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Introduction

Pasale.com is a one-stop online multi-vendor e-commerce site. This system enables the user to buy their needed products all from one place. The system helps in organizing all the brands, categories and its products. It also stores user information for shipping and delivery of the bought product.

In a virgin market like our country, online technology is rising. Ecommerce websites is growing every day. For such application to emerge in top, a multivendor platform is necessary.

Justification of the Project

Pasale.com is a web application which helps user to buy a product from the comfort of their place rather than going to a shop. This project helps in computerizing this process. All the information is kept and managed so user can benefit from the service.

Background of the Project

In the absence of technology few years back, people had to go to a shop look for the product they need and then buy it and there was no definitive solution for problem like products which were not in stock. This project helps in solving all these problems.

Problem Statement

E-Commerce is taking over the traditional commerce practices. Online shopping is a new technology breakthrough since it has begun to assault retailing sector with online shopping service. International payment system is not included in the project as it is not viable in the context of our country. Services such as international shipment is also not possible. All these problems can be solved by upgrading this application to a large platform considering international shipments, payment methods.

Description of the Project

This web application will be developed in PHP. Front end will be designed in HTML, CSS, JavaScript and some libraries. Database will be created in MySQL.

Features

- User can buy products and give their ratings and reviews
- User can create a wish list consisting of products of their wish
- Products can be searched from a search bar
- Related items will be shown to the users
- User can apply discount coupon codes to get certain percentage discount

Overview of the Project

Pasale.com is an online ecommerce platform that sells different categories of products from different vendors. The application provides the space for users to buy the things and manage all their orders, items, etc.

Scope

An online multi-vendor ecommerce platform is an extremely broad domain incorporating many functions developed over several years with extensive analysis. However, this project is a small one and consists only a small subset of the large domain.

Limitations

- To have access to the site users need internet connection
- Since it is a small application, delivery/shipment process is not included
- International payment (PayPal, Master Card) is not available
- International shipment is not available due to certain restrictions

Aims

This project creates a hub where almost all the market products will be available at the best price possible. As different vendors list the products in this hub, customers/users will have the option to compare the products which will save the time and money too.

Objectives

- Different vendors can sell their products in same platform
- Users can create a wish list where they can add products, they wish to buy
- User friendly interface
- Data privacy is maintained
- Support and expand B2B relationship
- Improve customer experience and satisfaction

Overview of the Scope

In summary, this application helps users to buy any products online with the comfort of their choosing. Moreover, user can giver ratings and reviews to the products which helps in promoting those products.

Development Methodology

For the project, Agile development methodology is being used. In this methodology the development life cycle is dominated by iterative process. Due to the time-bounded nature, thus process is perfectly suitable for this project.

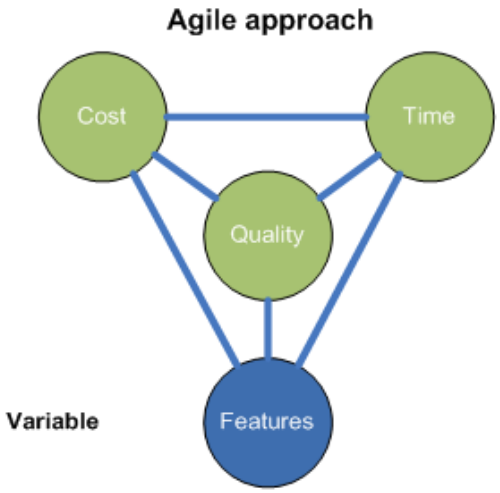

Figure 1: Agile methodology

The process of agile methodology is:

- Requirements
- Development
- Testing
- Delivery

Advantages of Agile methodology

- User focused development
- Changes is embraced
- End-goal can be unknown
- Predictable cost, schedule and delivery
- Continuous improvement

Disadvantages of Agile methodology

- Planning can be less concrete
- Documentation can be neglected
- Developing team must be knowledgeable

For this project, I am using Agile development methodology. This method is used because requirements may change over time, new function can be added, etc

Design Pattern

The design pattern used in this project is Model View Controller (MVC) pattern.

- Model - It handles the business logic.
- View – It handles the representation of the elements in the UI.
- Controller - It allows user to interact with the model. It acts as interface between the model and the view. It provides the ability to manipulate the system.

