Introduction to Course

AIT, Pune

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Objectives & Announcements

- Objectives:
  - After end of the session you may understands.....
    1. Need of this Course
    2. The course structure & their objectives & outcomes
- Announcements:
  1. What is Web Technology
  2. Need of the WT Course
  3. Course Structure
  4. Course Objectives & Outcomes
  5. Course Contents Unit-wise
  6. Practical Course Contents

What is Web Technology?

- Establishment and use of mechanism that make it possible for different computers to communicate.
- Also share resources or the building blocks of an effective computer networking system.
- Now everything needs internet to get access in many things
- Parts of Web Technologies:
  - Programming language
  - web servers
  - databases, and
  - business applications

Web Technologies

- HTML
- CSS
- XML
- JavaScript
- DOM
- DHTML
- AJAX
- WMLScript
- Java servlets
- Java Server Page

- Ext.JS
- ReactJS
- Node.js
- Vue.js
- JQuery
- Backbone.js
- Ember.js
- Meteor JS
- Angular JS
- Polymer JS

- SQL
- ASP
- PHP
- ADO
- PHP
- .NET
- SMIL
- SVG
- FLASH
- DJango

What is a web-based application?

- An application which has the website as the interface (the 'front-end').
- Users can access the application from any computer connected to the Internet or Intranet, instead of using an application installed on the stand alone computer.
- Web-based e-mail such as Hotmail is one of the best example as a common web-based application that performs the same functions as a traditional desktop application.

Benefits of Web Applications in Todays Technological Era

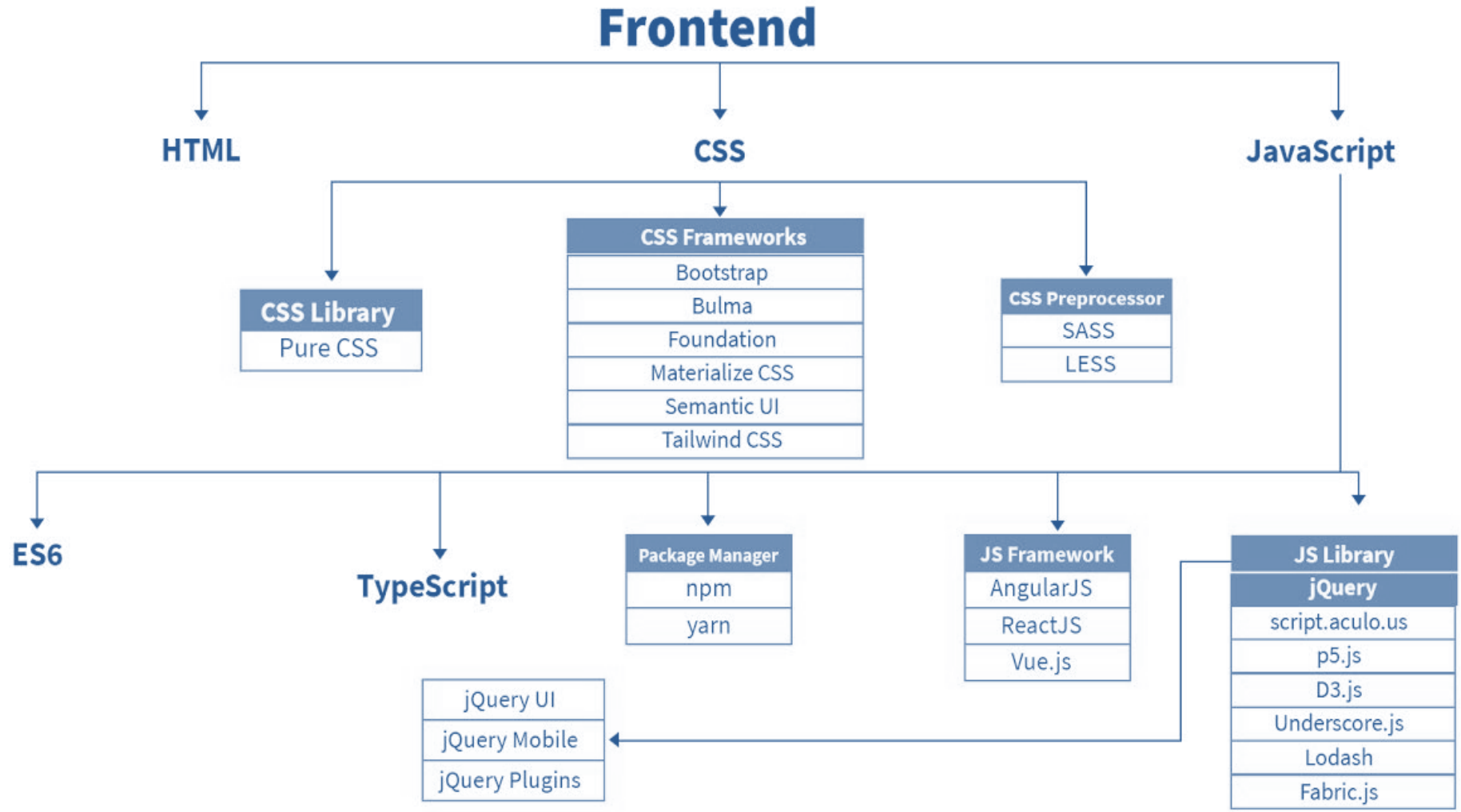
- Cross platform compatibility
- More manageable
- Highly deployable
- Secure live data
- Reduced costs
- Always up-to-date.

