MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR
(A Govt. Aided UGC Autonomous & NAAC Accredited Institute Affiliated to RGPV, Bhopal)

Final Year Internship Report

On

Academic Intern at Persistent Systems

Submitted By:

CHETNA MAHAJAN
0901CS181032

Faculty Mentor:

Prof. Mir Shahnawaz Ahmad
Computer science and engineering

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE
GWALIOR - 474005 (MP) est. 1957

MAY-JUNE 2022

Internship Certificate:

Persistent

PSL/HR/Cert-Add/2022
May 18, 2022

TO WHOMSOEVER IT MAY CONCERN

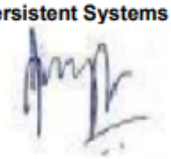
This is to certify that **Ms. Chetna Mahajan** (Employee Code **47124**) is employed with us since **12 January 2022**. Her designation is **Intern**.

According to the office records, her local and permanent addresses are :

Local Address	**Permanent Address**
818,B-block anand nagar gwalior, Gwalior - 474012 Madhya Pradesh - India	818,B-block anand nagar gwalior, Gwalior - 474012 Madhya Pradesh - India

This certificate is being issued on her request as a proof of employment and residence For verification purpose.

For Persistent Systems Ltd.



Manisha Tapaswi
Senior General Manager - Human Resources

MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR
(A Govt. Aided UGC Autonomous & NAAC Accredited Institute Affiliated to RGPV, Bhopal)

CERTIFICATE

This is certified that **Chetna Mahajan** (0901cs181032) has submitted the Internship report titled **Academic Intern** of the work he has done under the mentorship of **Prof. Mir Shahnawaz Ahmad**, in partial fulfilment of the requirement for the award of degree of Bachelor of Technology in Computer Science and Engineering from Madhav Institute of Technology and Science, Gwalior.

27/05/22

Prof. Mir Shahnawaz Ahmad

Faculty Mentor
Computer Science and Engineering

27/05/22

Dr. Manish Dixit

Professor and Head,
Computer Science and Engineering

Dr. Manish Dixit
Professor & HOD
Department of CSE
M.I.T.S. Gwalior

MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR
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DECLARATION

I hereby declare that the work being presented in this Internship report, for the partial fulfilment of requirement for the award of the degree of Bachelor of Technology in CSE at Madhav Institute of Technology & Science, Gwalior is an authenticated and original record of my work under the mentorship of **Prof. Mir Shahnawaz Ahmad**, Department of CSE.

I declare that I have not submitted the matter embodied in this report for the award of any degree or diploma anywhere else.

Chetna Mahajan
0901CS181032
IV Year,
Computer Science and Engineering

MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR
(A Govt. Aided UGC Autonomous & NAAC Accredited Institute Affiliated to RGPV, Bhopal)

ACKNOWLEDGEMENT

The full semester internship has proved to be pivotal to my career. I am thankful to my institute, **Madhav Institute of Technology and Science** to allow me to continue my disciplinary/interdisciplinary internship as a curriculum requirement, under the provisions of the Flexible Curriculum Scheme (based on the AICTE Model Curriculum 2018), approved by the Academic Council of the institute. I extend my gratitude to the Director of the institute, **Dr. R. K. Pandit** and Dean Academics, **Dr. Manjaree Pandit** for this.

I would sincerely like to thank my department, **Department of Computer Science and Engineering, for allowing** me to explore this internship. I humbly thank **Dr. Manish Dixit**, Professor and Head, Department of Computer Science and Engineering, for his continued support during the course of this engagement, which eased the process and formalities involved.

I am sincerely thankful to my faculty mentors. I am grateful to the guidance of **Prof. Mir Shahnawaz Ahmad**, Department of Computer Science and Engineering, for his continued support and close mentoring throughout the internship. I am also very thankful to the faculty and staff of the department.

Chetna Mahajan
0901CS181032
IV Year,
Computer Science and Engineering

ABSTRACT

In the present era technology has been the main concern because it is the one which connect one to other and has changed the lives of our and for this, we need software and applications to run on platform. Here I have assigned as Software Engineer Intern. My internship is basically divided into two phases phase 1 and phase 2 and right now my phase-1 training is going on in which I have learnt about different modules which form the key components to build any software and then in phase-2 training I will undergo the process to learn advance module and then the project will be allocate.

TABLE OF CONTENTS

Chapter 1: INTRODUCTION

ABOUT THE COMPANY

Persistent Systems is an Indian multinational technology services company which was found in 1990 by Anand Deshpande. The current CEO of the company is Sandeep Kalra. Headquarters are located in Pune. It is providing its services in Digital Strategy and Design, software product Engineering, Cloud & Infrastructure and many more to different domains life science, healthcare, financial, telecom & Media and working with the mission of "Complete Client Success".

Our placement was on campus and company also provided the pre-joining Internship for 6 months.

So, it was started from 12-January and will be till 12-July. It is designed as four months of training and two months of project.

Some of their partners are IBM, MICROSOFT, REDHAT, AWS etc.

My Role in Company:

As I Intern as Software Engineer, I have to undergo through learning process which includes 7 modules to learn that are Git, SQL, OOPs, HTML, Maven and JavaScript, Spring. After which I will be allocated to advance training phase and a project

Objective:

Objective of this Internship is to make its students professional in the terms of working culture, environment and professional work. Here we have learnt of to give constructive feedback, company's overview and company's work lecture.

Plus, we are learnt many technical skills so as to be prepared at the time of project making.

Its scope is currently only to make us prepared for projects and the different assessments they will take as a verification check for our completion. First it would have some objective tests of cut off as 80% and then few subjective tests thereafter clearing them in three attempts.

Outcomes of Internship:

Learnt and explored various technologies and participated in various team activities to develop leadership skills and communication skills.

Idea behind these activities is to develop the teamwork idea in the mindset.