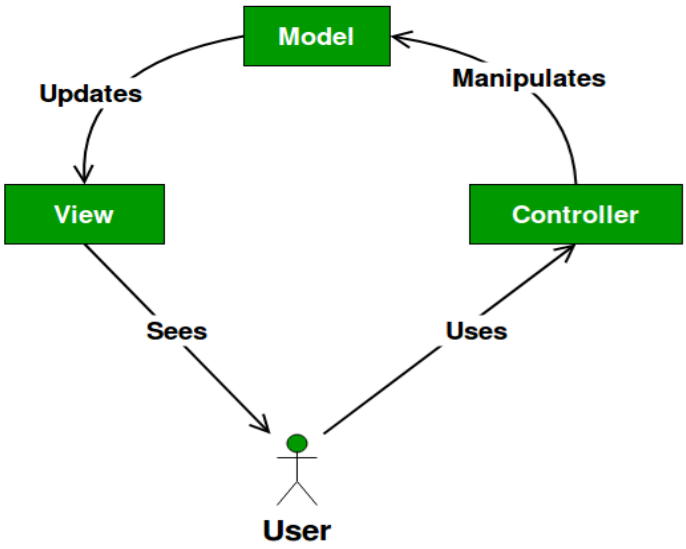

Figure 2:MVC Design Pattern

Advantages of MVC

- Helps to develop application in rapid way with less code duplication and also supports parallel development
- Supports asynchronous technique which helps developers to develop faster application
- Modification in one element doesn't affect the entire application.

Disadvantages of MVC

- Increases the complexity of development
- May need multiple programmers for different layer
- Lack of data efficiency in view layer
- Knowledge on multiple technology is required

For design pattern, MVC is used. This helps in reducing code by reusing it and modification in one-layer won't affect another layer.

Architecture

A three-tier architecture is a client-server architecture in which the functional process logic, data access, computer data storage and user interface are developed and maintained as independent modules on separate platforms. Three-tier architecture is a software design pattern and a well-established software architecture.

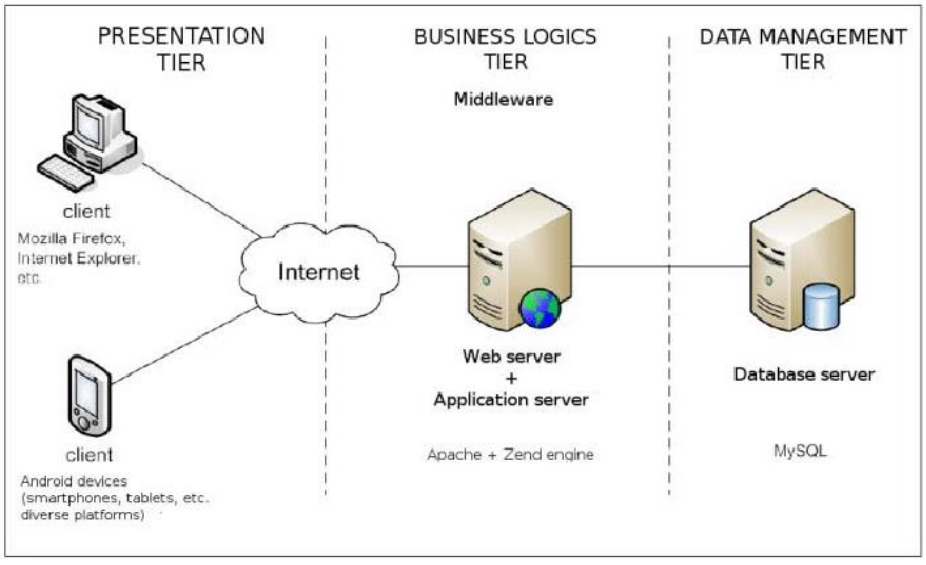

Figure 3: 3-tier Architecture

Presentation Tier: Occupies the top level and displays information related to services available on a website. This tier communicates with other tiers by sending results to the browser and other tiers in the network.

Application Tier: This tier is pulled from the presentation tier. It controls application functionality by performing detailed processing.

Data Tier: It contains database where information is stored and retrieved. Data in this tier is kept independent of application servers or business logic.

3-tier architecture is used to separate database, server and application layer.

