LAB REPORT

Submitted by

Divyansh Mohan
[RA2011051010059]

Under the Guidance of

Ms.M.Sangeetha

ASSISTANT PROFESSOR

DEPARTMENT OF COMPUTING TECHNOLOGIES

In partial satisfaction of the requirements for the degree of

BACHELOR OF TECHNOLOGY
in
COMPUTER SCIENCE ENGINEERING

with specialization in (Gaming Technology)

SRM
INSTITUTE OF SCIENCE & TECHNOLOGY
Deemed to be **University** *u/s 3 of UGC Act, 1956*

SCHOOL OF COMPUTING

COLLEGE OF ENGINEERING AND TECHNOLOGY

SRM INSTITUTE OF SCIENCE AND TECHNOLOGY

KATTANKULATHUR - 603203

JUNE 2022

SRM INSTITUTION OF SCIENCE AND TECHNOLOGY
KATTANKULATHUR-603203

BONAFIDE CERTIFICATE

Certified that this lab report titled **"EZGAD"** is the bonafide work done by **Divyansh Mohan (RA2011051010059)** who carried out the lab exercises under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other work.

SIGNATURE

Ms. M.Sangeetha

SEPM – Course Faculty

Assistant Professor

Department of Computing Technology

ABSTRACT

Ezgad is a Ecommerce website intended for online retailers. The main objective of this website is to make it interactive and its ease of use. It would make searching, viewing and selection of a product easier. It contains a sophisticated search engine for user's to search for products specific to their needs. The search engine provides an easy and convenient way to search for products where a user can Search for a product interactively and the search engine would refine the products available based on the user’s input. The user can then view the complete specification of each product. They can also view the product reviews and also write their own reviews. The application also provides a drag and drop feature so that a user can add a product to the shopping cart by dragging the item in to the shopping cart. The main emphasis lies in providing a user friendly search engine for effectively showing the desired results and its drag and drop behavior.

TABLE OF CONTENTS

CHAPTER NO	TITLE	PAGE NO
	ABSTRACT	
	LIST OF FIGURES	
	LIST OF ABBREVIATIONS	
1	PROBLEM STATEMENT	
2	STAKEHOLDERS & PROCESS MODELS	
3	IDENTIFYING REQUIREMENTS	
4	PROJECT PLAN & EFFORT	
5	WORK BREAKDOWN STRUCTURE & RISK ANALYSIS	
6	SYSTEM ARCHITECTURE, USE CASE & CLASS DIAGRAM	
7	ENTITY RELATIONSHIP DIAGRAM	
8	DATA FLOW DIAGRAM	
9	SEQUENCE & COLLABORATION DIAGRAM	
10	DEVELOPMENT OF TESTING FRAMEWORK/USER INTERFACE	
11	TEST CASES & REPORTING	
12	ARCHITECTURE/DESIGN/FRAMEWORK/IMPLE -MENTATION	
	CONCLUSION	
	REFERENCES	
	APPENDIX (CODE)	

LIST **OF FIGURES**

Figure No.	Title	Page No.
01	Gantt Chart	
02	Work Break Down Structure	
03	Use Case Diagram	
04	Class Diagram	
05		
06	ER Diagram	
07	Data Flow Diagram	
08	Sequence Diagram	
09	Collaboration Diagram	
10	User Interface	

LIST OF ABBREVIATIONS

ERD	Entity Relationship Diagram
IT	Information Technology
IDE	Integrated Development Environment
APP	Application
URL	Uniform Resource Locator
Arch.	Architecture
DFD	Data Flow Diagram
UI	User Interface
API	Application Programming Interface
WBS	Work Break down Structure
DB	Database

Department of Networking and Communications

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	1
Title of Experiment	To identify the Software Project, Create Business Case, Arrive at a Problem Statement
Name of the candidate	DIVYANSH MOHAN
Team Members	SIDHARTH KOTHARI, HARISH KUMAR, DIVYANSH MOHAN
Register Number	**RA2011051010043, RA2011051010049, RA2011051010059**
Date of Experiment	

Mark Split Up

S.No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
	Total	**10**	

Staff Signature with date

Aim

To Frame a project team, analyze and identify a Software project. To create a business case and Arrive at a Problem Statement for the <title of the project>

Team Members:

S. No	Register No	Name	Role
1	**RA2011051010043**	SIDHARTH KOTHARI	**Lead/Rep**
2	**RA2011051010049**	HARISH KUMAR	**Member**
3	**RA2011051010059**	DIVYANSH MOHAN	**Member**

Project Title: EZGAD

Project Description:

An ecommerce mobile app should aim at providing an immersive and unique experience that makes online shopping a much simpler and seamless process. At the same time, it should include features that drive sales and boost revenues for your business.

Result

Thus, the project team formed, the project is described, the business case was prepared and the problem statement was arrived.

ONE PAGE BUSINESS CASE TEMPLATE

DATE	21/03/2022
SUBMITTED BY	Divyansh Mohan
TITLE / ROLE	EZGAD/Member

THE PROJECT

In bullet points, describe the problem this project aims to solve or the opportunity it aims to develop.

The use of electronic commerce by business in developed countries has grown considerably in the past few years. While the private sector appears to be benefiting from this low-cost means of reaching consumers worldwide, the question remains: can e-commerce be used effectively by other sectors to generate revenue? The explosion in the use of electronic commerce (e-commerce) by the business sector has been tremendous since its inception only a few years ago. From governments to multinational companies to one-person start-ups, e-commerce is increasingly viewed as a key business modality of the future. Ease of transaction, widening markets, and decreased overheads are factors that make e-commerce solutions more and more attractive, as evident with the growth of online sales.Our app basically helps students and many enterpreneur to buy the usefull gadgets according to there use very easily.

THE HISTORY

In bullet points, describe the current situation.

India's E-commerce revenue is expected to jump from US$ 39 billion in 2017 to US$ 120 billion in 2020, growing at an annual rate of 51 per cent, the highest in the world. Online retail sales in India are expected to grow by 31 per cent to US$ 32.70 billion in 2018, led by Flipkart, Amazon India and Paytm Mall.

LIMITATIONS

List what could prevent the success of the project, such as the need for expensive equipment, bad weather, lack of special training, etc.

1. Security
2. Lack of privacy.
3. Tax issue
4. Fear
5. Product suitability
6. Cultural obstacles
7. High Labour cost
8. Legal issues
9. Technical limitations
10. Huge technological cost

APPROACH

List what is needed to complete the project.

1. Figure out the goals for your ecommerce app.
2. For whom are you creating your ecommerce app?
3. Choose the right technology.
4. List of requirements for creating ecommerce app.
5. Pick right budget and process.
6. Market your app.

BENEFITS

In bullet points, list the benefits that this project will bring to the organization.

1. Increased brand recognition.
2. Improved marketing communication.
3. Enhanced customer experience.
4. Improved visitors engagement.
5. Higher conversion rate as compared to web.
6. Increase average order value.
7. Reduce cart abandonment rates.
8. Offer personalized shopping experience to customers.

Department of Networking and Communications

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	2
Title of Experiment	Identification of Process Methodology and Stakeholder Description
Name of the candidate	Divyansh Mohan
Team Members	03
Register Number	RA2011051010059
Date of Experiment	28-03-2022

Mark Split Up

S.No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
	Total	**10**	

Staff Signature with date

Aim

To identify the appropriate Process Model for the project and prepare Stakeholder and User Description.

Team Members:

Sl No	Name	Register No.	Role
1	Sidharth Kothari	RA2011051010043	Rep
2	Harish Kumar	RA2011051010049	Member
3	Divyansh Mohan	RA2011051010059	Member

Project Title:

Selection of Methodology

Agile Methodology:

The Agile methodology is a way to manage a project by breaking it up into several phases. It involves constant collaboration with stakeholders and continuous improvement at every stage.

Once the work begins, teams cycle through a process of planning, executing, and evaluating.

We chose agile model because it is a combination of iterative and incremental process models with focus on process adaptability and customer satisfaction by rapid delivery of working software product.

So what is Agile methodology in project management?

It's a process for managing a project that involves

constant collaboration and working in iterations. Today, the word Agile can refer to these values and the frameworks for implementing them, including Scrum, Kanban, Extreme Programming (XP), and Adaptive Project Framework (APF).

The Agile Manifesto of Software Development put forth a groundbreaking mindset on delivering value and collaborating with customers when it was created in 2001. Agile's four main values are:
Individuals and interactions over processes and tools
Working software over comprehensive documentation
Customer collaboration over contract negotiation
Responding to change over following a plan

Incorporate information to below table regarding stakeholders of the project [Make use of below examples]

Stakeholder Name	Activity/ Area /Phase	Interest	Influence	Priority (High/ Medium/ Low)
Owner	Handles Everything	High	High	High
Sponsor	Provides Money	Med	High	Med
Team Member	Retain and upgrade skills	High	High	High

/ *

For Example

Stakeholder Name	Activity / Area / Phase	Interest	Influence	Priority (High / Medium/Low)
Regional Head of Sales & Marketing	Subscription using mobile App	High	High	1
Finance Account Receivable consultant	Multiple Currency Payment	High	Low	3

. Interest and Influence matrix

Interest	Influence
High	High
Low	Low
Low	High
High	Low

Stakeholder	Interests	Estimated Project Impact	Estimated Priority
Owner	Achieve targets, Increase sales margin	High	1
Sponsor	Provides new market to expand ventures Negotiate funding for project Reviews changes to project environments.	Med	3
Team members	Demand incentives Retain and upgrade skills New product excitement	High	2
Project Manager	Lead the team in every aspect. Accountable for entire project scope, team, success & failure	High	2
Investors	Promoter of the investment, Provides necessary financial resources	Low	5
Resource Manager	Resource planning and allocation. Ensuring adequate resource according to project needs and budget.	Med	4
Suppliers	Ensuring feasible and realistic in every aspect Managing divergence from budgeted cost.	Med	6
End Users	Provides feedback	Low	7

*/

Result

Thus the Project Methodology was identified and the stakeholders were described.

Department Of Networking and Communications

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	3
Title of Experiment	System, Functional and Non-Functional Requirements of the Project
Name of the candidate	Divyansh Mohan Srivastava
Team Members	Sidharth Kothari, Harish Kumar Divyansh Mohan
Register Number	RA2011051010043, RA2011051010049, RA2011051010059,
Date of Experiment	04/04/2022

Mark Split Up

S.No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
	Total	**10**	

Staff Signature with date

Aim

To identify the system, functional and non-functional requirements for the project.

Team Members:

S No	Register No	Name	Role
1	RA2011051010043	Sidharth Kothari	Rep/Member
2	RA2011051010049	Harish Kumar	Member
3	RA2011051010059	Divyansh Mohan	Member

Project Title: EZGAD

System Requirements:

User System Requirement:-

Component Minimum Recommended

Processor 1.9 gigahertz (GHz) x86- or x64-bit dual core processor with SSE2 instruction set 3.3 gigahertz (GHz) or faster 64-bit dual core processor with SSE2 instruction set

Memory 2-GB RAM 4-GB RAM or more

Display Super VGA with a resolution of 1024 x 768 Super VGA with a resolution of 1024 x 768.

Network requirements

Model-driven apps are designed to work best over networks that have the following elements:

Bandwidth greater than 50 Kbps (400 kbps)

Latency under 150 ms .

Creator System Requirement:-

CPU: for web 1,6 GHz , for web and database 4 x 1,6 GHz CPU.

RAM: 4GB.

Minimum database space: 10GB.

CPU: Quad 2GHz+ CPU.

RAM: 6GB.

Minimum database space: 10GB

Functional Requirements:-

Sign up/ Login:-

Credentials are already saved with the account and you are just authenticating yourself as a returning user. Sign up, is an action taken by the user who identifies himself as a new user.

SECURITY NFR

Searching:-

Searching for a specific product in the list of items available.

PERFORMANCE NFR

Filter:-

Filtering items based on interest like laptop, keyboard mouse etc.

USABILITY NFR

Sorting:

Sorting items from different points of view like price, design etc.

PERFORMANCE

Add to cart:

Adding items so that you can proceed to order them.

USABILITY NFR

Payment Gateway:

Make payment for the products being purchased.

SECURITY NFR.

A specification document, often referred to as "terms of reference", is drawn up at the stage prior to the development phase, which is agreed upon by three parties: the customer side, the developer side, and the designer side.

Only after the latter two parties confirm that all the customer wishes are possible to satisfy and the customer approves the specified budget, the list of functional requirements can be approved and the high time to begin the development process comes.

Non-Functional Requirements:-

Usability:

Regardless of the size of your business, the website of your business should be easy to use for even a non-technical user. Do you know that a general user takes just 0.05 seconds to figure out whether the website is worth its time or not? Thus you have to give special attention to the design of your homepage, CTAs, and easy checkout to

get past those milliseconds of doom. The usability of a website is also defined by:

How easily a user can achieve their target in a single page visit

How quickly they can perform tasks in the store

The memorable & intuitiveness of the design

Number and types of errors users make.

Security:

Security comes with utmost importance if your site is dealing with monetary transactions, users' financial and sensitive data. Using an SSL certificate and data privacy policy will create trust among the users for your website and convert the customers into brand advocates. It is also considered for the different admin roles by which you can control who can create, see, copy, change or delete information. Depending upon the location of your business, security also refers to compliance with customer data protection rules such as GDPR in Europe.

Performance:

For increasing the traffic on your website, you have to give special attention to the performance in the non-functional requirements documentation. The focus should be on loading the e-commerce store as fast as possible regardless of the number of integrations and traffic on your website. You can set up the speed benchmark, maximum SKUs which you want to add, or any other performance indicator best for

your business. Don't consider the 3rd party system delivery time, because the developers will not have control over the 3rd party API calls.

Maintainability:

The operational costs for maintenance are the tricky part of planning a business budget. Thriving the website maintenance from the initial development means cutting the time & cost to determine and resolve the faults of the system in the future. Well, it sounds sad but there is no way to avoid issues in the future and you have to look for a website development company that can maintain your website.

Scalability:

Last but not the least, you have to look for a future-proof solution considering the scalability. It will define how the website can grow and increase its features and functionality without impacting the performance of your website. You must be able to add more memory, servers, or disc space for making more transactions on your website. On the server side, while entering new markets you may need to add localization features. Overall, this accounts for painless business expansion and has both hardware and software implications.

Result

The requirements were identified Thus and accordingly described.