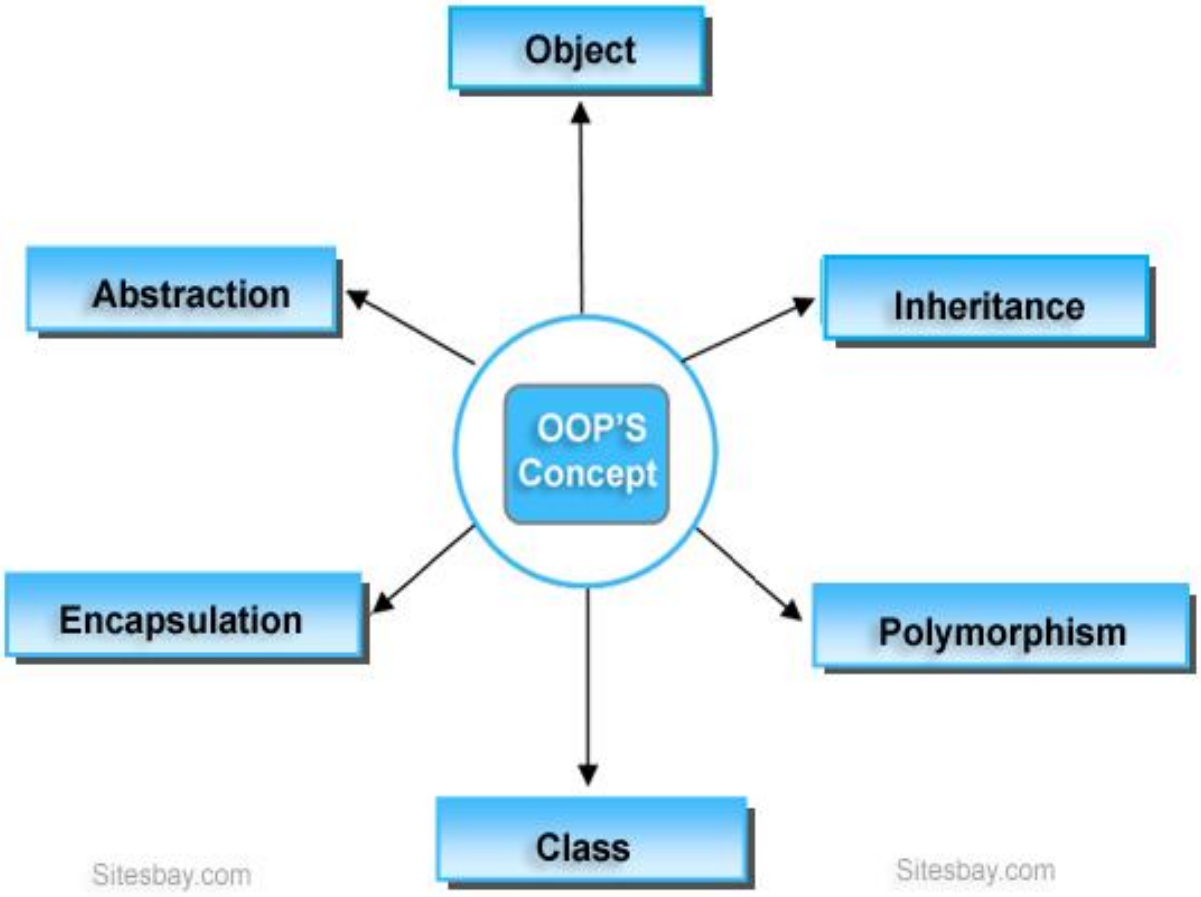
technologies exp during internship:

- **OOPS**
- **SQL**
- **GIT**
- **HTML**
- **JAVASCRIPTS**
- **MAVEN**
- **SPRING**

Chapter 2: Technologies Experienced during Internship

1. OOPS:

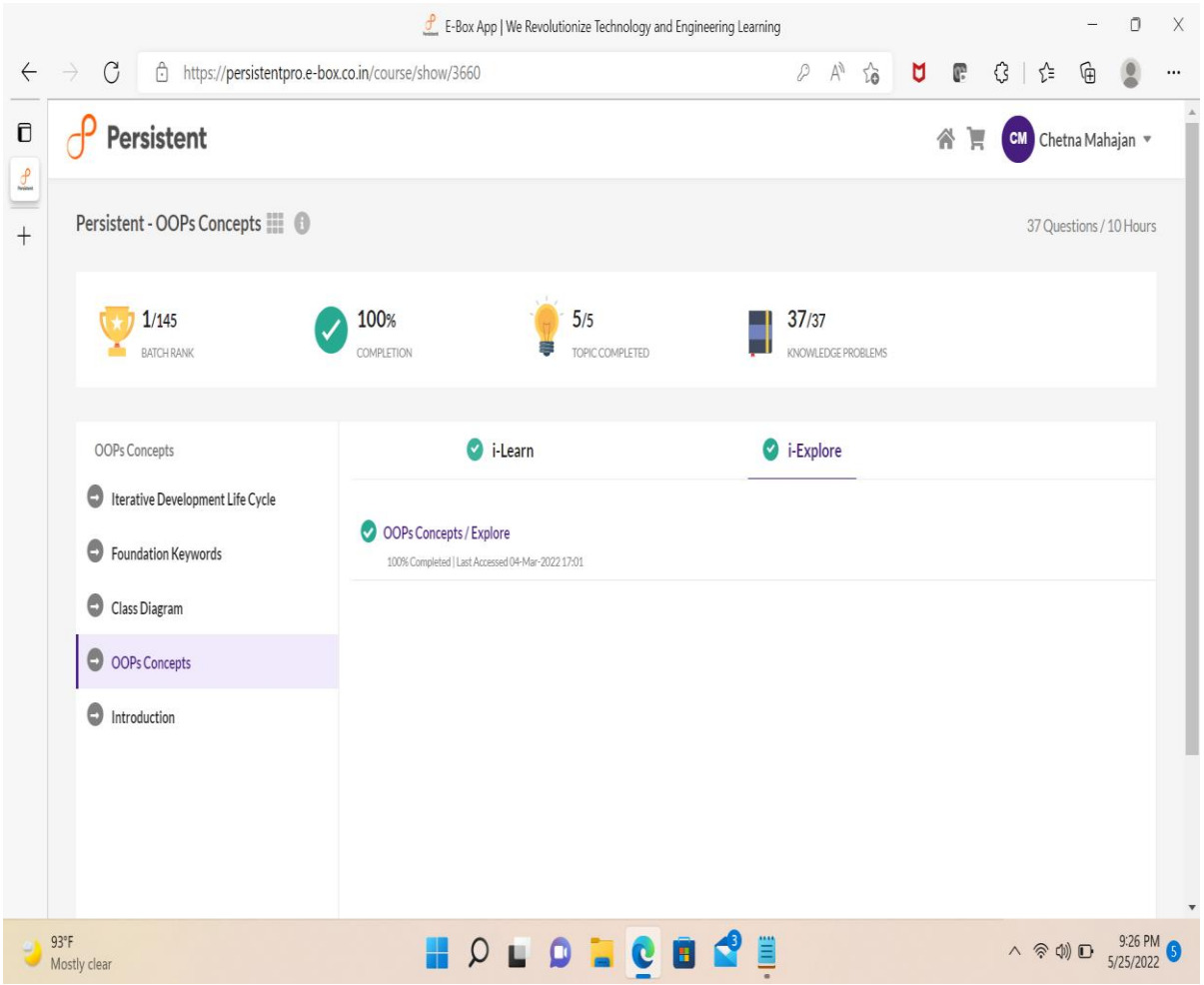
Object-oriented programming (OOP) is a computer programming model that organizes software design around data, or objects, rather than functions and logic. An object can be defined as a data field that has unique attributes and behaviour.
We were first introduced by the oops concept and its pillars- Polymorphism, Inheritance, Data Abstraction and Data Encapsulation.



Advantages of OOPs (Object-Oriented Programming System):

- OOPs Concepts offer easy to understand and a clear modular structure for programs.
- Objects created for Object-Oriented Programs can be reused in other programs. Thus it saves significant development cost.
- Large programs are difficult to write, but if the development and designing team follow OOPS concepts, then they can better design with minimum flaws.

- It enhances program modularity because every object exists independently.