Tools

IDE/Editor	Visual Studio Code
Programming Language	Frontend: HTML, CSS, JavaScript Backend: PHP
Framework	Not used
Programming Paradigm	Object-oriented Programming
Development Methodology	Agile Methodology
Design Pattern	MVC Design pattern
Architecture	3-tier Architecture
Database	MySQL
Server solution	XAMPP Control Panel
Modelling Tools	Visual Paradigm

Work Breakdown Structure

Dividing complex projects to simpler and manageable tasks is the process identified as Work Breakdown Structure. In WBS, much larger tasks are broken down to manageable chunks of work. These chunks can be easily supervised and estimated.

The breakdown of the project is shown below:

- Requirements
- Development
- Testing
- Delivery

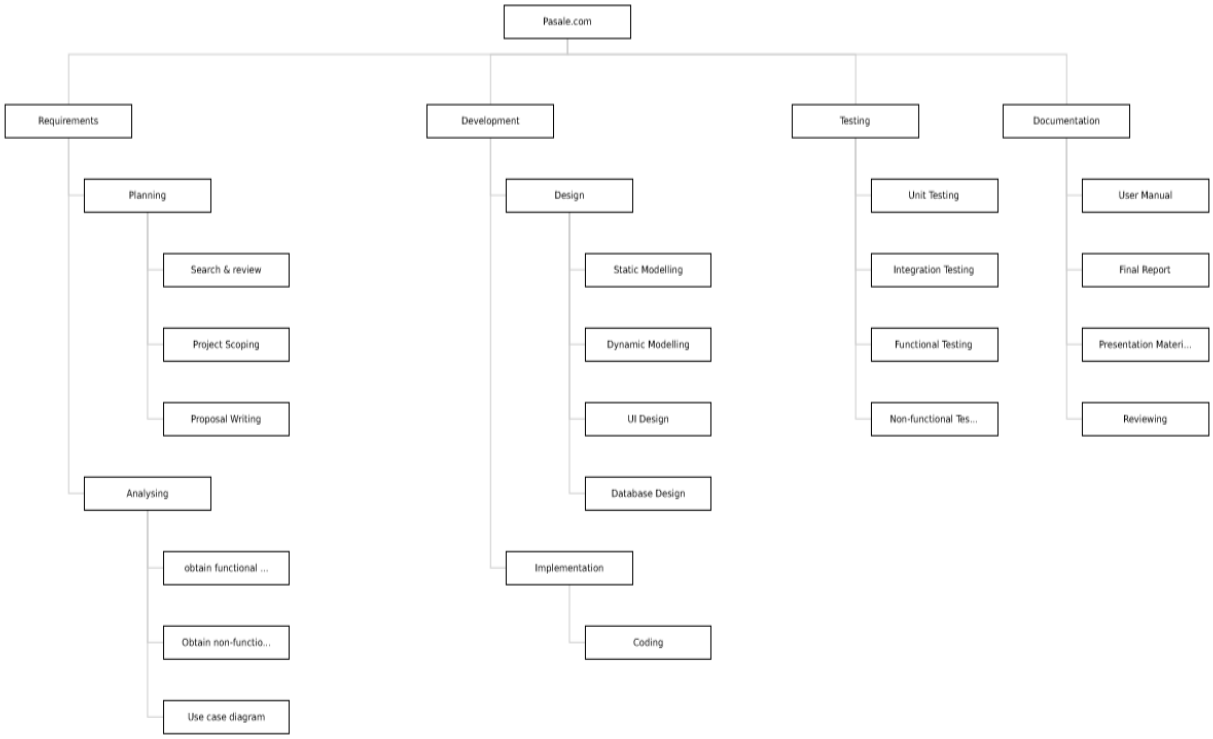

Figure 4: WBS

	Task name	Time estimated(days)
0	**Pasale.com**	110(Total)
1	**Requirement**	**40**
1.1	**Planning**	**15**
1.1.1	Search & review	5
1.1.2	Project Scoping	5
1.1.3	Proposal writing	5
1.2	**Analysis**	**25**
1.2.1	Obtain functional requirements	10
1.2.2	Obtain non-functional requirements	10
1.2.3	Use case diagram	5
2	**Development**	**50**
2.1	**Design**	**25**
2.1.1	Static modelling	4
2.1.2	Dynamic modelling	4
2.1.3	UI design	15
2.1.4	DB design	2
2.2	**Implementation**	**25**
2.2.1	Code	25
3	**Testing**	**10**
3.1	Unit test	3
3.2	Integration test	2
3.3	Functional test	3
3.4	Non-functional test	2
4	**Documentation**	**10**
4.1	User manual	2
4.2	Final report	4
4.3	Presentation material	2
4.4	Reviewing	2