Web Development

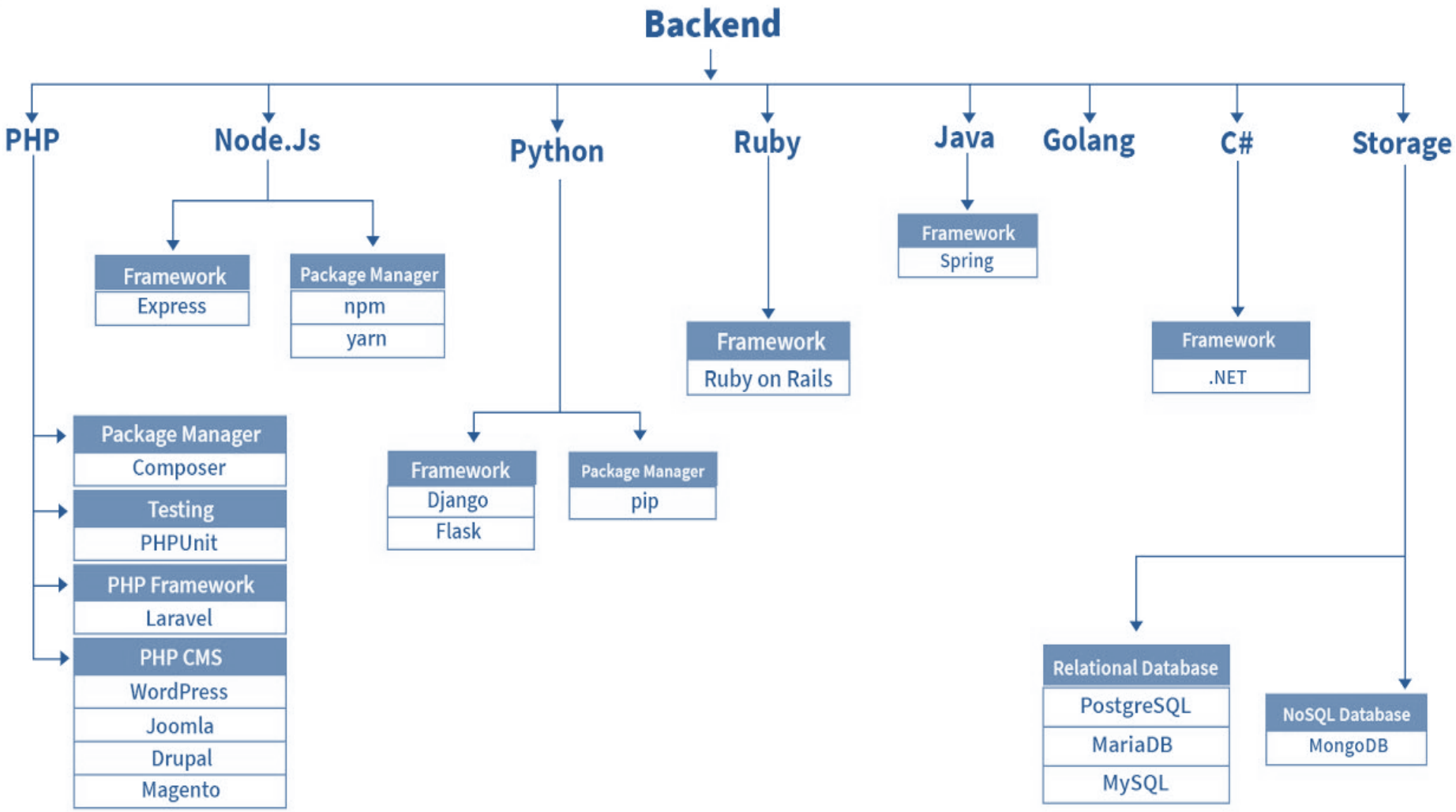
- Web development refers to the building, creating, and maintaining of websites.
- It includes aspects such as web design, web publishing, web programming, and database management.
- It is the creation of an application that works over the internet i.e. websites.
- Web Development can be classified into two ways:

1. Frontend Development
2. Backend Development

Frontend Development



Backend Development



Average Web Developer Salary in India

Average Web Developer Salary in India

₹308,040

Avg. Salary Show Hourly Rate

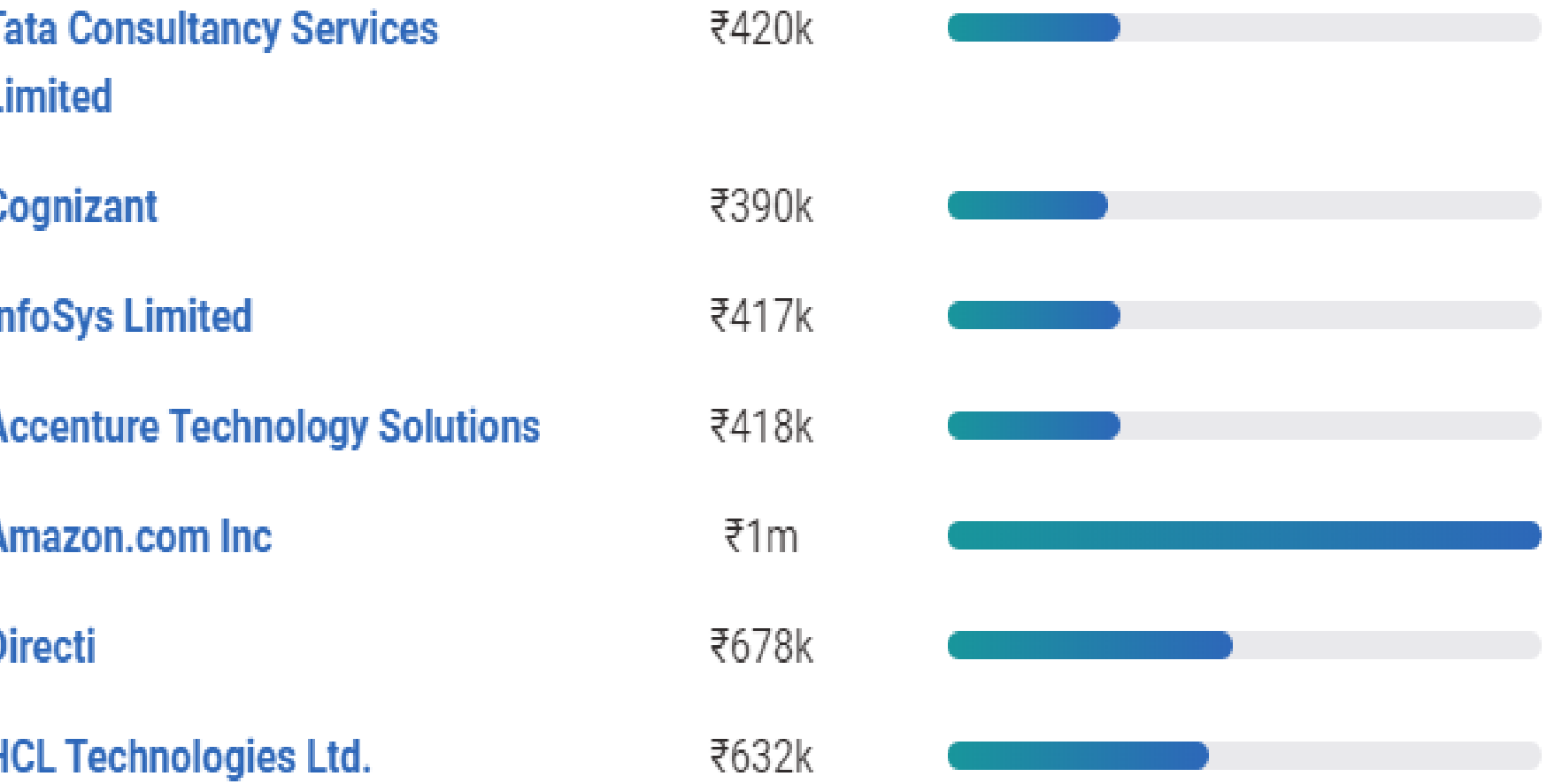
₹29,700	₹22,500	₹20,067
BONUS	COMMISSION	PROFIT SHARING

The average salary for a Web Developer in India is ₹308,040.

10%	MEDIAN	90%
₹123k	₹308k	₹777k

Some of the MNC & their Average Packages offered

Accenture	₹476k
Tata Consultancy Services Limited	₹420k
Cognizant	₹390k
InfoSys Limited	₹417k
Accenture Technology Solutions	₹418k
Amazon.com Inc	₹1m
Directi	₹678k
HCL Technologies Ltd.	₹632k



Jobs in Web Technologies

- Web Technologies are now the fastest-growing era of Pandemic
  - Glassdoor
  - Monsterindia
  - Naukri
  - GooglesJob

Course Structure

Vishwakarma University
Third Year of Computer Engineering
Web Technology

Teaching Scheme:

TH: 02 Hours/Week

PR: 02 Hours/Week

Prerequisite Courses: Good understanding of Programming and Problem-Solving concepts

Companion Course: Web Technology Lab

Course Objectives:

1. To understand the principles & methodologies of web based application development process.
2. To understand the current client side & server side web technologies.

Course Outcomes:

1. CO1: Analyze given assignment to select sustainable web development, design methodologies

Syllabus Contents

Sr. No.	Unit Title
I	Web Essentials
II	Mark-up language- HTML, CSS
III	Client-Side Technology: JavaScript and DOM
IV	Server-Side Scripting Language: PHP, MySQL & AJAX

I- Web Essentials

Difference between Internet and WWW, WWW concept, Evolution of Web, Web Browser, Web Server, Application server, Client Server Architecture and Communication, Client Server communication techniques, URL, URI, web design concepts and issues, HTTP request response

Mapping of Course Outcomes for Unit I	CO1

II- Mark-up language- HTML, CSS

HTML: Introduction, Structure of HTML document, history and versions.