EXPERIMENT 4

NAME	Divyansh Mohan
REG NO	RA2011051010059
DATE OF EXPERIMENT	07/04/2022

TEAM MEMBERS :

S.NO	REG NO	NAME	ROLE
1.	RA2011051010043	Siddharth Kothari	TEAM LEAD
2.	RA2011051010049	Harish Kumar	MEMBER
3.	RA2011051010059	Divyansh Mohan	MEMBER

1. COCOMO MODEL

- ***COnstructive COst MOdel***
- ***Initial estimate from evaluation of KLOC***
- ***Attributes of this projects***
  - Our project type: Organic
- ***Basic COCOMO model***
  - Effort = E = $a(KLOC)^b$
  - Development time = D = $c(Effort)^d$

- Productivity = KLOC/Effort

Software Project	a_b	b_b	c_b	d_b
Organic	2.4	1.05	2.5	0.38
Semidetached	3.0	1.12	2.5	0.35
Embedded	3.6	1.20	2.5	0.32

- ***For organic model***
  - a = 2.4
  - b = 1.05
  - c = 2.5
  - d = 0.38
- ***our project is organic because we assume that 20 KLOC will be used in the project***

  - Effort = E = $2.4(20)^{1.05}$
    Effort = E = 56 person months (PM)

  - Development time = D = $2.5(56)^{0.38}$
    Development time = D = 12 months

  - Productivity = 20/56
    Productivity = 0.357 KLOC/PM

2. FUNCTIONAL POINTS (FP)

- ***Multiple parameters***
  - External Inputs (EI)
  - External Outputs (EO)
  - External Inquires (EQ)
  - Internal Logic Files (ILF)
  - External Interface Files (EIF)

- ***FORMULA for FP***
  - FP= UFP * CAF
  - CAF = 0.65+(0.01*F)
  - F = 14*Scale
  - CAF – Complexity Adjustment Factor
  - UFP – Unadjusted Functional Point
  - FP– Functional Point

- ***Parameters and their weight factors***

Component	Low	Average	High
External Inputs	3	4	6
External Outputs	4	5	7
External Inquiries	3	4	6
Internal Logical Files	7	10	15
External Interface Files	5	7	10

- ***Scale values***
  - 0 - No Influence
  - 1 - Incidental
  - 2 - Moderate
  - 3 - Average
  - 4 - Significant
  - 5 – Essential

- ***Our Project parameters assumption***
  - EI= 35
  - EO= 20
  - EQ= 22
  - ILF= 6
  - EIF= 4
  - All weight factors are low
  - CAF– Moderate (scale =2)

- ***Calculations***
  - F = 14*2
    F = 28

  - CAF = 0.65+(0.01*28)
    CAF = 0.93

- UFP = 35*3 + 20*4 + 22*3 + 6*7 + 4*5
  UFP =335

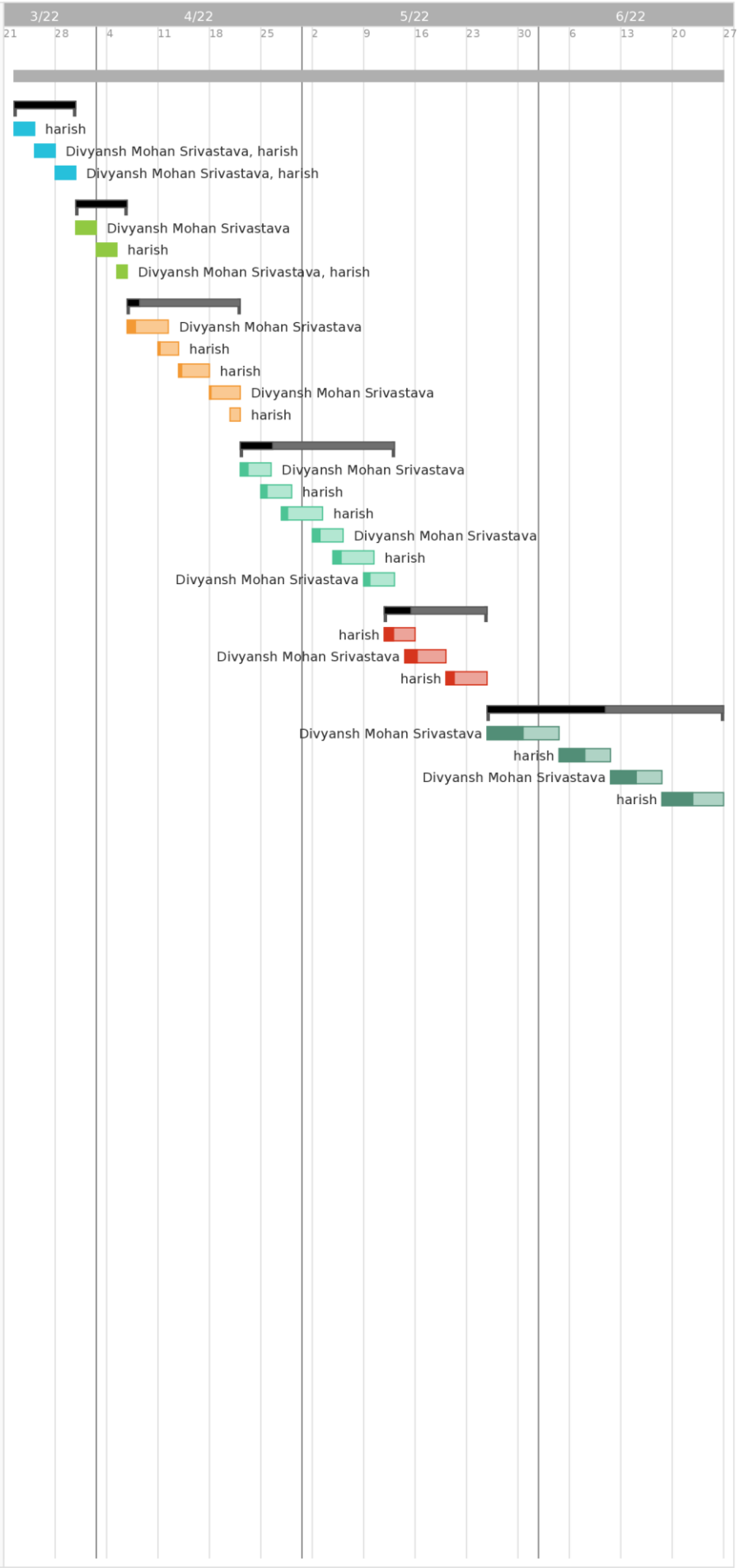
- FP = 0.93*335
  FP = 311.55 FP/PM

EXPERIMENT 5

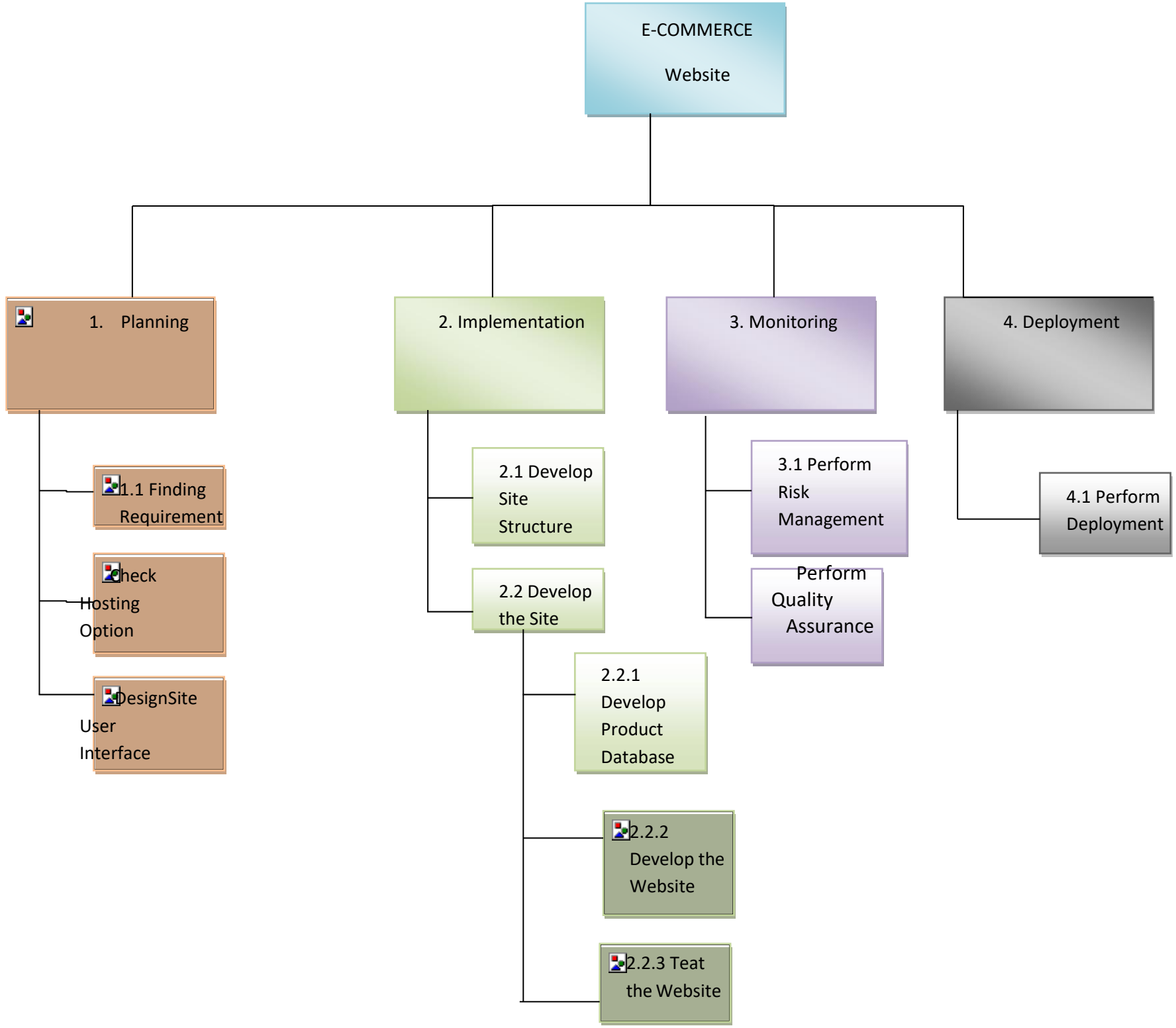
NAME	Divyansh Mohan
REG NO	RA2011051010059
DATE OF EXPERIMENT	07/04/2022

TEAM MEMBERS:

S.NO	REG NO	NAME	ROLE
1.	RA2011051010043	Siddharth Kothari	TEAM LEAD
2.	RA2011051010049	Harish Kumar	MEMBER
3.	RA2011051010059	Divyansh Mohan	MEMBER



Ezgad	**0h**	**40%**	
Project Plan	**0h**	**100%**	
Planning	0	100%	harish
Idea of Project	0	100%	Divyansh Mohan Srivastava, harish
Project Approvel	0	100%	Divyansh Mohan Srivastava, harish
Requirement	**0h**	**100%**	
Functional Requirement	0	100%	Divyansh Mohan Srivastava
NonFunctional Requirement	0	100%	harish
System Requirement(User/Creator)	0	100%	Divyansh Mohan Srivastava, harish
Design	**0h**	**11%**	
Log in	0	20%	Divyansh Mohan Srivastava
Home Page	0	10%	harish
Product Page	0	10%	harish
About Us	0	5%	Divyansh Mohan Srivastava
Log Out	0	0%	harish
Coding	**0h**	**21%**	
Home Page	0	25%	Divyansh Mohan Srivastava
Log Out	0	20%	harish
Product	0	15%	harish
Add to cart	0	25%	Divyansh Mohan Srivastava
Payment	0	20%	harish
Feedback	0	20%	Divyansh Mohan Srivastava
Error Deduction	**0h**	**26%**	
Spoting Error	0	30%	harish
Error Analysis	0	30%	Divyansh Mohan Srivastava
Debuging	0	20%	harish
Marketing	**0h**	**50%**	
Instagram	0	50%	Divyansh Mohan Srivastava
Twitter	0	50%	harish
Facebook	0	50%	Divyansh Mohan Srivastava
Linkedin	0	50%	harish


E-COMMERCE
Website
1. Planning
2. Implementation
3. Monitoring
4. Deployment
1.1 Finding Requirement
Check Hosting Option
DesignSite User Interface
2.1 Develop Site Structure
2.2 Develop the Site
2.2.1 Develop Product Database
2.2.2 Develop the Website
2.2.3 Teat the Website
3.1 Perform Risk Management
Perform Quality Assurance
4.1 Perform Deployment

WORK BREAKDOWN STRUCTURE -OUTLINE

Ecommerce Website

1. Planning
    - Finding Requirements
    - Check hosting option
    - Design site user interface
2. Implementation
    - Develop site structure
    - Develop the site

Develop Product database
Develop website database
Test the website

3. Monitoring
    - Perform Risk Management
    - Perform Quality Assurance
4. Deployment

Perform Deployment

School of Computing

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	6
Title of Experiment	Design a System Architecture, Use Case and Class Diagram
Team Members	Sidharth Kothari, Harish Kumar Divyansh Mohan
Register Number	RA2011051010043,RA2011051010049,RA2011051010059
Date of Experiment	12/05/2022