Milestone

Task name	End date
Requirement	3rd May
Development	22nd June
Testing	2nd July
Documentation	12th July
Live demonstration	

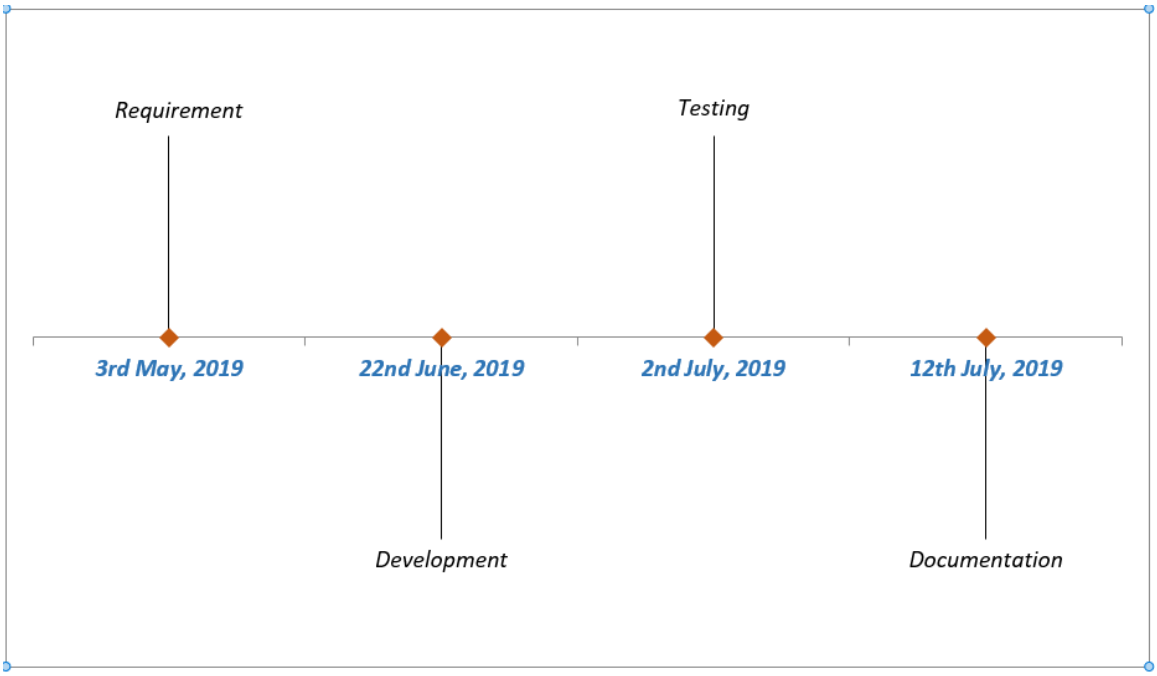

Figure 5: Milestone Timeline

There are four major milestones in this project. These generally maps the phases of development cycle. The major milestones are:

- **Requirement – 3rd May 2019**

  This milestone includes the planning and analysis of the project. Different project requirements like analysis, writing proposal, use case diagram is included in this heading. After submitting the proposal from planning stage, we can move to analysis stage to gather the system requirements.15 days is allocated for planning and 25 days has been allocated for analysis.

- **Development – 22nd June**

  After the analysis of the project the next thing to do is development of the system. In this stage, first the design phase is completed. This includes static and dynamic modelling, database design, UI design. After designing, we can implement the system into code. 50 days is allocated for this process. The sub headers i.e. Design and Implementation both has 25 days allocated to them to make the application sophisticated and user friendly.