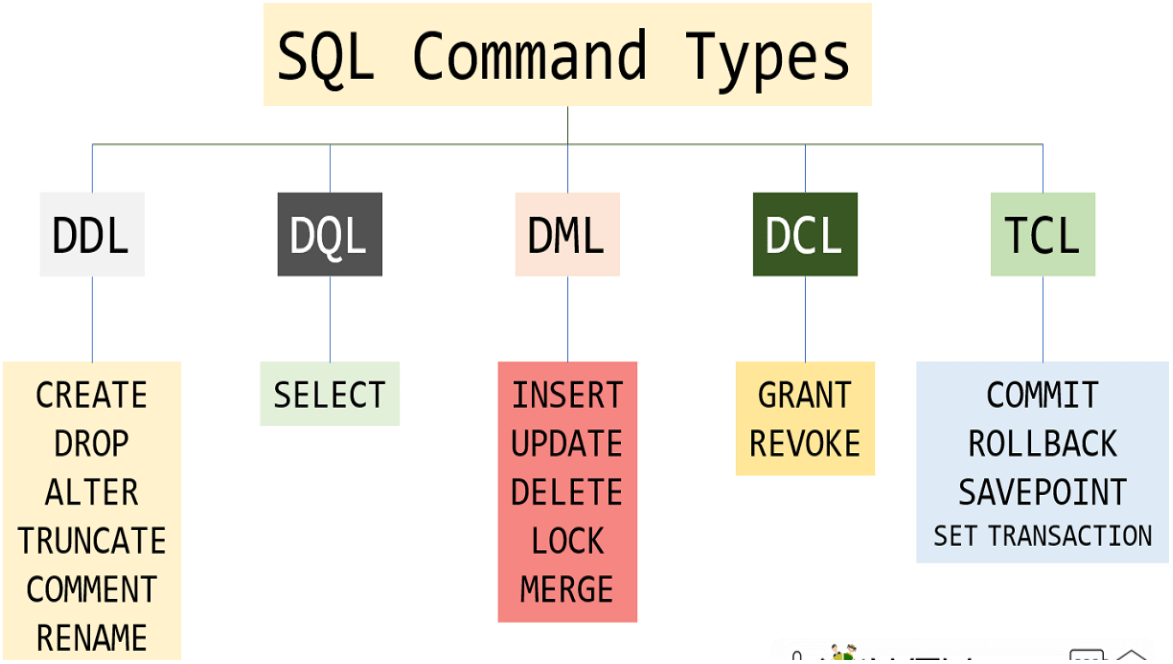


2. SQL:

SQL is a database computer language designed for the retrieval and management of data in a relational database. SQL stands for Structured Query Language.

RDBMS RDBMS stands for Relational Database Management System. RDBMS is the basis for SQL, and for all modern database systems such as MS SQL Server, IBM DB2, Oracle, MySQL, and Microsoft Access.

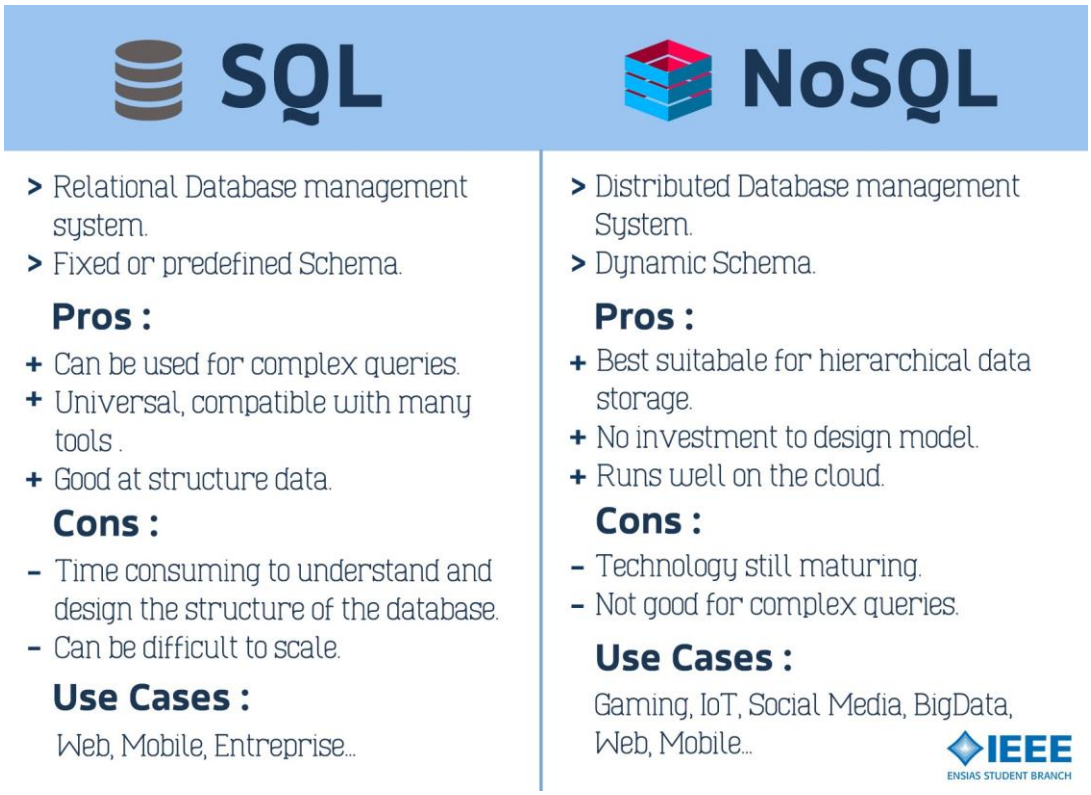
The data in RDBMS is stored in database objects called tables. A table is a collection of related data entries and it consists of columns and rows.



Some of the SQL commands:-

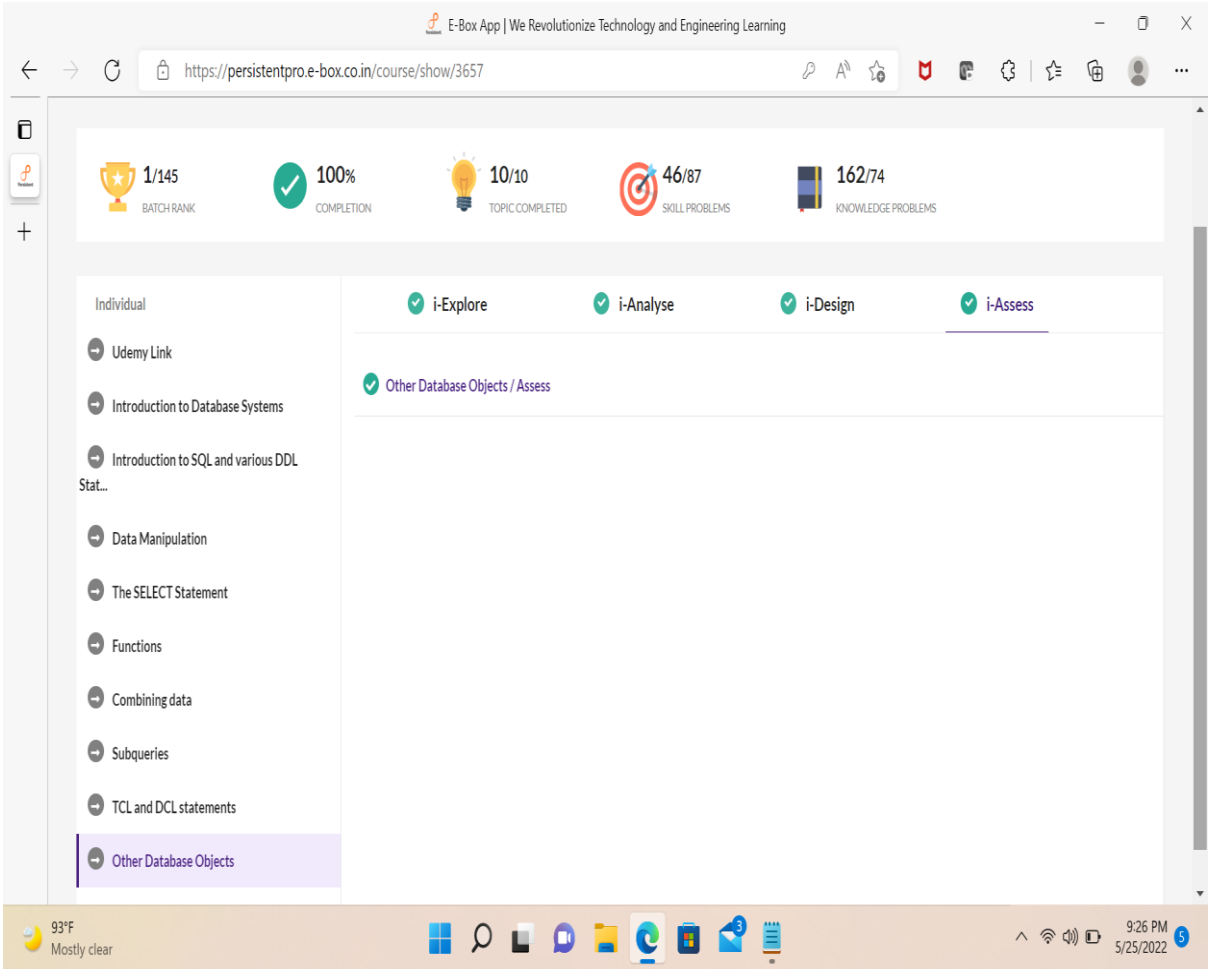
- select * from Employee
- drop table dept_6420
- Create Table dept_6420(Dept_id number(5) PRIMARY KEY, Dept_name varchar2(20), Locatn_id number(3));
- desc dept_6420
- -- to add new column===Alter table emp_6420 Add Salary number(8,2)
- -- to modify the column size====ALTER table emp_6420 MODIFY Emailid varchar2(50);