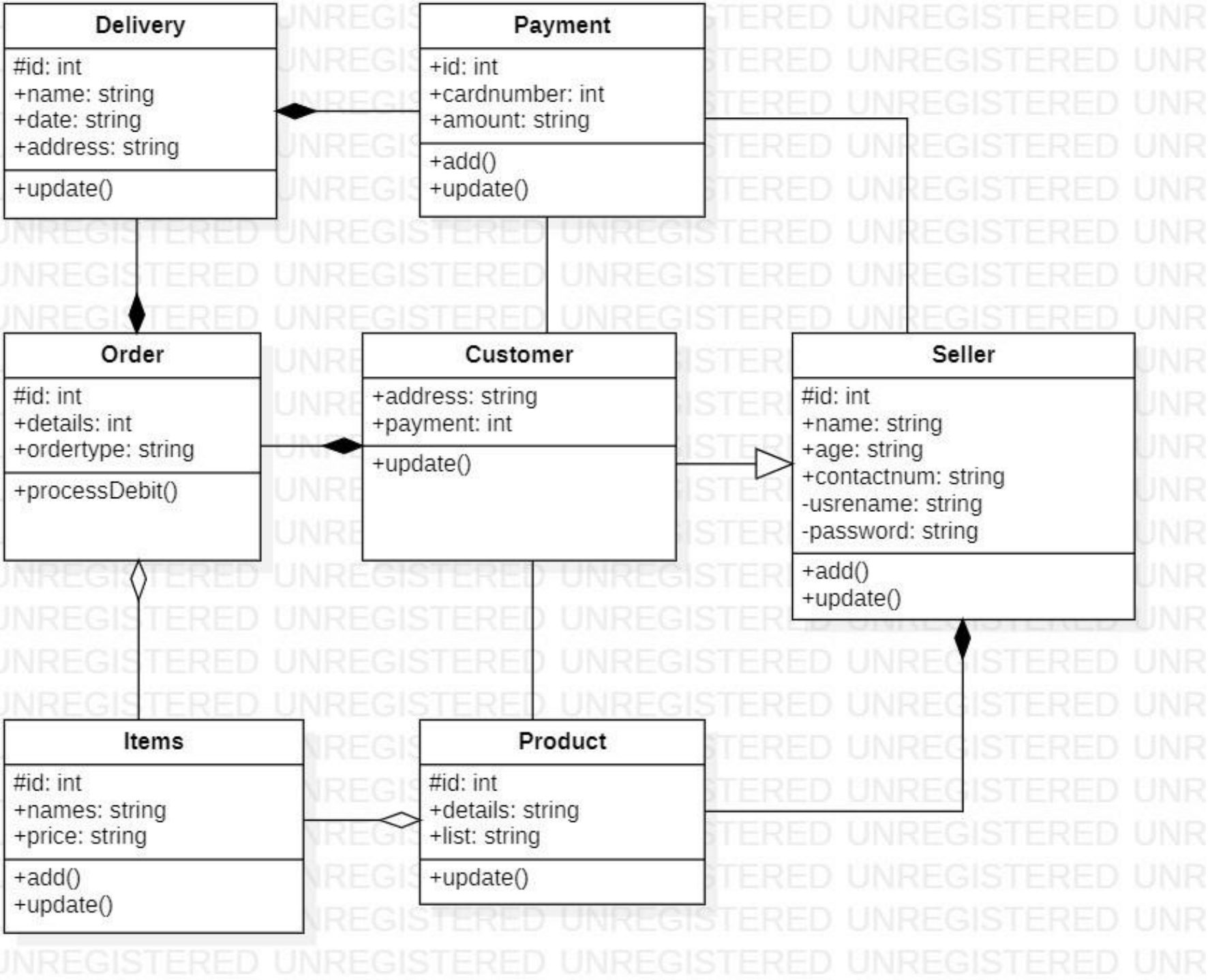
Mark Split Up

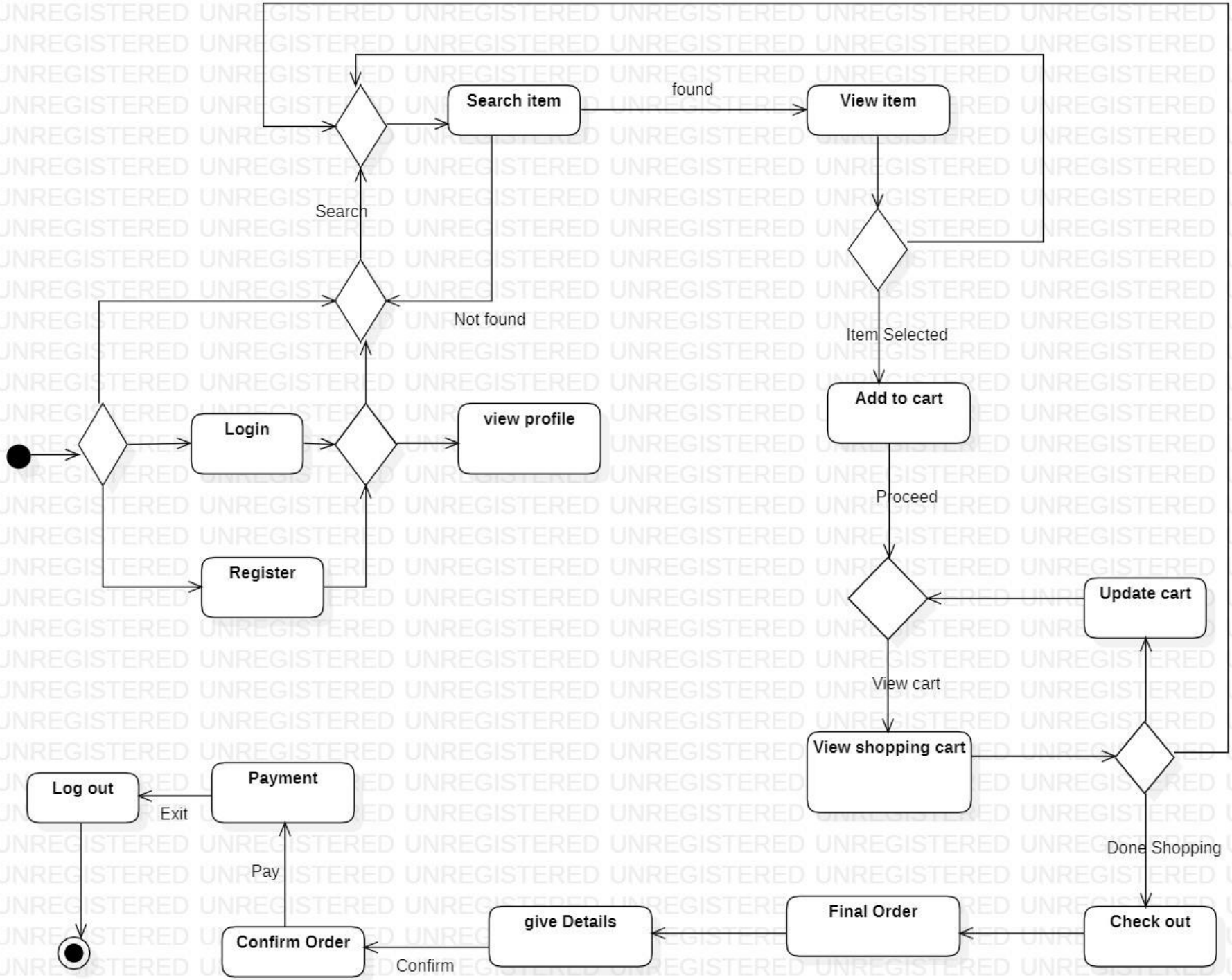
S.No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
	Total	**10**	

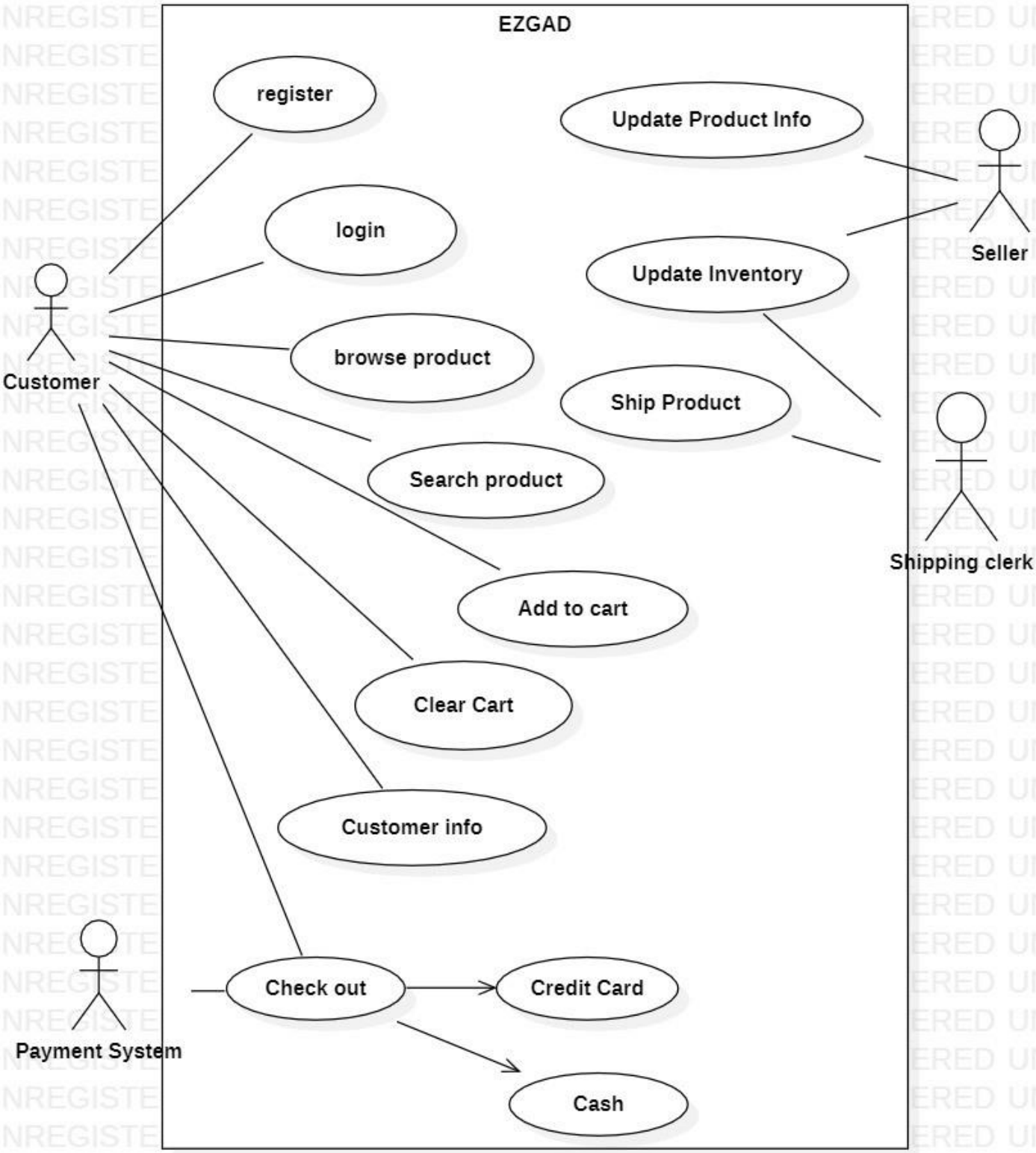
Staff Signature with date

Aim

To Design a System Architecture, Use case and Class Diagram


Delivery
#id: int
+name: string
+date: string
+address: string
+update()
Payment
+id: int
+cardnumber: int
+amount: string
+add()
+update()
Order
#id: int
+details: int
+ordertype: string
+processDebit()
Customer
+address: string
+payment: int
+update()
Seller
#id: int
+name: string
+age: string
+contactnum: string
-usrename: string
-password: string
+add()
+update()
Items
#id: int
+names: string
+price: string
+add()
+update()
Product
#id: int
+details: string
+list: string
+update()


Search item
found
View item
Search
Not found
Item Selected
Add to cart
Login
view profile
Proceed
Register
Update cart
View cart
View shopping cart
Log out
Payment
Exit
Pay
Done Shopping
Confirm Order
Confirm
give Details
Final Order
Check out


EZGAD
register
login
browse product
Search product
Add to cart
Clear Cart
Customer info
Check out
Credit Card
Cash
Update Product Info
Update Inventory
Ship Product
Customer
Seller
Shipping clerk
Payment System

SRM INSTITUTE OF SCIENCE & TECHNOLOGY
(Deemed to be University u/s 3 of UGC Act, 1956)

School of Computing

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	7
Title of Experiment	Design a Entity relationship diagram
Name of the candidate	Divyansh Mohan
Team Members	HARISH KUMAR , SIDHARTH, DIVYANSH MOHAN
Register Number	RA2011051010059
Date of Experiment	

Mark Split Up

S. No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
	Total	**10**	

Staff Signature with date

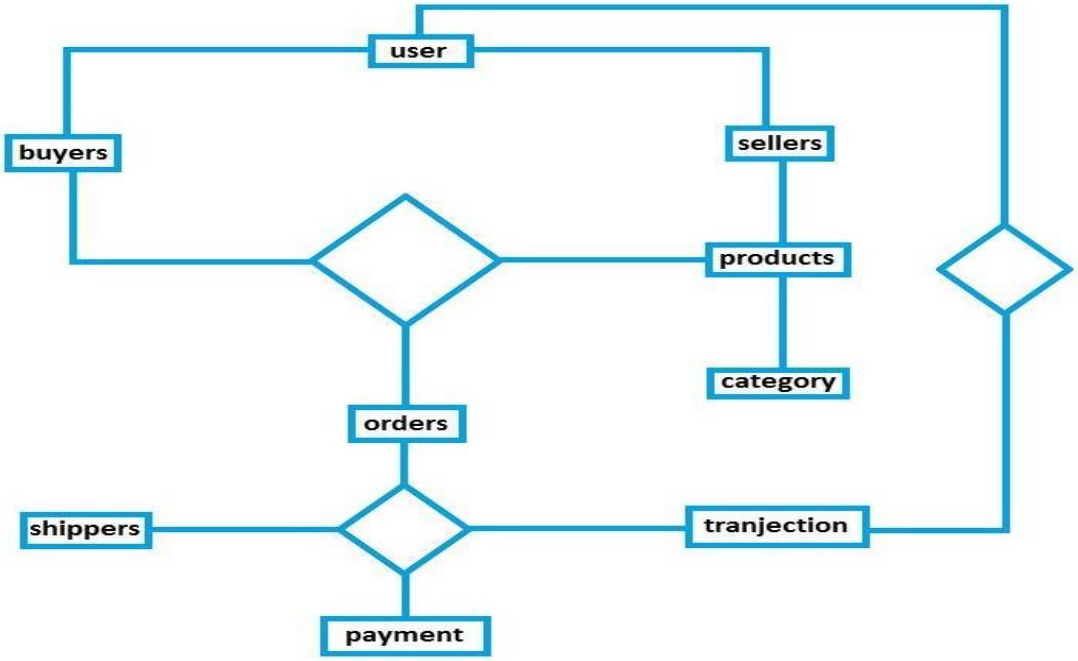
Aim

To create the Entity Relationship Diagram

Team Members:

S No	Register No	Name	Role
1	RA2011051010043	V.SIDHARTH	Rep
2	RA2011051010059	DIVYANSH MOHAN	Member
3	RA2011051010049	HARISH KUMAR.T.G	Member

ER Diagram



Result:

Thus, the entity relationship diagram was created successfully.

***/ ER Diagram, Notation and Example**

What is ER Diagram?

- ER Diagram stands for Entity Relationship Diagram, also known as ERD is a diagram that displays the relationship of entity sets stored in a database. In other words, ER diagrams help to explain the logical structure of databases. ER diagrams are created based on three basic concepts: entities, attributes and relationships.
- ER Diagrams contain different symbols that use rectangles to represent entities, ovals to define attributes and diamond shapes to represent relationships.

- At first look, an ER diagram looks very similar to the flowchart. However, ER Diagram includes many specialized symbols, and its meanings make this model unique. The purpose of ER Diagram is to represent the entity framework infrastructure.

What is ER Model?

- ER Model stands for Entity Relationship Model is a high-level conceptual data model diagram. ER model helps to systematically analyze data requirements to produce a well-designed database.
- ER Model represents real-world entities and the relationships between them. Creating an ER Model in DBMS is considered as a best practice before implementing your database.
- ER Modeling helps you to analyze data requirements systematically to produce a well-designed database. So, it is considered a best practice to complete ER modeling before implementing your database.