- **Testing – 2nd July 2019**

  Testing marks as a crucial milestone for any project. All the functions are tested to ensure the usability of the system. A testing report is generated to ensure the system is validated. Different types of testing will be done which takes time. So, 10 days has been allocated for testing

- **Documentation – 12th July**

  Once all the prior milestones are completed, the documentation should be made. This includes a user manual, report, etc. 10 days is separated for making the documentation. This includes user manual, report

- **Live demonstration**

  This is the final milestone. After all the presentation materials are collected, the project should be demonstrated in front of a panel of experts and faculties for the completion of the project

		Name	Duration	Start	Finish	Predecessors
1		**Requirement**	**40 days**	**3/25/19 8:00 AM**	**5/3/19 5:00 PM**	
2		**Planning**	**15 days**	**3/25/19 8:00 AM**	**4/8/19 5:00 PM**	
3		Search &review	5 days	3/25/19 8:00 AM	3/29/19 5:00 PM	
4		ProjectScoping	5 days	3/30/19 8:00 AM	4/3/19 5:00 PM	3
5		Proposal writing	5 days	4/4/19 8:00 AM	4/8/19 5:00 PM	4
6		**Analysis**	**25 days**	**4/9/19 8:00 AM**	**5/3/19 5:00 PM**	**2**
7		Obtain functional require	10 days	4/9/19 8:00 AM	4/18/19 5:00 PM	2
8		Obtain non-functional rec	10 days	4/19/19 8:00 AM	4/28/19 5:00 PM	7
9		Use case diagram	5 days	4/29/19 8:00 AM	5/3/19 5:00 PM	8
10		**Development**	**50 days**	**5/4/19 8:00 AM**	**6/22/19 5:00 PM**	**6**
11		**Design**	**25 days**	**5/4/19 8:00 AM**	**5/28/19 5:00 PM**	**6**
12		Static modelling	4 days	5/4/19 8:00 AM	5/7/19 5:00 PM	
13		Dynamic modeling	4 days	5/8/19 8:00 AM	5/11/19 5:00 PM	12
14		UI design	15 days	5/12/19 8:00 AM	5/26/19 5:00 PM	13
15		DB design	2 days	5/27/19 8:00 AM	5/28/19 5:00 PM	14
16		**Implementation**	**25 days**	**5/29/19 8:00 AM**	**6/22/19 5:00 PM**	**15**
17		Code	25 days	5/29/19 8:00 AM	6/22/19 5:00 PM	15
18		**Testing**	**10 days**	**6/23/19 8:00 AM**	**7/2/19 5:00 PM**	**17**
19		Unit Testing	3 days	6/23/19 8:00 AM	6/25/19 5:00 PM	17
20		Integration Testing	2 days	6/26/19 8:00 AM	6/27/19 5:00 PM	19
21		Functional Testing	3 days	6/28/19 8:00 AM	6/30/19 5:00 PM	20
22		Non-functional testing	2 days	7/1/19 8:00 AM	7/2/19 5:00 PM	21
23		**Documentation**	**10 days**	**7/3/19 8:00 AM**	**7/12/19 5:00 PM**	**18**
24		User manual	2 days	7/3/19 8:00 AM	7/4/19 5:00 PM	18
25		Final report	4 days	7/5/19 8:00 AM	7/8/19 5:00 PM	24
26		Presentation material	2 days	7/9/19 8:00 AM	7/10/19 5:00 PM	25
27		Reviewing	2 days	7/11/19 8:00 AM	7/12/19 5:00 PM	26