- -- to drop the column===ALTER table emp_6420drop column gender;
- -- to rename column name==Alter table emp_6420 rename column emailid to email_id



- **Applications of SQL:**

- Allows users to access data in the relational database management systems.
- Allows users to describe the data. Allows users to define the data in a database and manipulate that data.
- Allows to embed within other languages using SQL modules, libraries & pre-compilers. Allows users to create and drop databases and tables.
- Allows users to create view, stored procedure, functions in a database.
- Allows users to set permissions on tables, procedures and views.



3. GIT:

"Git is a free and open-source distributed version control system designed to handle everything from small to very large projects with speed and efficiency."

1.Open Source-

Git is an **open-source tool**. It is released under the **GPL** (General Public License) license.

2. Scalability-

Git is **scalable**, which means when the number of users increases, the Git can easily handle such situations.

3. Security-

Git is secure. It uses the **SHA1 (Secure Hash Function)** to name and identify objects within its repository. Files and commits are checked and retrieved by its checksum at the time of checkout.

4. Speed-

Git is very **fast**, so it can complete all the tasks in a while. Most of the git operations are done on the local repository, so it provides a **huge speed**. Also, a centralized version control system continually communicates with a server somewhere.

Advantages:

- Fast Processing: As compared to other software or apps, it runs more quickly. Both the server as well as local operations are performed easily with high speed.
- Flexible: The work-flow operations in the system are flexible in nature. It is possible to make a choice from the work-flow options.
- Easy Merging: It is possible to start merging another code in the system. It is a great way for the developers to interact with each other and add to their contributions. No long procedure is required to follow during the merging time.

Disadvantages:

- Not Suitable for Binary Files:- It fails with the presence of files having binary data. It starts processing every work slowly. Any file which doesn't support textual data is not compatible with this technology. No Sub-Trees Checkout Possible:- In this system, it is not supported to check the sub-trees. For checking each particular project, the need to create multiple repositories with pre-package arise.

Distributed Version Control System:

In a distributed version control system, there will be one or more servers and many collaborators similar to the centralized system. But the difference is, not only do they check out the latest version, but each collaborator will have an exact copy (mirroring) of the main repository(including its entire history) on their local machines. Each user has their own repository and a working copy. This is very useful because even if the server crashes we would not lose everything as several copies are residing in several other computers.

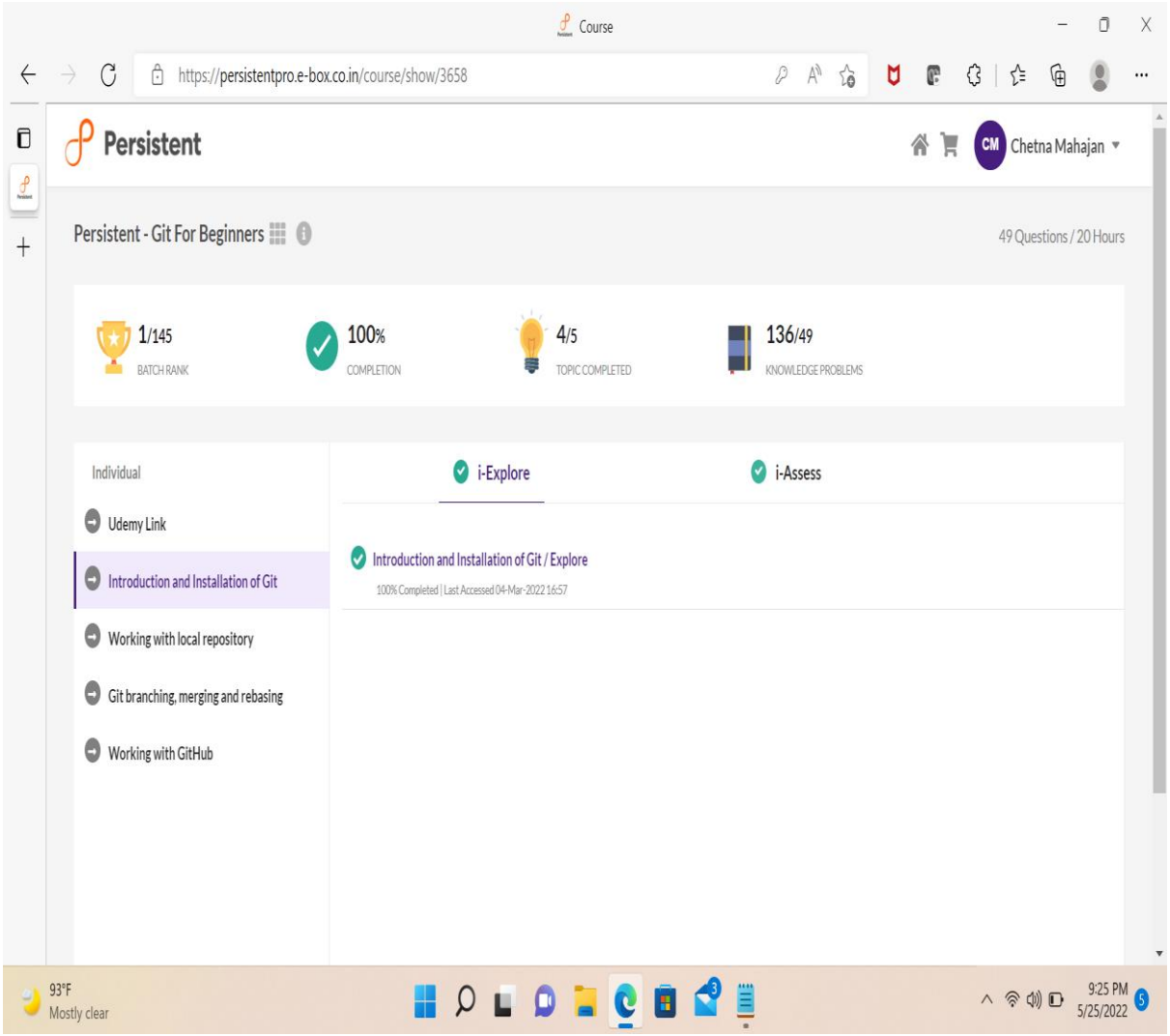
Version Control System(VCS) :