Why use ER Diagrams?

Here, are prime reasons for using the ER Diagram

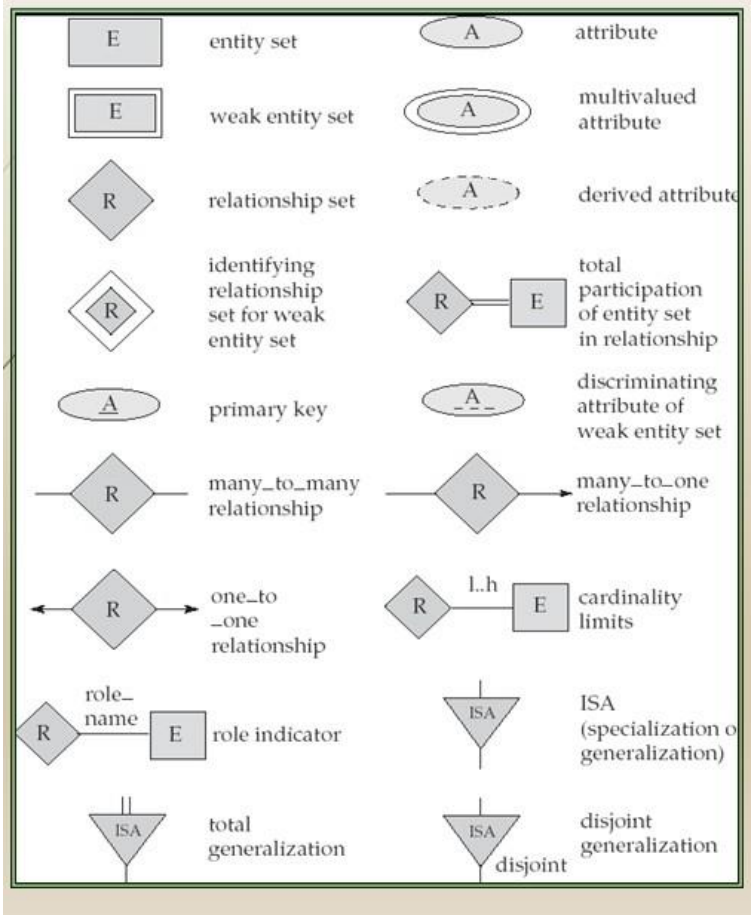
- Helps you to define terms related to entity relationship modeling
- Provide a preview of how all your tables should connect, what fields are going to be on each table
- Helps to describe entities, attributes, relationships
- ER diagrams are translatable into relational tables which allows you to build databases quickly
- ER diagrams can be used by database designers as a blueprint for implementing data in specific software applications
- The database designer gains a better understanding of the information to be contained in the database with the help of ERP diagram
- ERD Diagram allows you to communicate with the logical structure of the database to users

Components of the ER Diagram

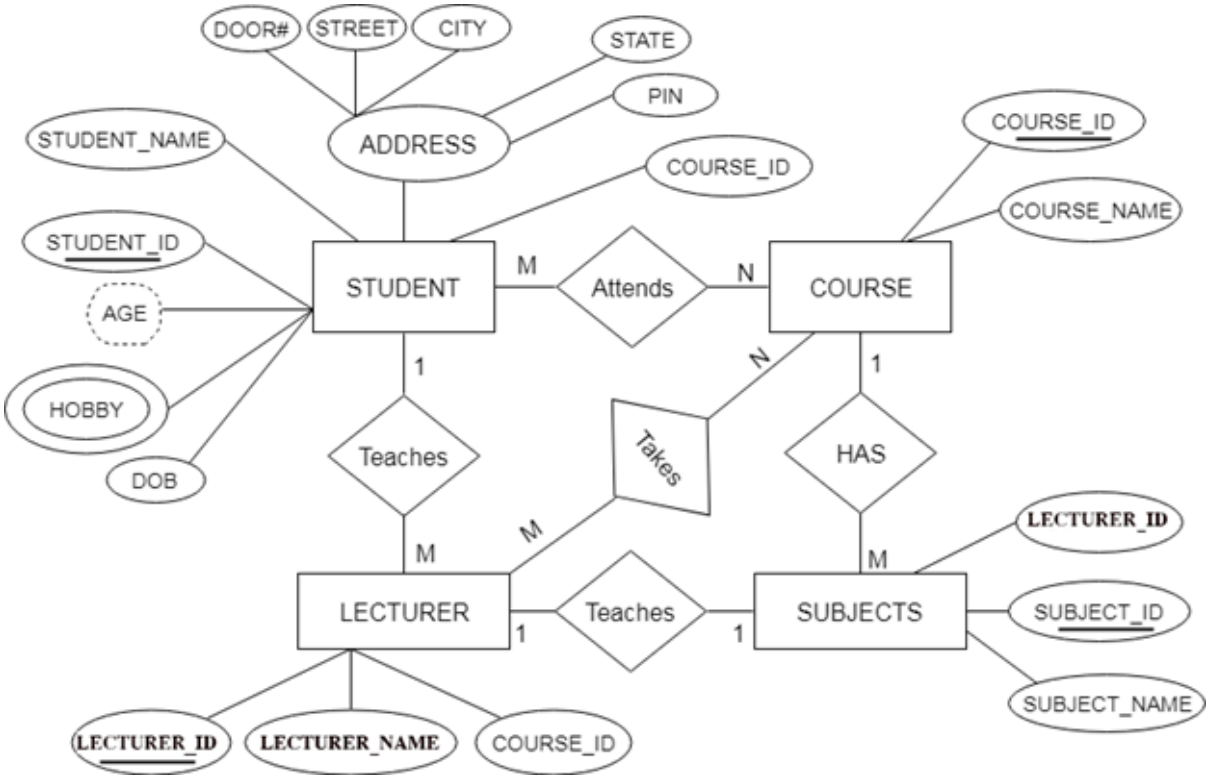
This model is based on three basic concepts: Entities, Attributes, Relationships

ER Diagram – Notations

- Rectangles represent entity sets.
- Diamonds represent relationship sets.
- Lines link attributes to entity sets and entity sets to relationship sets.
- Ellipses represent attributes
- Double ellipses represent multivalued attributes.
- Dashed ellipses denote derived attributes.
- Underline indicates primary key attributes



ER Diagram of University Database



ADDITIONAL NOTES

- A database can be modeled as a collection of entities, relationship among entities.
- An entity is an object that exists and is distinguishable from other objects.
Example: specific person, company, event, plant
- Entities have attributes.
Example: people have names and addresses
- An entity set is a set of entities of the same type that share the same properties.
Example: set of all persons, companies, trees, holidays

- Express the number of entities to which another entity can be associated via a relationship set.
- Most useful in describing binary relationship sets.
- We express cardinality constraints by drawing either a directed line (->), signifying "one," or an undirected line (—), signifying "many," between the relationship set and the entity set.

- An entity is represented by a set of attributes, that is descriptive properties possessed by all members of an entity set.
Example: customer = (customer-id, customer-name, customer-street, customer-city)
loan = (loan-number, amount)
- Domain – the set of permitted values for each attribute
- Attribute types:
1. Simple and composite attributes.
2. Single-valued and multi-valued attributes
E.g. multivalued attribute: phone-numbers
3. Derived attributes-Can be computed from other attributes

E.g. age, given date of birth

Cardinality

- For a binary relationship set the mapping cardinality must be one of the following types:

1. One to one

A customer is associated with at most one loan via the relationship borrower. A loan is associated with at most one customer via borrower

2. One to many

A loan is associated with at most one customer via borrower, a customer is associated with several (including 0) loans via borrower

3. Many to one

A loan is associated with several (including 0) customers via borrower, a customer is associated with at most one loan via borrower

4. Many to many

A loan is associated with several (including 0) customers via borrower, a customer is associated with several loans (including 0) via borrower

Weak Entity Set

- An entity set that does not have a primary key is referred to as a weak entity set and represented by double outlined box in E-R diagram.

Example : Consider the entity set payment which got three attributes : payment_number, payment_date and payment_amount. Payment numbers are sequential starting from 1 generally separately for each loan. Although each payment entity is distinct, payments for different loans may share the same payment number. Thus this entity set does not have a primary key.

Discriminator

- The discriminator (or partial key) of a weak entity set is the set of attributes that distinguishes among all the entities of a weak entity set

Example: discriminator of weak entity set payment is the attribute payment_number since for each loan a payment number uniquely identifies one single payment for that loan.

Specialization-Generalization-ISA

- E-R model provides means of representing these distinctive entity groupings
- Process of designating subgroupings within an entity set is called specialization depicted by triangle component labelled ISA (“is a”)
- Bottom up design process in which multiple entity sets are synthesized into higher level entity set - Generalization
- ISA relationship may also be referred to as superclass-subclass relationship
- Higher and lower level entity sets are designated by the terms superclass and subclass.
- Specialization and generalization are simple inversions of each other; they are represented in an E-R diagram in the same way.

Total & Partial Participation

- Total participation (indicated by double line): every entity in the entity set participates in at least one relationship in the relationship set

E.g. participation of loan in borrower is total, every loan must have a customer associated to it via borrower

- Partial participation: some entities may not participate in any relationship in the relationship set

Example: participation of customer in borrower is partial

Cardinality limits

- Cardinality limits can also express participation constraints
- Minimum and maximum cardinality is expressed as l..h where l is the minimum and h is the maximum cardinality
- Minimum value of 1 indicates total participation of entity set in relationship set
- Maximum value of 1 indicates entity participates in atmost one relationship set.
- Maximum value of * indicates no limit

Role indicator

- Entity sets of a relationship need not be distinct
- The labels "manager" and "worker" are called roles; they specify how employee entities interact via the works-for relationship set.
- Roles are indicated in E-R diagrams by labeling the lines that connect diamonds to rectangles.
- Role labels are optional, and are used to clarify semantics of the relationship

Disjoint Generalization

- Disjointness constraint requires that an entity belong to more than one lower level entity set. Example: account entity can satisfy only one condition for account_type attribute ; entity can either be savings or chequing account but not both.

School of Computing

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	8
Title of Experiment	Develop a Data Flow Diagram (Process-Up to Level 1)
Name of the candidate	Divyansh Mohan
Team Members	HARISH KUMAR , SIDHARTH, DIVYANSH MOHAN
Register Number	RA2011051010059
Date of Experiment	26/5/22

Mark Split Up

S. No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
	Total	**10**	

Staff Signature with date

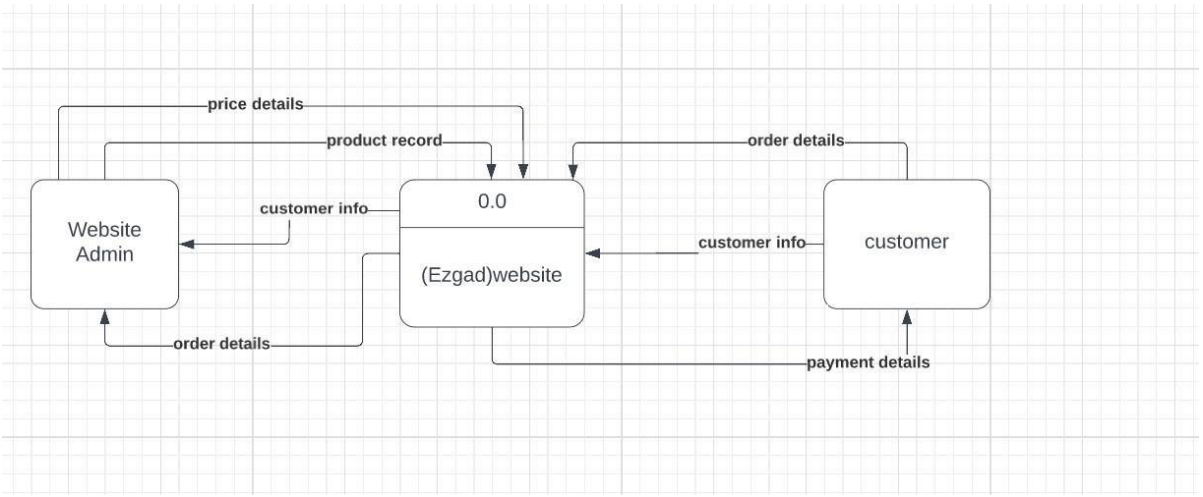
Aim

To develop the data flow diagram up to level 1 for the <project name>

Team Members:

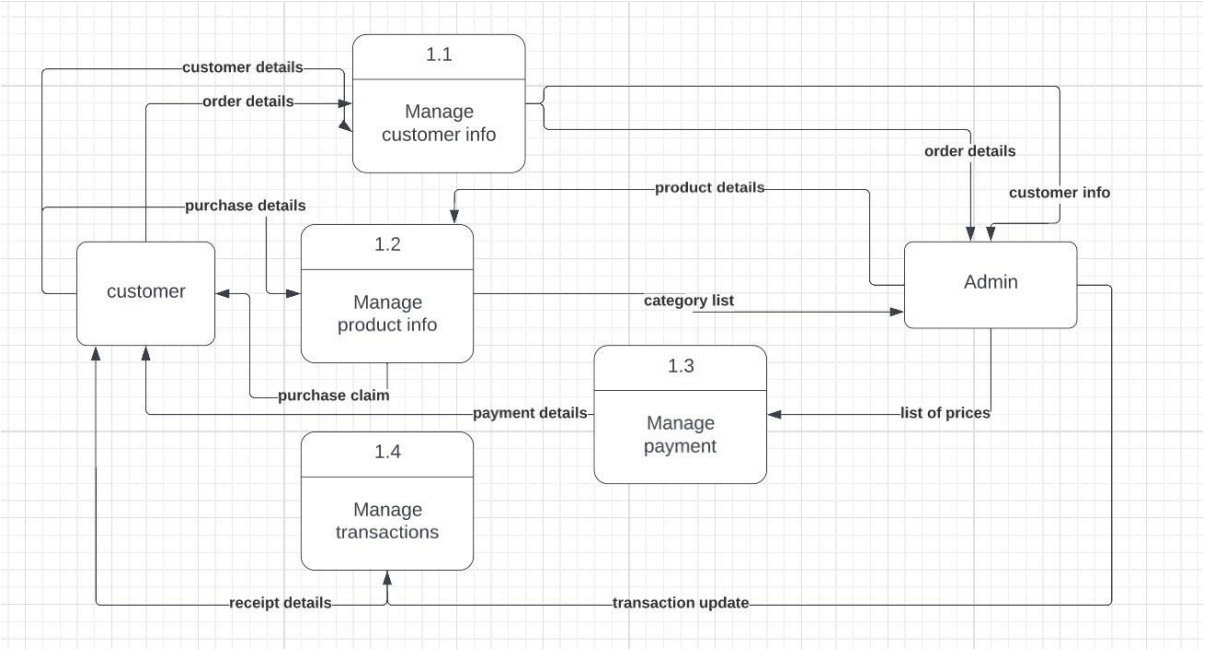
S No	Register No	Name	Role
1	V.SIDHARTH	RA2011051010043	Rep
2	HARISH KUMAR.T.G	RA2011051010049	Member
3	DIVYANSH MOHAN	RA2011051010059	Member

level 0



The **Level 0 DFD Diagram** contains the basic yet general process of the system. Its purpose is to give the system analyst and programmers the basis for further process. The reason why the DFD Level were done one-by-one is to see and avoid flaws while still designing the diagram. To design the DFD Level 0, you must look into the general aspect of your project. Figure the core concept of the system and put it in a single process to produce a context diagram. You need to determine the main process, users (external entities) and the data flow. For example, this level diagram contains the flow of work from the website admin to the website adding on information like customer details and order details and then from website it reaches the customer and gets the required information like order details and customer information and payment details and returns to the admin through website.