Figure 6: Work schedule

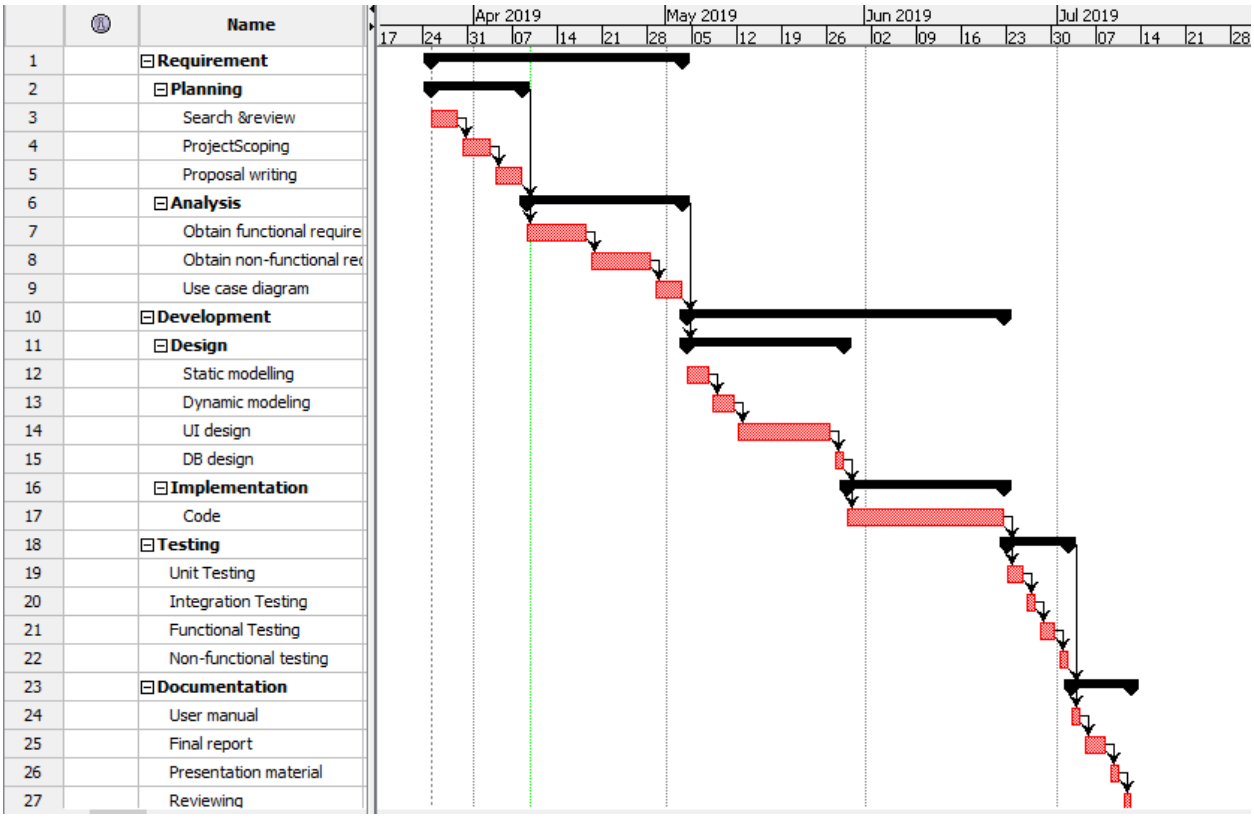

Figure 7: Gantt chart

Risk Management

Risk management is the process of identifying and aggregating the problems that leads to a potential risk in development. Risk management also means risk containment and mitigation.

The steps of risk management are:

- Identify the risks and their trigger
- Classify and prioritize all risks
- Implement the mitigation actions foray risk
- Monitor for potential risks and risk triggers during the project

Likelihood	**Value**
Low	**1**
Medium	**2**
High	**3**

Consequences	**Value**
Very Low	**1**
Low	**2**
Medium	**3**
High	**4**
Very High	**5**

Risk	Likelihood	Consequence	Impact	Action
Deterioration in performance	2	4	8	Upgrading hardware
Bugs	2	4	8	Release of patches and new updates
Problem in achieving functionality	2	5	10	Regular contact with clients and user
Hardware failure	2	4	8	System diagnostics and maintenance
Natural disasters	1	5	5	Regular backup data and

Configuration Management

Configuration Management is a standard process used to manage the changes introduced in the application product. This helps in identifying individual elements and configurations, tracking changes and reliable version selection and control system.

All the files are kept in an organized way making it cleaner and more accessible. All the project files are saved in local machine as well as GitHub repository using git version controller (https://github.com/reaperayush7).

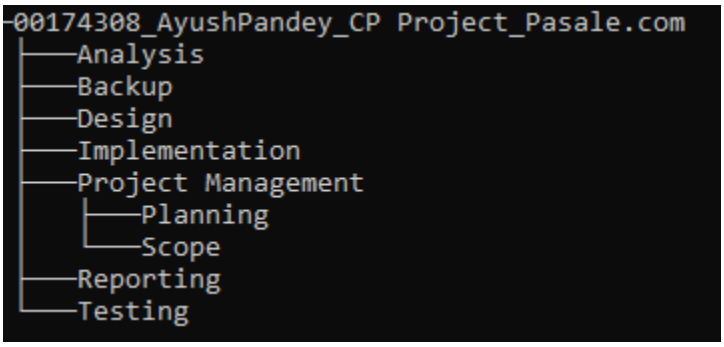

Figure 8: Directory Structure in local machine

Conclusion

This project is mainly focused on providing user with a platform where they can buy everything the need with ease. The system manages all the orders, stock of the product making it easier for users to get what they want.

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