Version control system also called as source control, it is the practice of managing changes and tracking of the software code. Vcs are software tools manage changes to source code over time which help software teams. As development environments have accelerated, vcs help in work faster and smarter. They are especially DevOps teams since they help them to increase successful deployments and reduce development time. Vcs has a special kind of database in which they keeps track of every modification to the code .

Working with Git Local :

Following are the actions Git is able to Perform locally :-

- Creating local repository, adding files, and committing changes
- Viewing log and differences
- Staging changes as multiple changes
- Deleting and renaming files o Ignoring Files
- Undoing/redoing changes to the local copy and repository
- Cleaning the working copy.



GIT COMMANDS:

- **Git config command-** This command configures the user. The Git config command is the first and necessary command used on the Git command line. This command sets the author's name and email address to be used with your commits. Git config is also used in other scenarios.

- **Git Init command-** This command is used to create a local repository.

- **Git clone command-** This command is used to make a copy of a repository from an existing URL. If I want a local copy of my repository from GitHub, this command allows creating a local copy of that repository on your local directory from the repository URL.

- **Git add command-** This command is used to add one or more files to staging (Index) area.

- **Git commit command-** Commit command is used in two scenarios. They are as follows.

- **Git commit –m-** This command changes the head. It records or snapshots the file permanently in the version history with a message.

- **Git commit –a-** This command commits any files added in the repository with git add and also commits any files you've changed since then.

4. JAVA SCRIPTS:

JavaScript is a light-weight object-oriented programming language which is used by several websites for scripting the webpages.
It is an interpreted, full-fledged programming language that enables dynamic interactivity on websites when applied to an HTML document.

What is HTML?
HTML stands for Hyper Text Markup Language. HTML helps you structure your page into elements such as paragraphs, sections, headings, navigation bars, and so on. HTML provides the basic structure of sites, which is enhanced and modified by other technologies like CSS and JavaScript.

What is CSS ?
CSS stands for Cascading Style Sheets, and you use it to improve the appearance of a web page. By adding thoughtful CSS styles, you make your page more attractive and pleasant for the end user to view and use, so CSS is a design language that you use to make your web page look nice and presentable.

What is Javascript ?
JavaScript is used to control the behavior of different elements.