LEVEL 1



The **DFD Level 1 Diagram** provides a broad overview and greater depth of DFD Level 0. The single process node from the context diagram is broken down into sub processes to see the included data that may enter and exits system. **DFD Level 1** lists all of the included processes that make up the entire system. It is the broadened context terms that consist of several processes derived from the main process. They were also numbers to see that were all part of the single process from Website DFD Level 0. Here, DFD level 1 diagram adds-on more information and detail flow of work than 0 level which includes processes like manage customer info, payment details, product details and transaction details. The admin and the customer is interconnected through the website via processes like manage customer info, manage payment, product details and transaction details to perform various tasks.

Result:

Thus, the data flow diagrams have been created for the EZGAD..

Data Flow Diagram

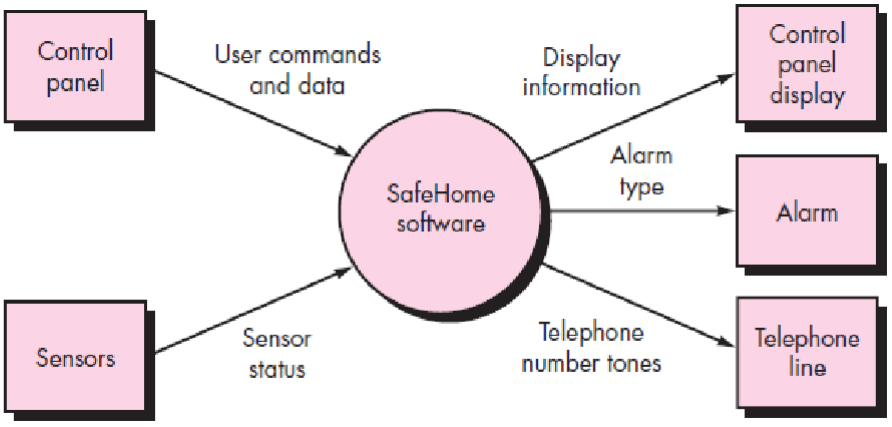
The DFD takes an input-process-output view of a system. That is, data objects flow into the software, are transformed by processing elements, and resultant data objects flow out of the software. Data objects are represented by labeled arrows, and transformations are represented by circles (also called bubbles). The DFD is presented in a hierarchical fashion. That is, the first data flow model (sometimes called a level 0 DFD or context diagram) represents the system as a whole. Subsequent data flow diagrams refine the context diagram, providing increasing detail with each subsequent level.

The data flow diagram enables you to develop models of the information domain and functional domain. As the DFD is refined into greater levels of detail, you perform an implicit functional decomposition of the system. At the same time, the DFD refinement results in a corresponding refinement of data as it moves through the processes that embody the application.
A few simple guidelines can aid immeasurably during the derivation of a data flow diagram:
(1) Level 0 data flow diagram should depict the software/system as a
single bubble;
(2) Primary input and output should be carefully noted;
(3) Refinement should begin by isolating candidate processes, data objects, and data stores to be represented at the next level;
(4) All arrows and bubbles should be labeled with meaningful names;
(5) Information flow continuity must be maintained from level to level and
(6) One bubble at a time should be refined. There is a natural tendency to overcomplicate the data flow diagram. This occurs when you attempt to show too much detail too early or represent procedural aspects of the software in lieu of information flow.

*/ For Example

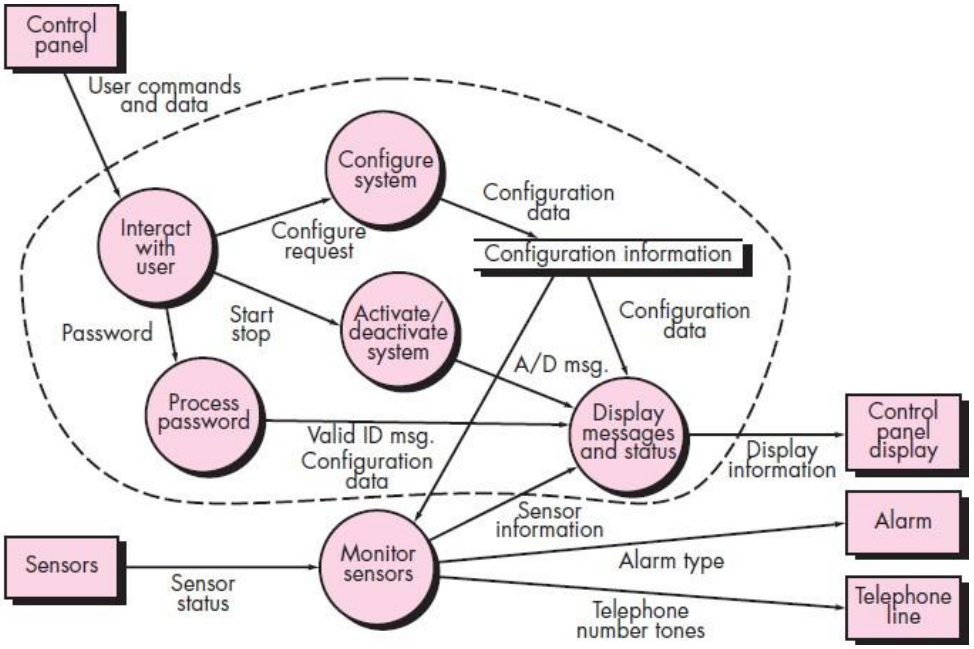
DFD Level 0

Context-level DFD for the *SafeHome* security function



DFD Level 1

Level 1 DFD for the *SafeHome* security function



School of Computing

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	9
Title of Experiment	Design a Sequence and Collaboration Diagram
Name of the candidate	Divyansh Mohan Srivastava
Team Members	HARISH KUMAR , SIDHARTH, DIVYANSH MOHAN
Register Number	RA2011051010059
Date of Experiment	09/06/2022

Mark Split Up

S. No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
	Total	**10**	

Staff Signature with date

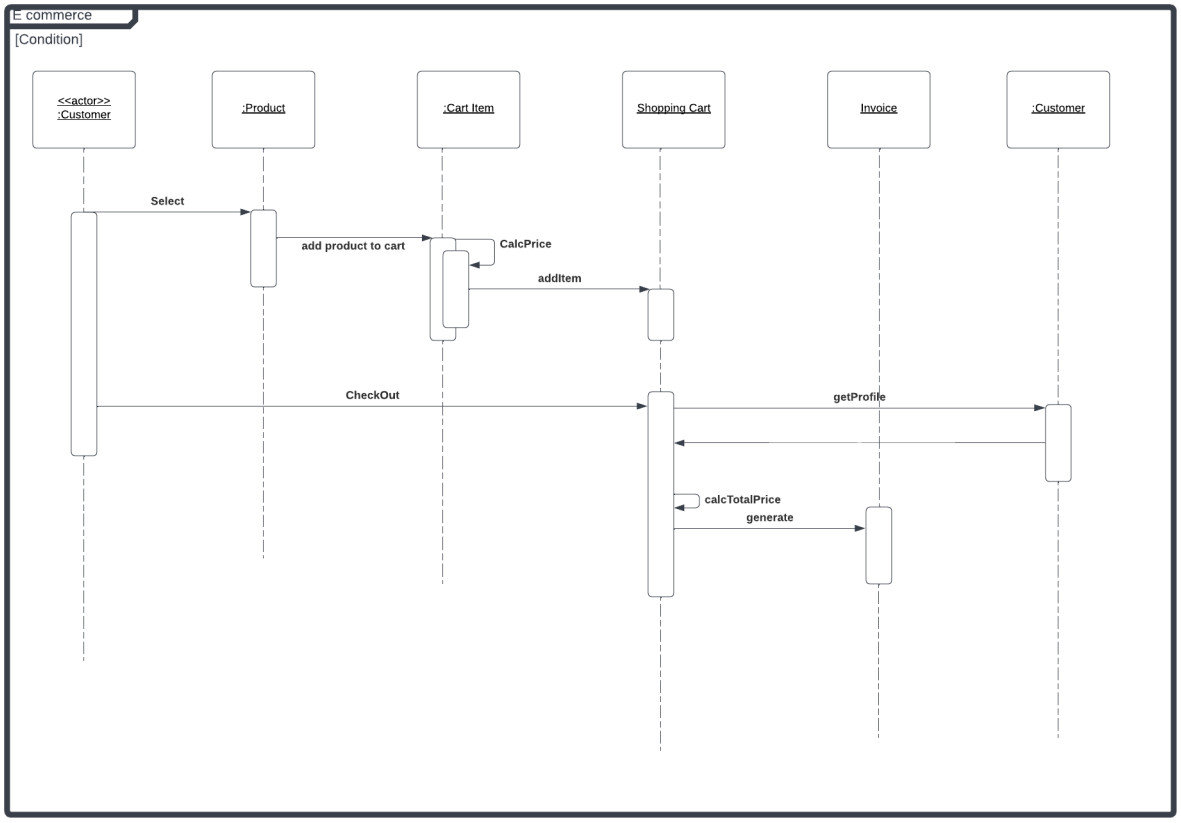
Aim

To create the sequence and collaboration diagram for the <project name>

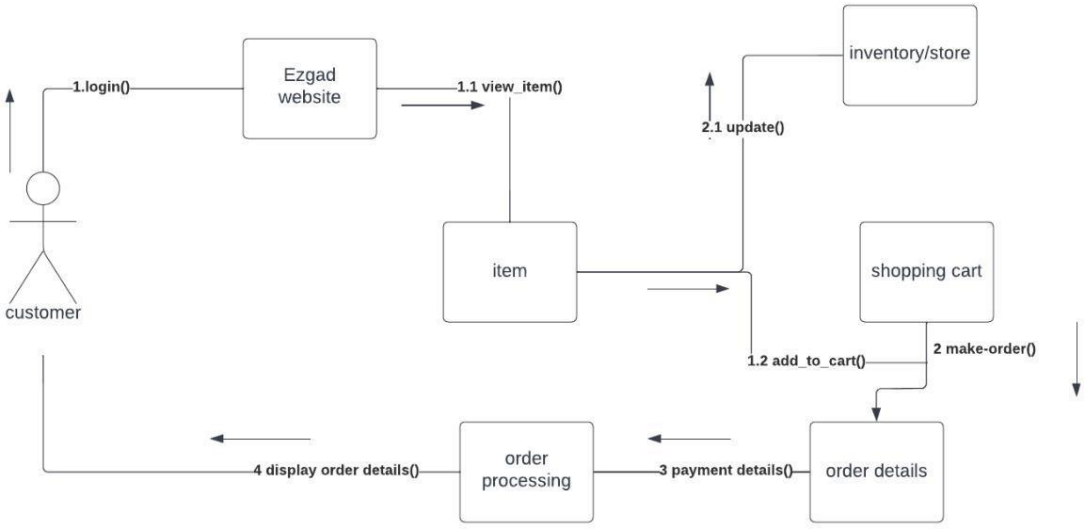
Team Members:

S No	Register No	Name	Role
1	RA2011051010043	Sidharth	Rep/Member
2	RA2011051010049	Harish Kumar T G	Member
3	RA2011051010059	Divyasnh Mohan	Member

Sequence Diagram



Collaboration Diagram

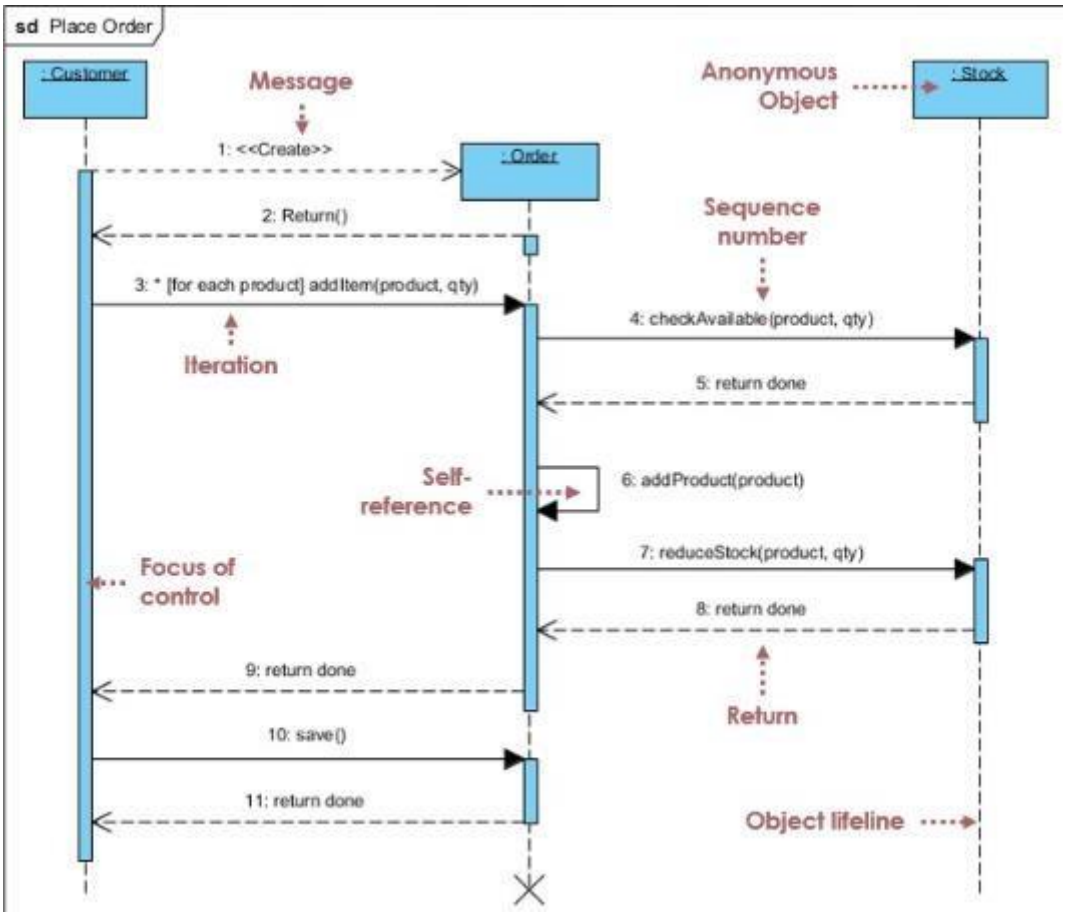


Result:

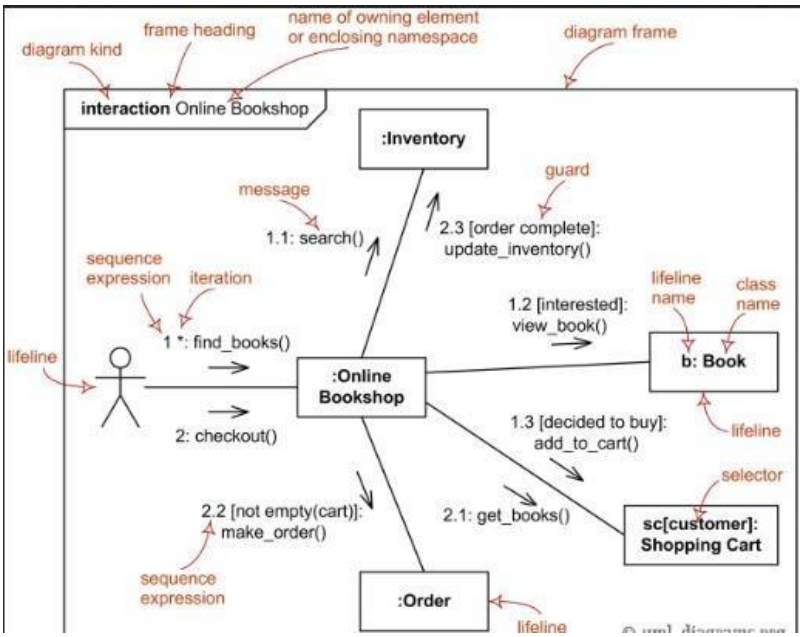
Thus, the sequence and collaboration diagrams were created for the <project name>.

