LIMITATIONS OF PROJECT

Every project has some limitations and these limitations become the stone to make changes throughout the project to bring in new features that are user-friendly and more adaptive to user interface.

There are mainly three limitations of the project and that are:

1. The product should exist within the database.
2. The search bar doesn't work like the Google search bar, which gives all possible result with reference to the search word entered.
3. It gives reference to product which exist only in database and not of the product that exist on the internet.

These limitations can be overcome as more features are explored and added to the project in time. Limitations pave the way to creating a better product and reach to masses.

CHAPTER 7

FUTURE SCOPE OF PROJECT

There is always a room for improvements in any software package, however good and efficient it may be done. But the most important thing should be flexible to accept further modification. Right now we are just dealing with searching products throughout the database using instant search algorithms.

In future this software may be extended to include features such as:

- Comparison Filter: This will enable the user to search particular products and compare their price and features with other product on the database.
- Internet Friendly: This will enable the user to search product that exist outside the scope of the database connected to it and fetch results from Google or other search engines for looking products that are not in the database.
- Dynamic Page length: This will enhance search bar and let users scroll down to increase the content products without changing pages.

CHAPTER 8

REFERENCES

References are useful to create customized project and accelerate the project completion process through the help.

Some of the references used in the development of this project are given below:

[1]“nodejs how-to”, https://www.joshmorony.com/category/nodejs-tutorials/

[2]“nodejs course work”, https://www.udemy.com/the-complete-nodejs-developer-course-2/

[3]“React Js official documentation”, https://reactjs.org/docs/react-api.html

[4]“Node Js official documentation”, https://nodejs.org/en/docs/

[5]“Express Js official documentation”, https://expressjs.com/en/api.html