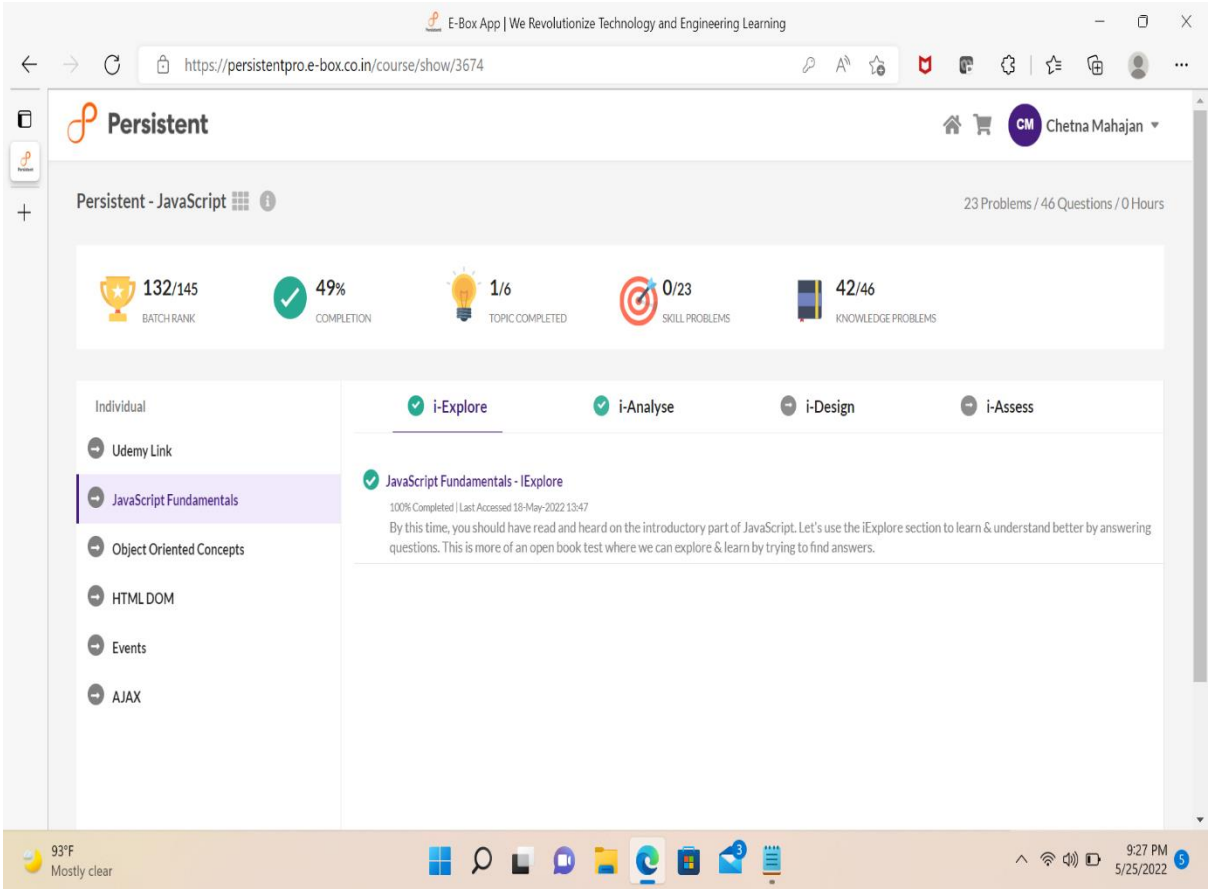
HTML _ List Tag

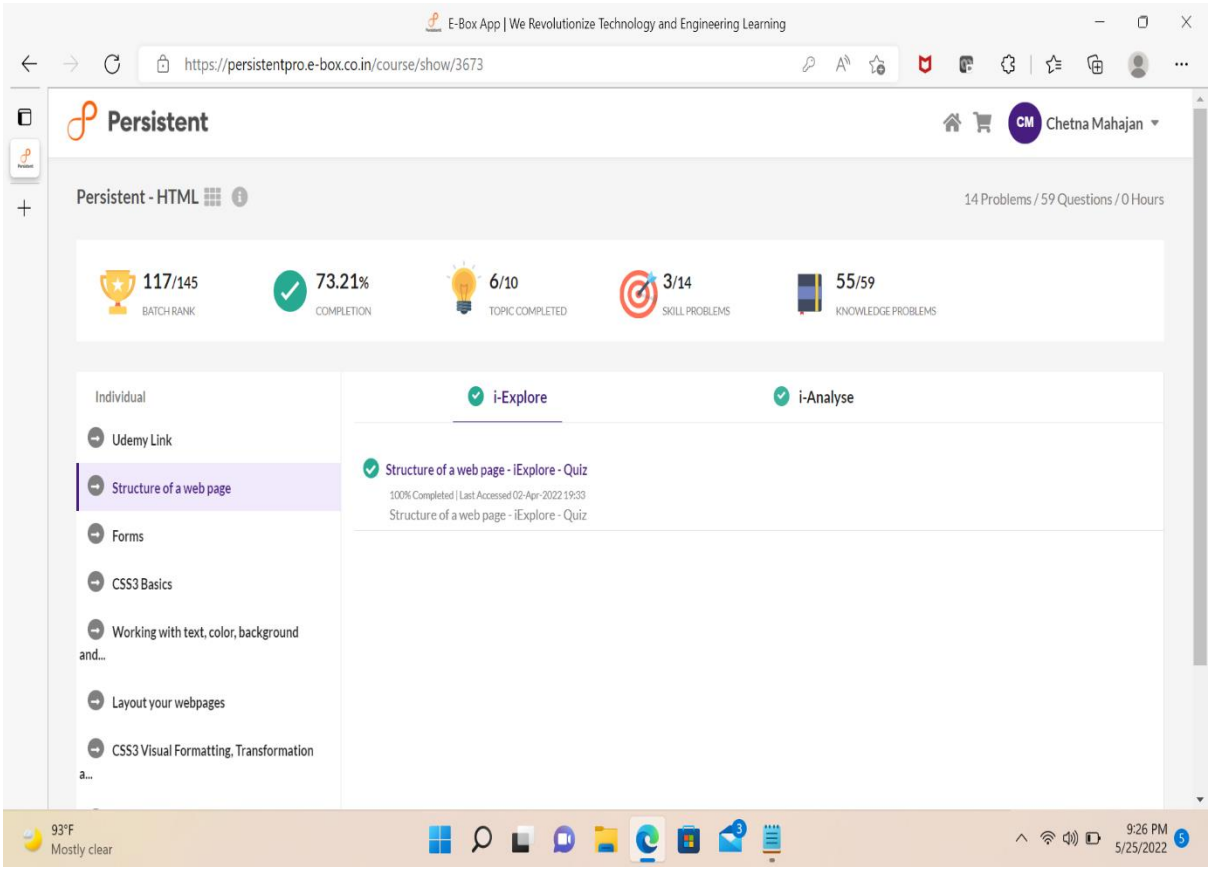
List Tag	Example	Describe
<ul type="circle"> - Un-Ordered List - Ordered List - Defination List 	•Un-Ordered List •Ordered List •Defination List	Making An Un-Ordered List Within define a type. Type may be circle, square, arrow, round & so on.
  - Un-Ordered List - Ordered List - Defination List 	1. Un-Ordered List. 2. Ordered List. 3. Defination List.	Making An Ordered List.
<dl> <dt>List Tag:</dt> <dd>_Un-Ordered List.</dd> <dd>_Ordered List</dd> <dt>Other:</dt> <dd>_Defination List </dl>	List Tag: _Un-Ordered List. _Ordered List. Other: _Defination List.	Create a Defination List by use of dl. <dt> define Item of the List. <dd> define describe the item.

Event	Description
onchange	An HTML element has been changed
onclick	The user clicks an HTML element
onmouseover	The user moves the mouse over an HTML element
onmouseout	The user moves the mouse away from an HTML element
onkeydown	The user pushes a keyboard key
onload	The browser has finished loading the page

Application of JavaScript:

- Client-side validation,
- Dynamic drop-down menus,
- Displaying date and time,
- Displaying pop-up windows and dialog boxes (like an alert dialog box, confirm dialog box and prompt dialog box),
- Displaying clocks etc.


E-Box App | We Revolutionize Technology and Engineering Learning
https://persistentpro.e-box.co.in/course/show/3674
Persistent
CM Chetna Mahajan
Persistent - JavaScript
23 Problems / 46 Questions / 0 Hours
132/145 BATCH RANK
49% COMPLETION
1/6 TOPIC COMPLETED
0/23 SKILL PROBLEMS
42/46 KNOWLEDGE PROBLEMS
Individual
Udemy Link
JavaScript Fundamentals
Object Oriented Concepts
HTML DOM
Events
AJAX
i-Explore
i-Analyse
i-Design
i-Assess
JavaScript Fundamentals - IExplore
100% Completed | Last Accessed 18-May-2022 13:47
By this time, you should have read and heard on the introductory part of JavaScript. Let's use the iExplore section to learn & understand better by answering questions. This is more of an open book test where we can explore & learn by trying to find answers.
93°F
Mostly clear
9:27 PM
5/25/2022