<u>*/ For Example</u>

Sequence Diagram



Collaboration Diagram



School of Computing

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	10
Title of Experiment	Develop a Testing Framework/User Interface
Team Members	Sidharth Kothari, Harish Kumar, Divyansh Mohan
Register Number	RA2011051010043, RA2011051010049, RA2011051010059
Date of Experiment	15/06/2022

Mark Split Up

S. No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
	Total	**10**	

Staff Signature with date

Aim

To develop the testing framework and/or user interface framework for the <e-Tourism>

Team Members:

S No	Register No	Name	Role
1	RA2011051010043	Sidharth Kothari	**Rep/Member**
2	RA2011051010049	Harish Kumar	**Member**
3	RA2011051010059	Divyansh Mohan	**Member**

User Interface:



Result:

Thus, the testing framework/user interface framework has been created for the < e-commerce>.

School of Computing

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	11
Title of Experiment	Test Cases
Team Members	Sidharth Kothari, Harish Kumar, Divyansh Mohan
Register Number	RA2011051010043, RA2011051010049, RA2011051010059
Date of Experiment	15/06/2022

Mark Split Up

S. No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
	Total	**10**	

Staff Signature with date

Aim

To develop the test cases manual for the <project name>

Team Members:

S No	Register No	Name	Role
1	RA2011051010043	Sidharth Kothari	**Rep**
2	RA2011051010049	Harish Kumar	**Member**
3	RA2011051010059	Divyansh Mohan	**Member**

Test Case table for e-Commerce

Test ID (#)	Test Scenario	Test Case	Execution Steps	Expected Outcome	Actual Outcome	Status	Remarks
TC-01	Verify User Registration	With all data	1. User clicks on User Registration link 2. Enter the mobile Number on the text box 3. Click Register button	User should be taken to the next page for entering more user details	Verified location based on preference	Pass	Success
TC-02	Website Product data	With preference use of user	Data given by user about the product should be displayed.	Better site	The product needed by the user is present	Pass	Success

Result:

Thus, the test case manual has been created for the <e-Commerce>.

School of Computing

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	12
Title of Experiment	Provide details of Architecture Design/Framework/Implementation
Team Members	Sidharth Kothari, Harish Kumar, Divyansh Mohan
Register Numbers	RA2011051010043, RA2011051010049, RA2011051010059
Date of Experiment	16/06/2022

Mark Split Up

S. No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
	Total	**10**	

Staff Signature with date

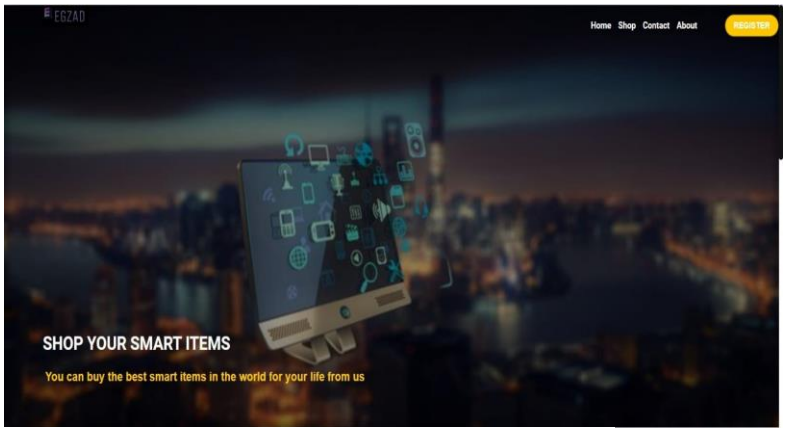
Aim

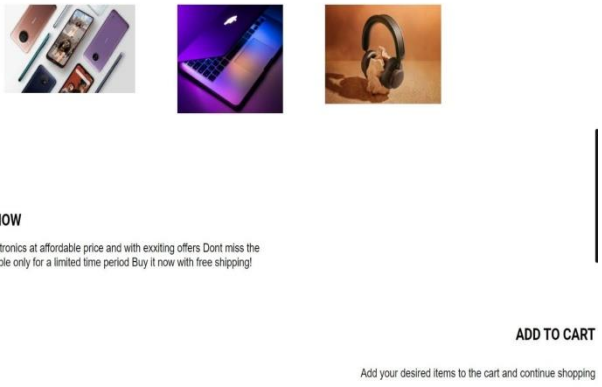
To provide the details of architectural design/framework/implementation

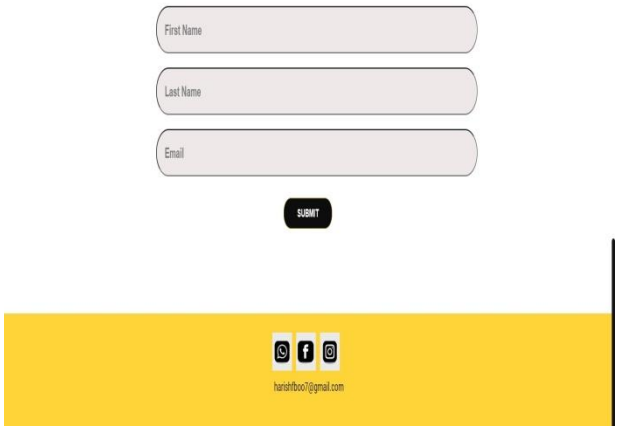
Team Members:

S No	Register No	Name	Role
1	RA2011051010043	Sidharth Kothari	**Rep/Member**
2	RA2011051010049	Harish Kumar	**Member**
3	RA2011051010059	Divyansh Mohan	**Member**

Full documentation with the coding:







File Edit Selection View Go Run Terminal Help — styles.css - Visual Studio Code

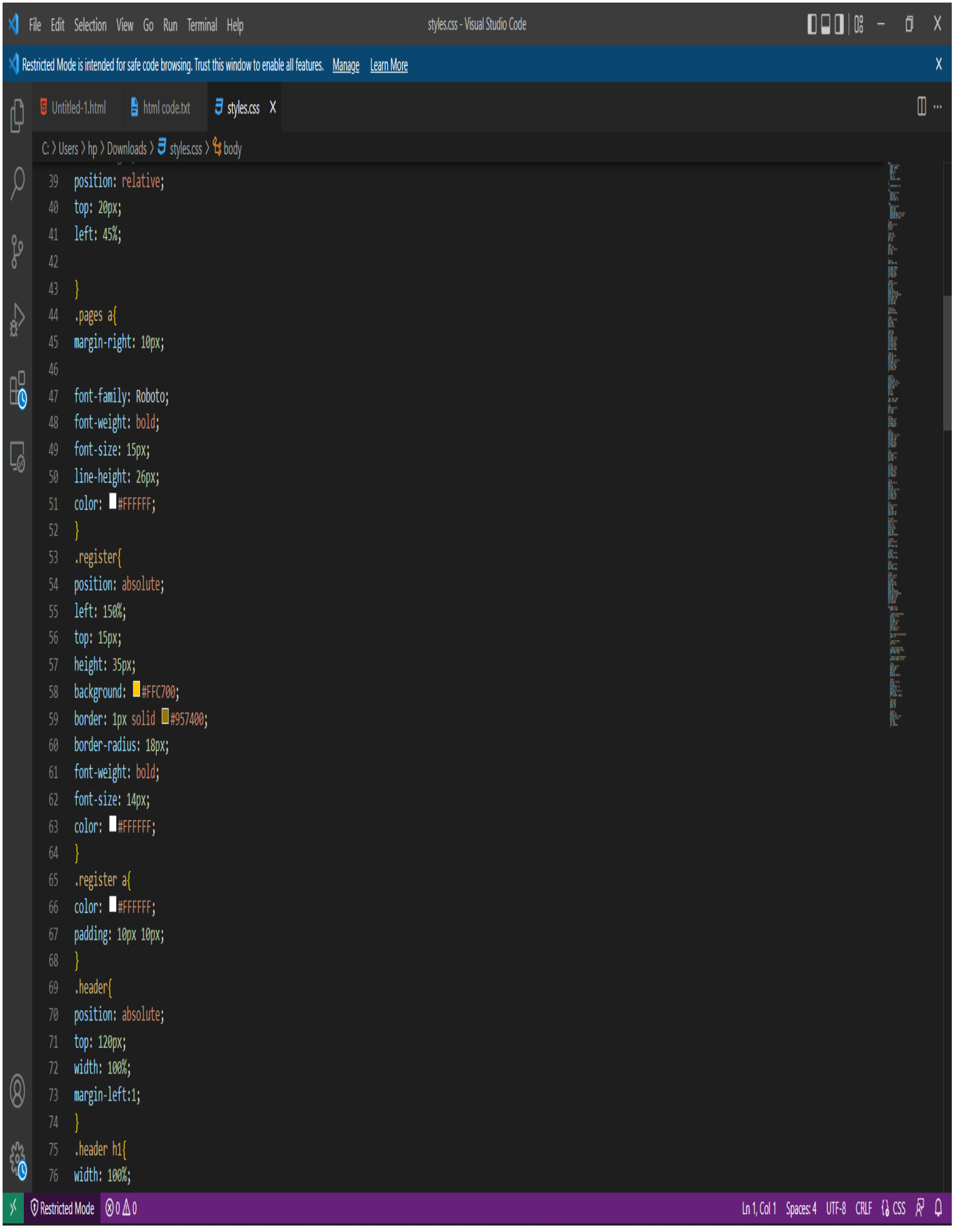
Restricted Mode is intended for safe code browsing. Trust this window to enable all features. Manage Learn More

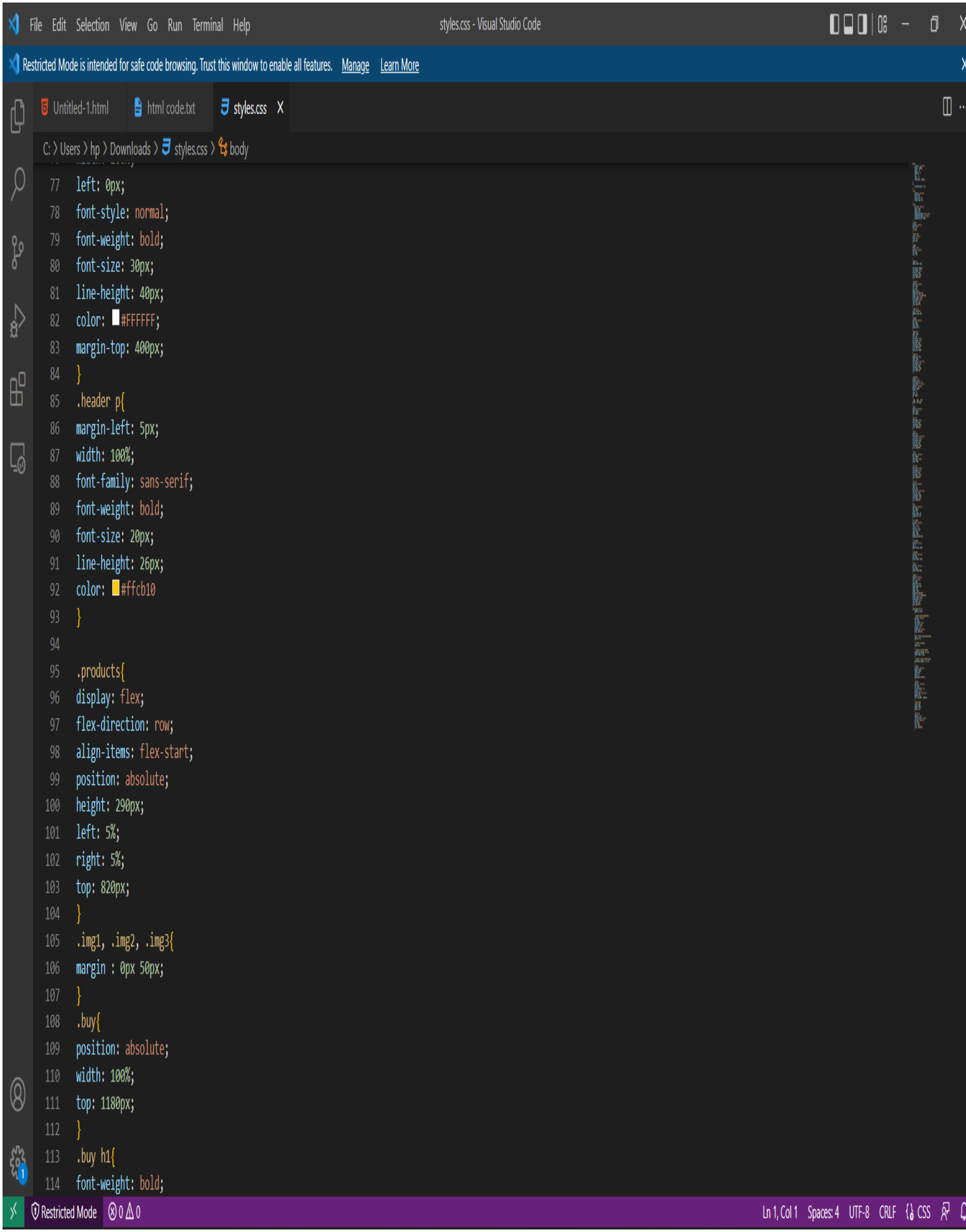
Untitled-1.html | html code.txt | styles.css