HTML elements: headings, paragraphs, line break, colors and fonts, links, frames, lists, tables, images and forms, Difference between HTML and HTML5.

CSS: Introduction to Style Sheet, CSS features, CSS core syntax, Style sheets and HTML, Style rule cascading and inheritance, CSS Selector. Bootstrap.

Mapping of Course Outcomes for Unit II CO1

II: Client-Side Technologies: JavaScript and XML

JavaScript: Overview of JavaScript, using JS in an HTML (Embedded, External), basic syntax, variables & Data types, Operators, Control Structures, Arrays, Functions and Scopes, Objects in Java Scripts

XML: Introduction to XML, XML key component, Transforming XML into XSLT

DOM: Introduction to Document Object Model, DOM history and levels, DOM Objects, their properties & methods, Manipulating DOM

DTD: Schema, elements, attributes

IV: Server Side Scripting Languages

PHP: Introduction to PHP, Features of PHP, uses of PHP, sample code, PHP Script working, PHP Syntax, Primitives, operations and expressions, output, control statements, arrays, functions, String Manipulation, form handling, Cookies, session tracking, using MySQL with PHP.

Mapping of Course Outcomes for Unit V	CO2, 3

Part II: Web Technology Laboratory

<table>
<tr><th>Sr. No.</th><th>Suggested List of Laboratory Experiments</th></tr>
<tr><td>1.</td><td>Case study: Before coding of the website, planning is important, students should visit different websites (Min. 5) for the different client projects and note down the evaluation results for these websites, either
<table>
<tr><th>Sr. No.</th><th>Website URL</th><th>Purpose of Website</th><th>Things Liked in the website</th><th>Things disliked in the website</th><th>Overall evaluation of the website (Good/Bad)</th></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table>
From the evaluation, students should learn and conclude different website design issues, which should be considered while developing a website.</td></tr>
<tr><td>2.</td><td>Write a program to design Student registration form using HTML Concepts like heading tags, basic tags and attributes, frames, tables, images, lists, links for text and images, forms etc.</td></tr>
<tr><td></td><td>Apply CSS to web page created in assignment 2 with use of Internal</td></tr>
</table>

Part II: Web Technology Laboratory

Sr. No.	Suggested List of Laboratory Experiments
4.	Create JavaScript code for web page validation which was created in assignment 1. Validations are like all fields mandatory, phone number and email address validation.
5.	Design the XML document to store student information like Enrollment Number, Name, Mobile number, Email Id and demonstrate the use of: a. DTD b. XML Schema And display the content in (e.g., tabular format) by using CSS/XSL.
6	Build a dynamic web application using PHP and MySQL. a. Create database tables in MySQL and create connection with PHP.

Part III: Web Technology Mini Project

Suggestion
Students have to implement mini project which should include following concepts: a) HTML b) XML c) AJAX d) PHP

Study Material

Text Books:

1. Achyut Godbole & Atul Kahate, ||Web Technologies: TCP/IP to Internet Application Architectures||, McGraw Hill Education publications, ISBN, 007047298X, 9780070472983
2. Ralph Moseley & M. T. Savaliya, —Developing Web Applications||, Wiley publications, ISBN 13 : 9788126538676

References Books:

1. Robert W. Sebesta,“ Programming the World Wide Web”, 4th Edition, Pearson education, 2008
2. H.M. Deitel, P.J. Deitel and A.B. Goldberg, "Internet & World Wide Web How To Program", Third Edition, Pearson Education, 2006, ISBN 978-0131752429.

MOOC Courses:

1. “Internet Technology” on IIT Kharagpur, , Prof. Indranil Sengupta, Swayam web portal.
2. “The Web Developer Bootcamp 2022” created by Colt Steele on Udemy online Learning web portal.

Web References:

1. https://www.w3.org/html/
2. http://w3schools.org/
3. http://php.net/
4. https://jquery.com/
5. https://developer.mozilla.org/en-US/docs/AJAX
6. http://www.tutorialspoint.com/css/

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