E-Box App | We Revolutionize Technology and Engineering Learning
https://persistentpro.e-box.co.in/course/show/3673
Persistent
CM Chetna Mahajan
Persistent - HTML
14 Problems / 59 Questions / 0 Hours
117/145 BATCH RANK
73.21% COMPLETION
6/10 TOPIC COMPLETED
3/14 SKILL PROBLEMS
55/59 KNOWLEDGE PROBLEMS
Individual
Udemy Link
Structure of a web page
Forms
CSS3 Basics
Working with text, color, background and...
Layout your webpages
CSS3 Visual Formatting, Transformation a...
i-Explore
i-Analyse
Structure of a web page - iExplore - Quiz
100% Completed | Last Accessed 02-Apr-2022 19:33
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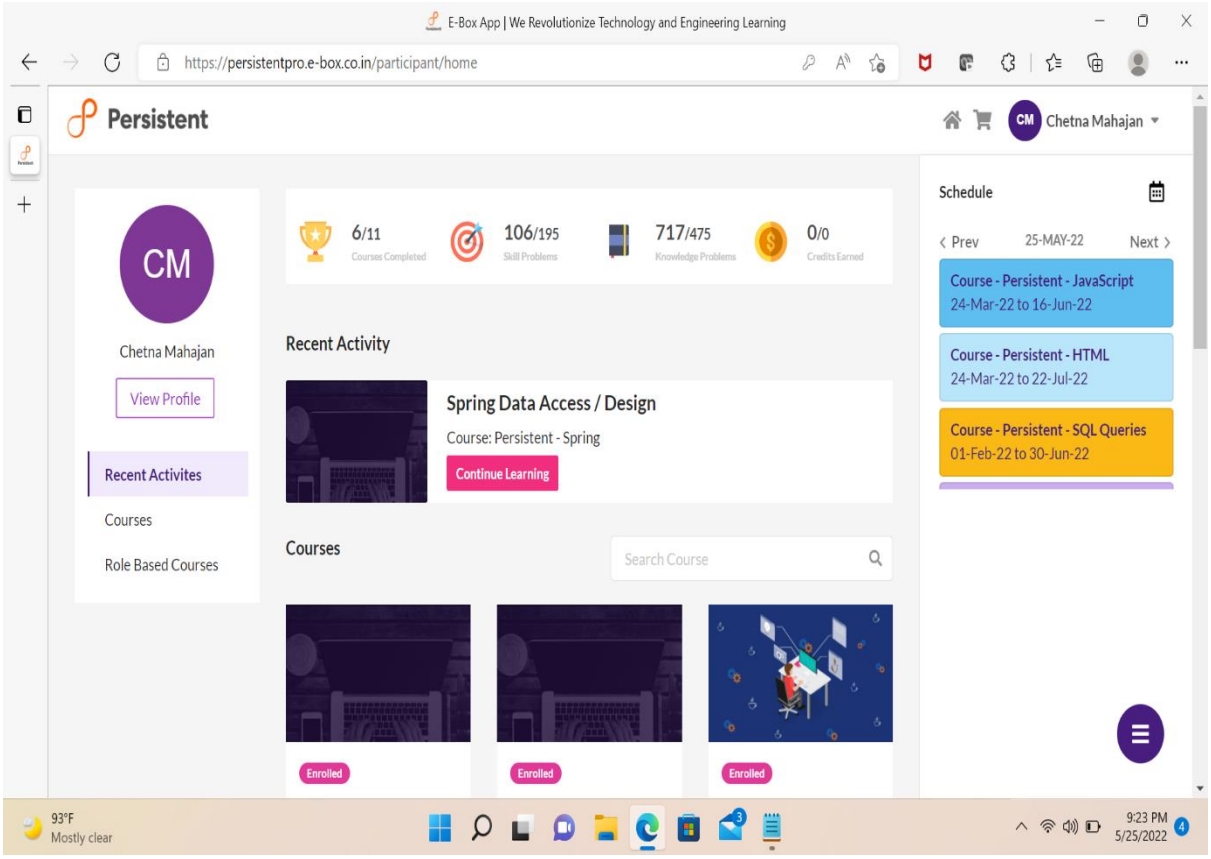
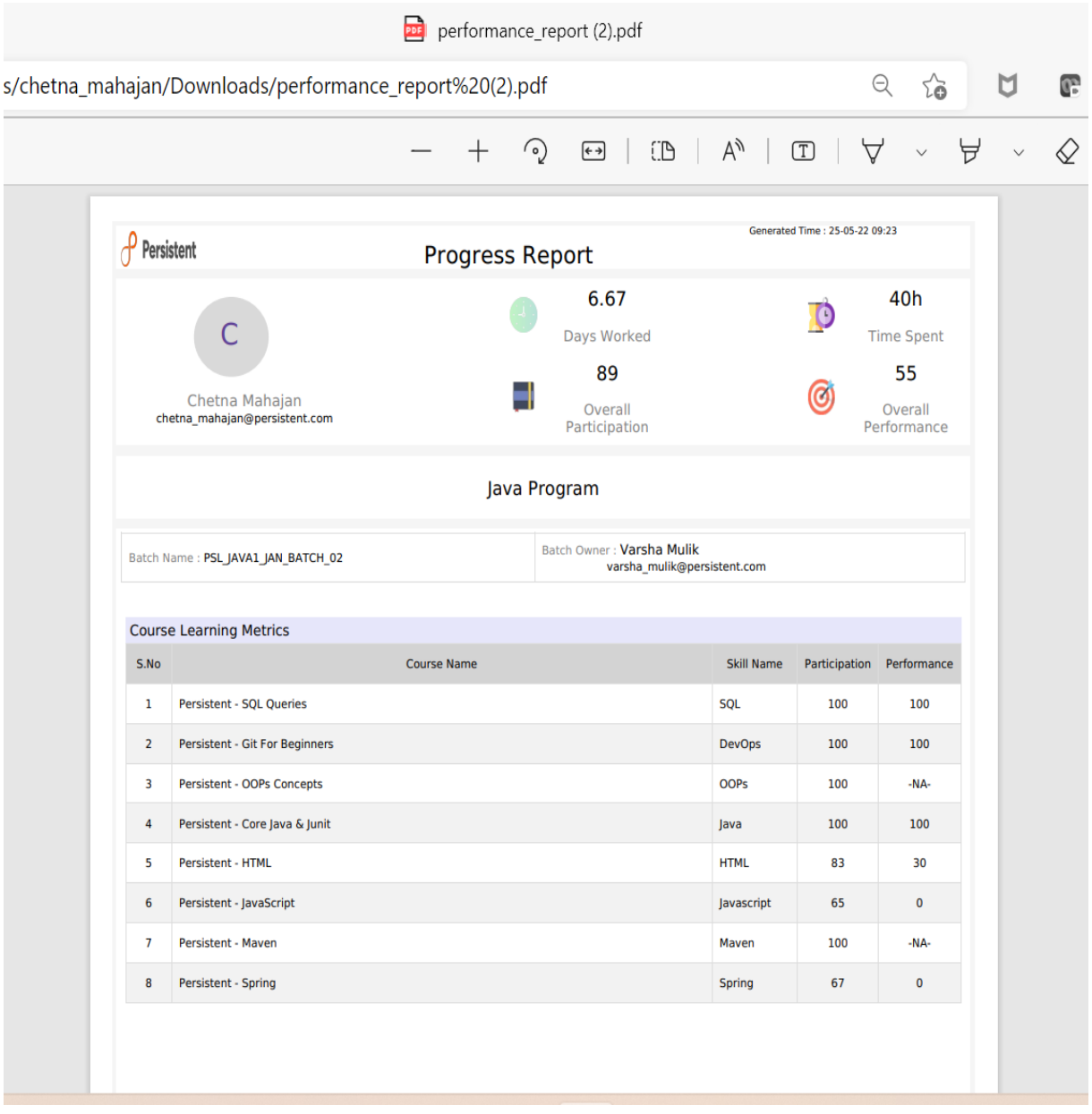
Chapter 3: Evaluations and Assignments:



	A	B	C	D	E	F	G
1	S.No	CourseName	Participation Score	Performance Score			
2	1	Persistent - OOPs Concepts	100	100			
3	2	Persistent - SQL Queries	100	100			
4	3	Persistent - Git For Beginners	100	100			
5	4	Persistent - Core Java & Junit	100	100			
6	5	Persistent - Maven	100	NA			
7	6	Persistent - Spring	67	0			
8	7	Persistent - JavaScript	65	0			
9	8	Persistent - HTML	83	30			
10							
11							
12							
13							

Progress Report:



Conclusion:

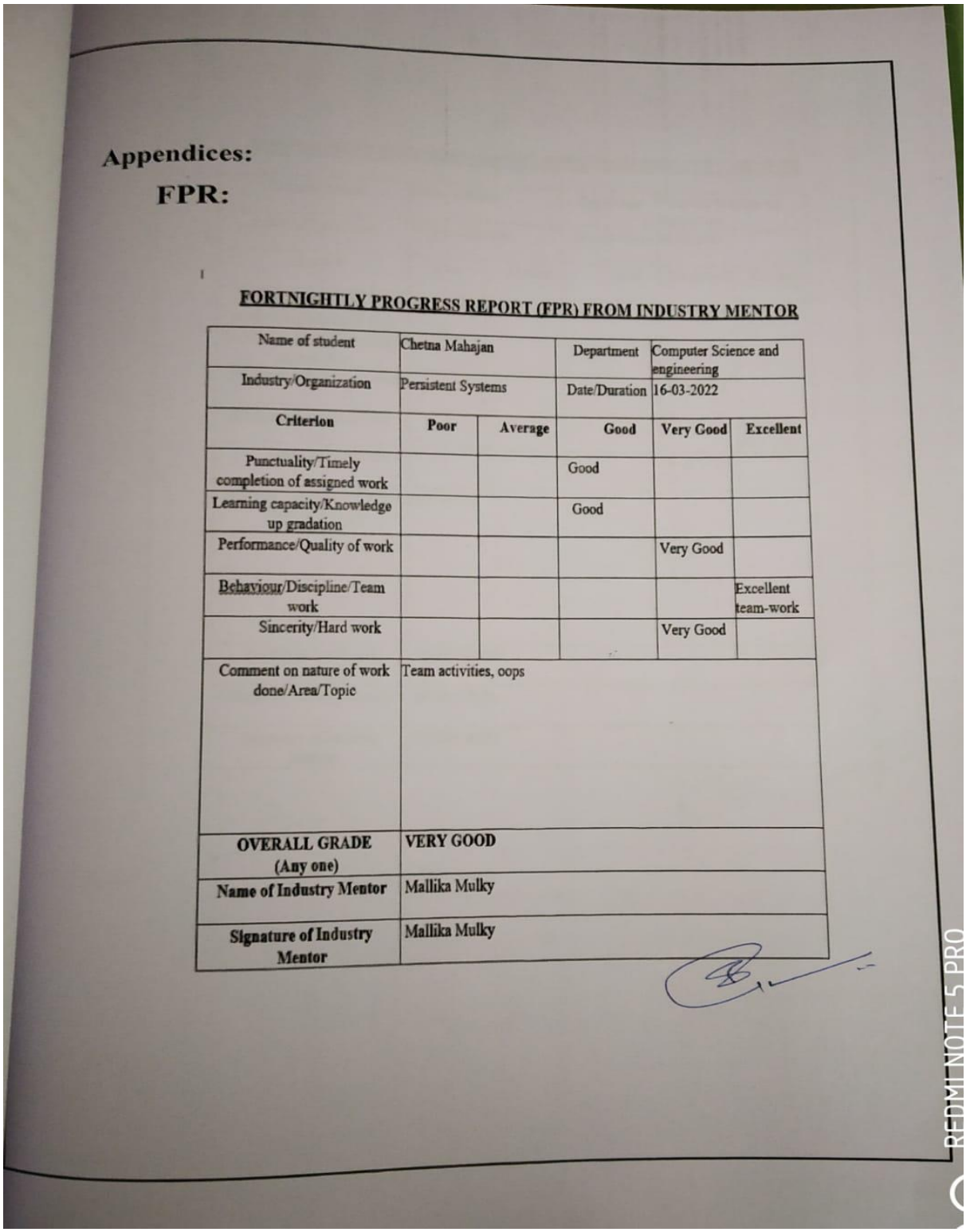
The experience of getting internship in Persistent Systems allowed me to develop and learn new technologies like SQL, GIT, HTML, CSS etc. More than this we at Persistent Systems get into non-tech activities like Experiential Learning Championship(ELC) where we have to participate as team. I have also develop the quality of communication and work as team member and how to convince yourself to your team member and complete the given activity.

References:

- **E-box platform**
- **Udemy courses**
- **Love babbar YouTube channel(https://youtu.be/uj4fy4kpaOA)**
- **Apna College(https://youtu.be/bSrm9RXwBaI)**
- **Persistent Material**

Appendices:

FPR:



Appendices:

FPR:

FORTNIGHTLY PROGRESS REPORT (FPR) FROM INDUSTRY MENTOR

Name of student	Chetna Mahajan		Department	Computer Science and engineering	
Industry/Organization	Persistent Systems		Date/Duration	16-03-2022	
Criterion	**Poor**	**Average**	**Good**	**Very Good**	**Excellent**
Punctuality/Timely completion of assigned work			Good		
Learning capacity/Knowledge up gradation			Good		
Performance/Quality of work				Very Good	
Behaviour/Discipline/Team work					Excellent team-work
Sincerity/Hard work				Very Good	
Comment on nature of work done/Area/Topic	Team activities, oops				
OVERALL GRADE (Any one)	**VERY GOOD**				
Name of Industry Mentor	Mallika Mulky				
Signature of Industry Mentor	Mallika Mulky				

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FORTNIGHTLY PROGRESS REPORT (FPR) FROM INDUSTRY MENTOR

Name of student	Chetna Mahajan		Department	Computer Science and engineering	
Industry/Organization	Persistent Systems		Date/Duration	30-03-2022	
Criterion	**Poor**	**Average**	**Good**	**Very Good**	**Excellent**
Punctuality/Timely completion of assigned work				Very Good	
Learning capacity/Knowledge up gradation			Good		
Performance/Quality of work				Very Good	
Behaviour/Discipline/Team work					Excellent team-work
Sincerity/Hard work				Very Good	
Comment on nature of work done/Area/Topic	OOPS, SQL				
OVERALL GRADE (Any one)	**VERY GOOD**				
Name of Industry Mentor	Mallika Mulky				
Signature of Industry Mentor	Mallika Mulky				

FORTNIGHTLY PROGRESS REPORT (FPR) FROM INDUSTRY MENTOR

Name of student	Chetna Mahajan		Department	Computer Science and engineering	
Industry/Organization	Persistent Systems		Date/Duration	13-04-2022	
Criterion	**Poor**	**Average**	**Good**	**Very Good**	**Excellent**
Punctuality/Timely completion of assigned work				Very Good	
Learning capacity/Knowledge up gradation					Excellent
Performance/Quality of work				Very Good	
Behaviour/Discipline/Team work					Excellent team-work
Sincerity/Hard work				Very Good	
Comment on nature of work done/Area/Topic	OOPS, SQL				
OVERALL GRADE (Any one)	VERY GOOD				
Name of Industry Mentor	Mallika Mulky				
Signature of Industry Mentor	Mallika Mulky				

FORTNIGHTLY PROGRESS REPORT (FPR) FROM INDUSTRY MENTOR

Name of student	Chetna Mahajan		Department	Computer Science and engineering	
Industry/Organization	Persistent Systems		Date/Duration	29-04-2022	
Criterion	**Poor**	**Average**	**Good**	**Very Good**	**Excellent**
Punctuality/Timely completion of assigned work			Good		
Learning capacity/Knowledge up gradation					Excellent
Performance/Quality of work				Very Good	
Behaviour/Discipline/Team work					Excellent team-work
Sincerity/Hard work					Excellent
Comment on nature of work done/Area/Topic	OOPS, SQL, GIT				
OVERALL GRADE (Any one)	**VERY GOOD**				
Name of Industry Mentor	Mallika Mulky				
Signature of Industry Mentor	Mallika Mulky				

FORTNIGHTLY PROGRESS REPORT (FPR) FROM INDUSTRY MENTOR

Name of student	Chetna Mahajan		Department	Computer Science and engineering	
Industry/Organization	Persistent Systems		Date/Duration	16-05-2022	
Criterion	**Poor**	**Average**	**Good**	**Very Good**	**Excellent**
Punctuality/Timely completion of assigned work				Very Good	
Learning capacity/Knowledge up gradation					Excellent
Performance/Quality of work				Very Good	
Behaviour/Discipline/Team work					Excellent team-work
Sincerity/Hard work					Excellent
Comment on nature of work done/Area/Topic	SQL, OOPS, GIT, HTML				
OVERALL GRADE (Any one)	**VERY GOOD**				
Name of Industry Mentor	Mallika Mulky				
Signature of Industry Mentor	Mallika Mulky				