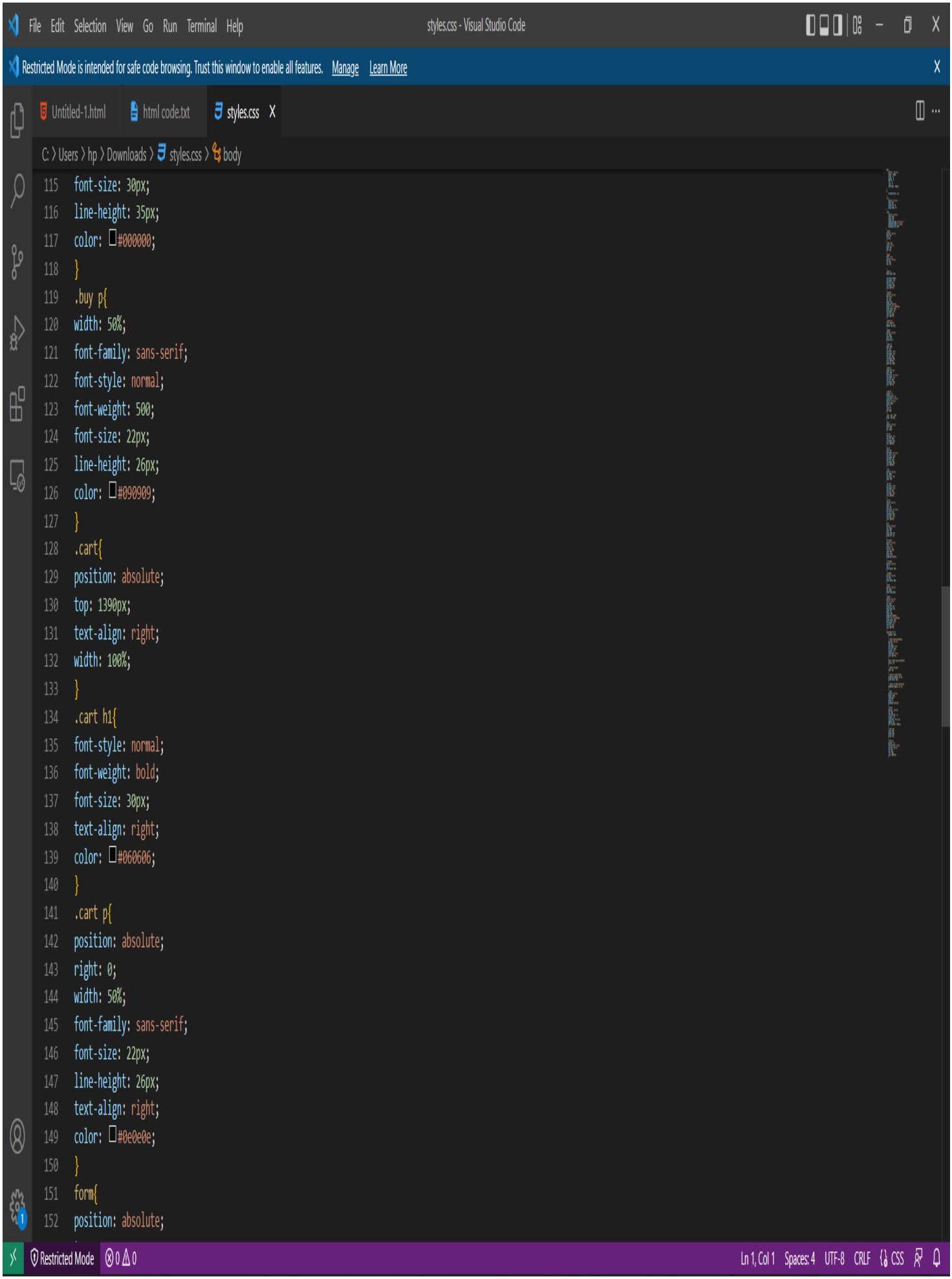
C: > Users > hp > Downloads > styles.css > body

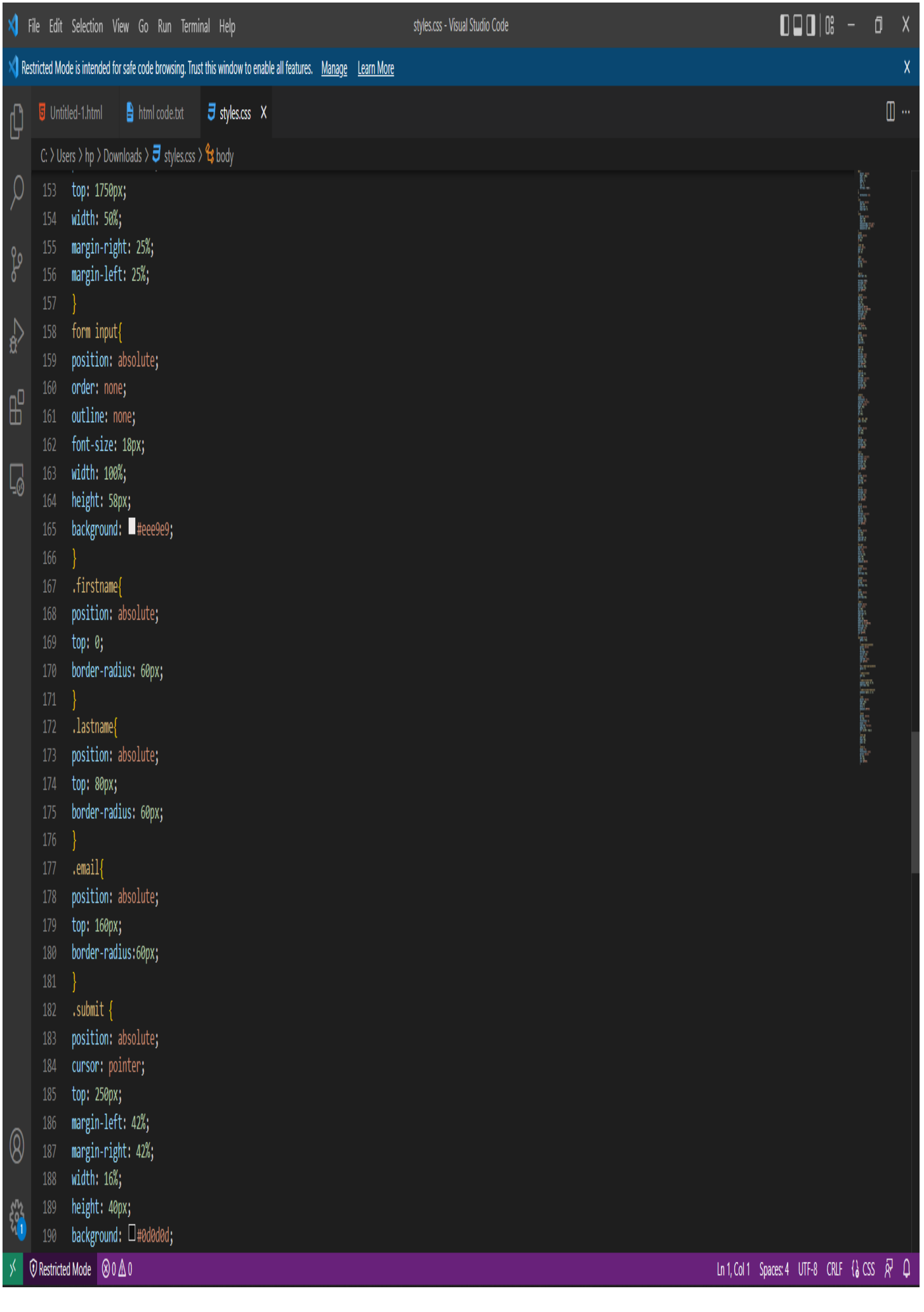
```css
body {
    position : absolute;
    height : 2300px;
    margin : 0;
    padding : 0;
    Left : 0;
    right : 0;
    font-family : Roboto ;
}
a{
    text-decoration: none;
}
.all{
    position: absolute;
    width: 60%;
    margin-left: 5%;
    margin-right: 5%;
}
.hero{
    position: absolute;
    width: 100%;
    height: 80%;
    background-image: url("g.jpg");
    background-repeat: no-repeat;
    background-size: 100%;
}
.navbar{
position: absolute;
width: 50%
top 20px;
}
.navbar img{
cursor: pointer;
width: 10%;
left: 10%;
}
.pages{
float: right;
```

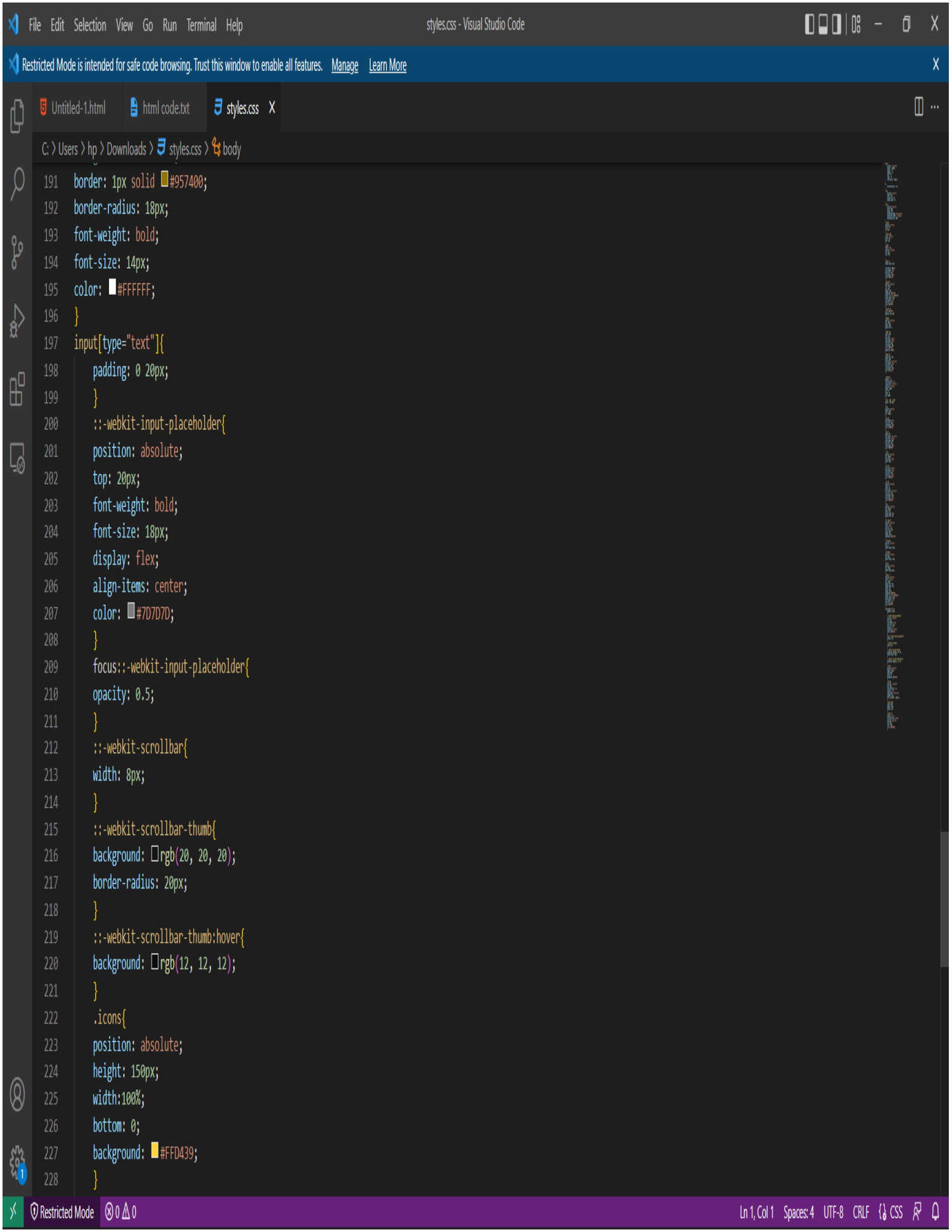
Restricted Mode 0 0 — Ln 1, Col 1 Spaces: 4 UTF-8 CRLF CSS


File Edit Selection View Go Run Terminal Help
styles.css - Visual Studio Code
Restricted Mode is intended for safe code browsing. Trust this window to enable all features. Manage Learn More
Untitled-1.html
html code.txt
styles.css
C: > Users > hp > Downloads > styles.css > body
position: relative;
top: 20px;
left: 45%;
}
.pages a{
margin-right: 10px;
font-family: Roboto;
font-weight: bold;
font-size: 15px;
line-height: 26px;
color: #FFFFFF;
}
.register{
position: absolute;
left: 150%;
top: 15px;
height: 35px;
background: #FFC700;
border: 1px solid #957400;
border-radius: 18px;
font-weight: bold;
font-size: 14px;
color: #FFFFFF;
}
.register a{
color: #FFFFFF;
padding: 10px 10px;
}
.header{
position: absolute;
top: 120px;
width: 100%;
margin-left:1;
}
.header h1{
width: 100%;
Restricted Mode
Ln 1, Col 1 Spaces: 4 UTF-8 CRLF CSS

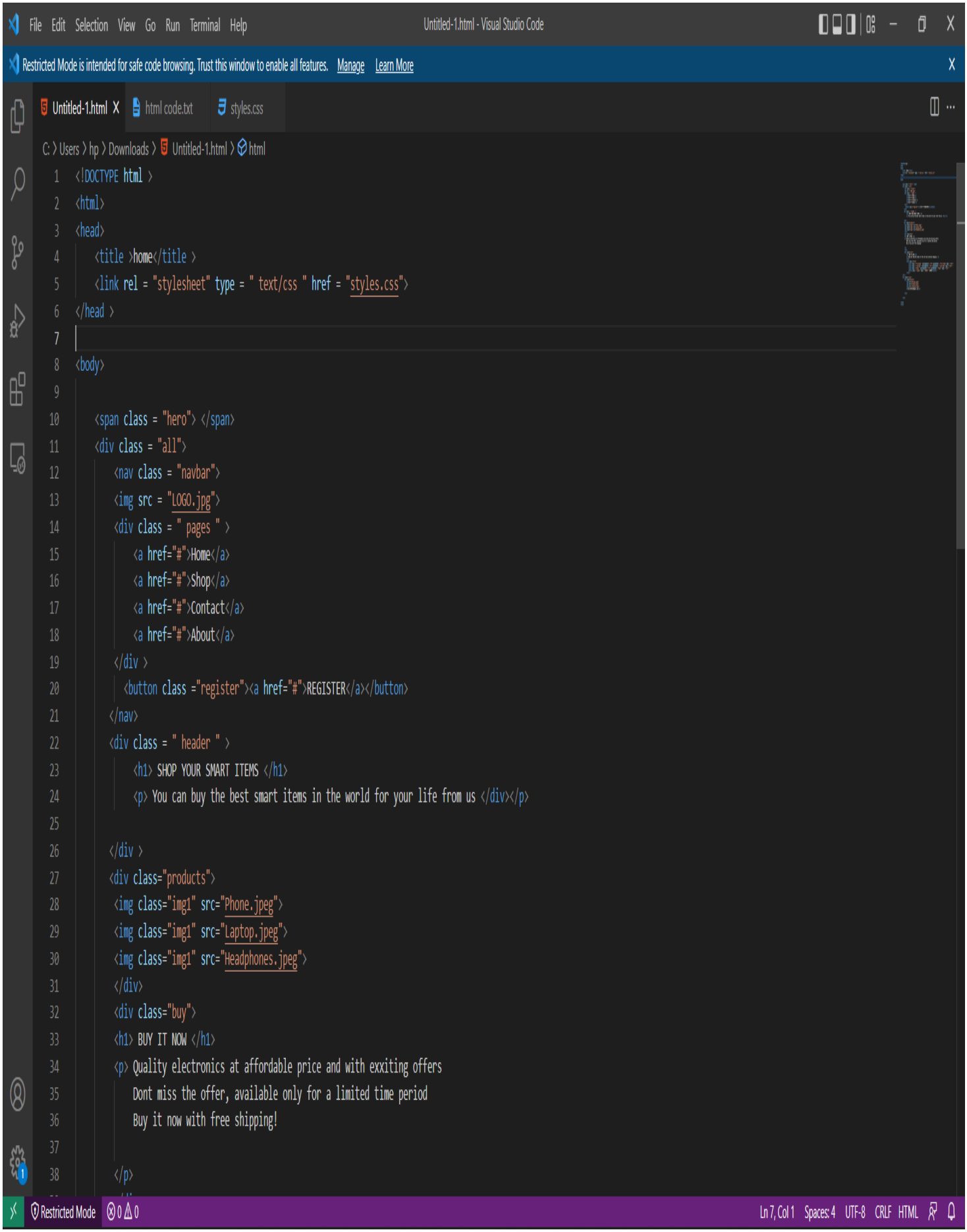

File Edit Selection View Go Run Terminal Help
styles.css - Visual Studio Code
Restricted Mode is intended for safe code browsing. Trust this window to enable all features. Manage Learn More
Untitled-1.html
html code.txt
styles.css
C: > Users > hp > Downloads > styles.css > body
left: 0px;
font-style: normal;
font-weight: bold;
font-size: 30px;
line-height: 40px;
color: #FFFFFF;
margin-top: 400px;
}
.header p{
margin-left: 5px;
width: 100%;
font-family: sans-serif;
font-weight: bold;
font-size: 20px;
line-height: 26px;
color: #ffcb10
}
.products{
display: flex;
flex-direction: row;
align-items: flex-start;
position: absolute;
height: 290px;
left: 5%;
right: 5%;
top: 820px;
}
.img1, .img2, .img3{
margin : 0px 50px;
}
.buy{
position: absolute;
width: 100%;
top: 1180px;
}
.buy h1{
font-weight: bold;
Restricted Mode
0 0
Ln 1, Col 1 Spaces: 4 UTF-8 CRLF CSS


File Edit Selection View Go Run Terminal Help
styles.css - Visual Studio Code
Restricted Mode is intended for safe code browsing. Trust this window to enable all features. Manage Learn More
Untitled-1.html
html code.txt
styles.css
C: > Users > hp > Downloads > styles.css > body
font-size: 30px;
line-height: 35px;
color: #000000;
}
.buy p{
width: 50%;
font-family: sans-serif;
font-style: normal;
font-weight: 500;
font-size: 22px;
line-height: 26px;
color: #090909;
}
.cart{
position: absolute;
top: 1390px;
text-align: right;
width: 100%;
}
.cart h1{
font-style: normal;
font-weight: bold;
font-size: 30px;
text-align: right;
color: #060606;
}
.cart p{
position: absolute;
right: 0;
width: 50%;
font-family: sans-serif;
font-size: 22px;
line-height: 26px;
text-align: right;
color: #0e0e0e;
}
form{
position: absolute;
Restricted Mode
0 0
Ln 1, Col 1 Spaces: 4 UTF-8 CRLF CSS


File Edit Selection View Go Run Terminal Help
styles.css - Visual Studio Code
Restricted Mode is intended for safe code browsing. Trust this window to enable all features. Manage Learn More
Untitled-1.html
html code.txt
styles.css
C: > Users > hp > Downloads > styles.css > body
153 top: 1750px;
154 width: 50%;
155 margin-right: 25%;
156 margin-left: 25%;
157 }
158 form input{
159 position: absolute;
160 order: none;
161 outline: none;
162 font-size: 18px;
163 width: 100%;
164 height: 58px;
165 background: #eee9e9;
166 }
167 .firstname{
168 position: absolute;
169 top: 0;
170 border-radius: 60px;
171 }
172 .lastname{
173 position: absolute;
174 top: 80px;
175 border-radius: 60px;
176 }
177 .email{
178 position: absolute;
179 top: 160px;
180 border-radius:60px;
181 }
182 .submit {
183 position: absolute;
184 cursor: pointer;
185 top: 250px;
186 margin-left: 42%;
187 margin-right: 42%;
188 width: 16%;
189 height: 40px;
190 background: #0d0d0d;
Restricted Mode
0 0
Ln 1, Col 1 Spaces: 4 UTF-8 CRLF CSS


File Edit Selection View Go Run Terminal Help
styles.css - Visual Studio Code
Restricted Mode is intended for safe code browsing. Trust this window to enable all features. Manage Learn More
Untitled-1.html
html code.txt
styles.css
C: > Users > hp > Downloads > styles.css > body
191 border: 1px solid #957400;
192 border-radius: 18px;
193 font-weight: bold;
194 font-size: 14px;
195 color: #FFFFFF;
196 }
197 input[type="text"]{
198 padding: 0 20px;
199 }
200 ::-webkit-input-placeholder{
201 position: absolute;
202 top: 20px;
203 font-weight: bold;
204 font-size: 18px;
205 display: flex;
206 align-items: center;
207 color: #7D7D7D;
208 }
209 focus::-webkit-input-placeholder{
210 opacity: 0.5;
211 }
212 ::-webkit-scrollbar{
213 width: 8px;
214 }
215 ::-webkit-scrollbar-thumb{
216 background: rgb(20, 20, 20);
217 border-radius: 20px;
218 }
219 ::-webkit-scrollbar-thumb:hover{
220 background: rgb(12, 12, 12);
221 }
222 .icons{
223 position: absolute;
224 height: 150px;
225 width:100%;
226 bottom: 0;
227 background: #FFD439;
228 }
Restricted Mode
Ln 1, Col 1 Spaces: 4 UTF-8 CRLF CSS


File Edit Selection View Go Run Terminal Help
styles.css - Visual Studio Code
Restricted Mode is intended for safe code browsing. Trust this window to enable all features. Manage Learn More
Untitled-1.html
html code.txt
styles.css
C: > Users > hp > Downloads > styles.css > body
.button{
position : absolute;
top: 20px;
flex-direction: row;
display: flex;
align-items: flex-start;
padding: 0px;
left: calc(50% - 190px/2)
}
.button img{
width: 50px;
height: 50px;
margin: 5px;
}
.button p{
display: flex;
flex-direction: column;
position: absolute;
top: 50px;
left: 10px;
color: #080808;
}
Restricted Mode
Ln 1, Col 1
Spaces: 4
UTF-8
CRLF
CSS


File Edit Selection View Go Run Terminal Help
Untitled-1.html - Visual Studio Code
Restricted Mode is intended for safe code browsing. Trust this window to enable all features. Manage Learn More
Untitled-1.html
html code.txt
styles.css
C: > Users > hp > Downloads > Untitled-1.html > html
<!DOCTYPE html >
<html>
<head>
<title >home</title >
<link rel = "stylesheet" type = " text/css " href = "styles.css">
</head >
<body>

<nav class = "navbar">
<img src = "LOGO.jpg">

Home
Shop
Contact
About

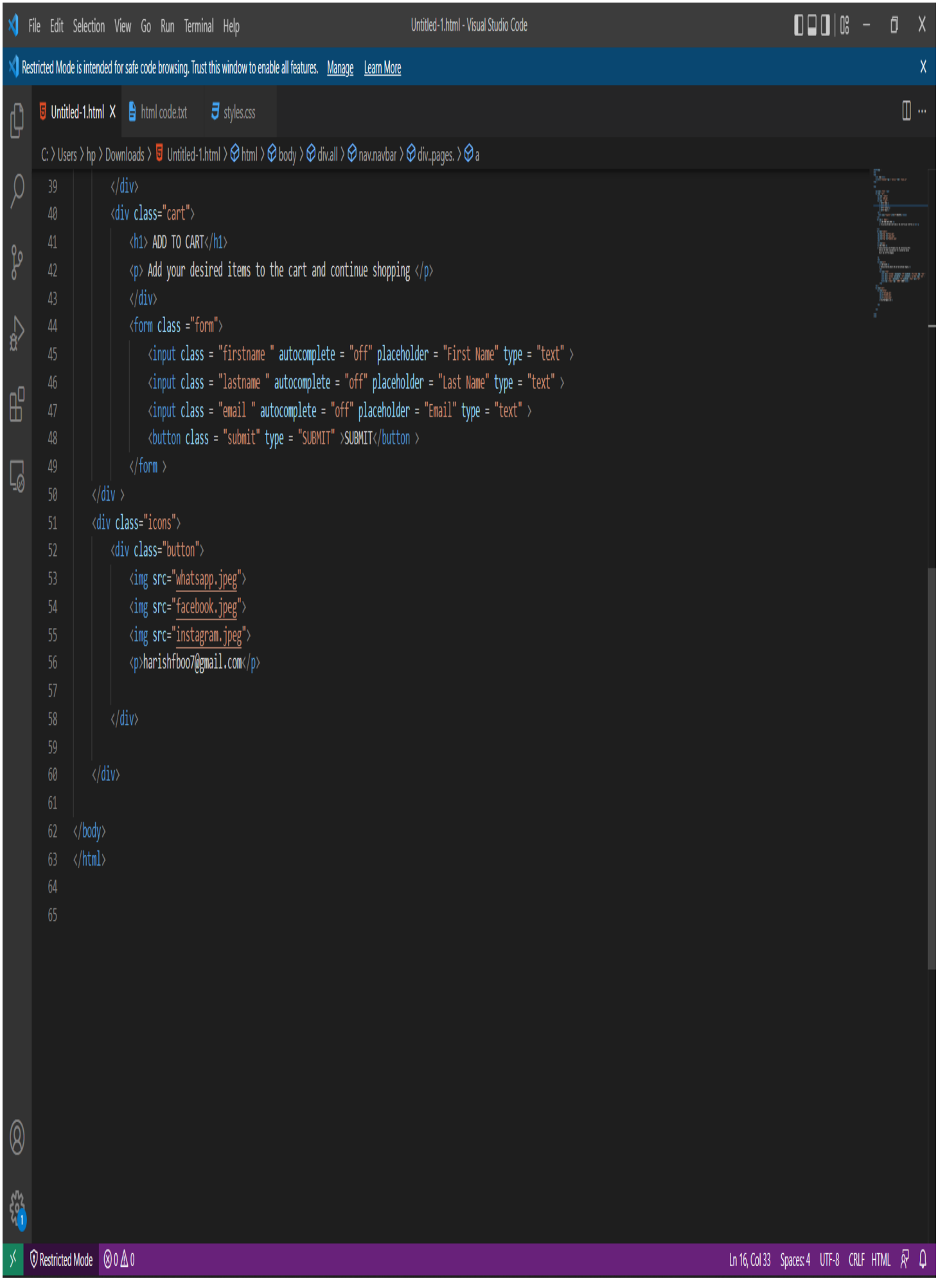
<button class ="register">REGISTER</button>
</nav>

<h1> SHOP YOUR SMART ITEMS </h1>
 You can buy the best smart items in the world for your life from us

<img class="img1" src="Phone.jpeg">
<img class="img1" src="Laptop.jpeg">
<img class="img1" src="Headphones.jpeg">

<h1> BUY IT NOW </h1>
 Quality electronics at affordable price and with exxiting offers
Dont miss the offer, available only for a limited time period
Buy it now with free shipping!

Restricted Mode
0 0
Ln 7, Col 1 Spaces: 4 UTF-8 CRLF HTML


File Edit Selection View Go Run Terminal Help
Untitled-1.html - Visual Studio Code
Restricted Mode is intended for safe code browsing. Trust this window to enable all features. Manage Learn More
Untitled-1.html
html code.txt
styles.css
C: > Users > hp > Downloads > Untitled-1.html > html > body > div.all > nav.navbar > div.pages. > a

<h1> ADD TO CART</h1>
 Add your desired items to the cart and continue shopping

<form class ="form">
<input class = "firstname " autocomplete = "off" placeholder = "First Name" type = "text" >
<input class = "lastname " autocomplete = "off" placeholder = "Last Name" type = "text" >
<input class = "email " autocomplete = "off" placeholder = "Email" type = "text" >
<button class = "submit" type = "SUBMIT" >SUBMIT</button >
</form >

<img src="whatsapp.jpeg">
<img src="facebook.jpeg">
<img src="instagram.jpeg">
harishfboo7@gmail.com

</body>
</html>
Restricted Mode
0 0
Ln 16, Col 33 Spaces: 4 UTF-8 CRLF HTML

CONCLUSION

Technology has made significant progress over the years to provide consumers a better online shopping experience and will continue to do so for years to come. With the rapid growth of products and brands, people have speculated that online shopping will overtake in-store shopping. While this has been the case in some areas, there is still demand for brick and mortar stores in market areas where the consumer feels more comfortable seeing and touching the product being bought. However, the availability of online shopping has produced a more educated consumer that can shop around with relative ease without having to spend a large amount of time. In our website the user is provided with the review system also i.e. if user wants to buy a product (Laptop, Phones and others electronic gadget) but he don't know which one to buy at that time he is provided with the link which elaborate the correct functionality of the particular product.