CODING MUM

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Coding Mum Bandung

[1] Buku ini akan terus disempurnakan untuk kenyamanan pengguna dan kelengkapan materi yang disesuaikan dengan kebutuhan industri. Buku ini akan dipublikasikan secara umum di akhir tahun 2016.

KATA PENGANTAR

Saya menyambut baik diluncurkannya buku pedoman pelatihan programmer paruh waktu yang ditujukan kepada ibu-ibu rumah tangga atau diistilahkan Coding Mum. Pelatihan coding mum diharapkan mencapai target menciptakan lapangan kerja dan sumber pendapatan baru yang membantu ekonomi sebuah rumah tangga. Dengan demikian, pelatihan ini merupakan bagian dari skenario besar bagaimana sektor Ekonomi Kreatif mampu menyerap tenaga kerja dan menambah Produk Domestik Bruto.

Di sisi yang lain, pelatihan ini untuk menyahuti era e-commerce dengan membantu ibu rumah tangga untuk mengenal dan mengerti konsep pemrograman awal terutama untuk web aplikasi. Coding Mum juga memberikan kemampuan untuk dapat mengembangkan kegiatan bisnis online mereka dengan cara membuat halaman web sendiri.

Jumlah Ibu–ibu rumah tangga yang berpendidikan tinggi namun harus menghabiskan sebagian besar waktunya di rumah, merupakan angkatan kerja yang tidak sedikit sekaligus sangat potensial. Oleh karena itu, saya ingin mengekspresikan rasa optimis saya bahwa pelatihan ini dapat menjadi kick off sebuah gerakan nasional yang memanfaatkan waktu luang ibu ibu untuk mengatasi alert coder atau kurangnya tenaga programmer di Indonesia.

Terima kasih kepada semua pihak yang telah membantu dan terlibat dalam pembuatan buku pedoman ini: 7-Eleven, MIKTI-Dilo, Clevio, ProCode CG, Tokopedia, M-Saku, Polytron, 7Langit, Sribulancer, BliBli.com, Digital Artha Media, Mandiri E-Cash, Bhinneka, dan OLX.

JAKARTA, 30 Maret 2016

TRIAWAN MUNAF

PENDAHULUAN

Badan Ekonomi Kreatif (BEKRAF) bekerjasama dengan 7-Eleven, menyelenggarakan sebuah gerakan pemberdayaan perempuan yaitu Coding Mum. Gerakan ini merupakan sebuah rangkaian pendidikan dan pelatihan bahasa pemrograman bidang teknologi informasi untuk menghasilkan tenaga kerja programmer paruh waktu bagi ibu rumah tangga.

Gerakan ini juga sekaligus mendukung agenda strategis BEKRAF untuk menyerap tenaga kerja dari sektor industri ekonomi kreatif yang berjumlah 12,4 juta orang di tahun 2016 hingga 13 juta jiwa di tahun 2019.

Gerakan Coding Mum akan dilaksanakan sejumlah 15 kali pertemuan yang dimulai di Jakarta dan berlanjut ke kota-kota besar lainnya seperti Malang, Surabaya, Bandung, Bogor, dan Makasar, dan tidak menutup kemungkinan akan berkembang ke kota-kota lainnya.

Materi pelatihan Gerakan Coding Mum disediakan dari beberapa institusi pendidikan, diantaranya Clevio Coder Camp, Dilo Mikti, dan ProCode CG dan diberikan dalam bentuk coaching yang dapat lebih mudah dimengerti oleh para ibu rumah tangga sebagai para peserta.

Isi program Gerakan Coding Mum meliputi pengetahuan dasar web, HTML, CSS, Java Script serta pengetahuan awal PHP dan MySQL. Diharapkan di akhir program, peserta sudah mampu menghasilkan website sendiri dan siap untuk bekerja paruh waktu di perusahaan sponsor Coding Mum atau untuk mengembangkan usaha pribadi masing-masing.

Akhir kata, Gerakan Coding Mum ini diharapkan menjadi sebuah gerakan pengajaran open source yang dapat dinikmati di seluruh Indonesia. Kunjungi website Coding Mum (www.codingmum.id) untuk mengetahui update terbaru dari gerakan Coding Mum ini.

Team Coding Mum

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CODING MUM TOOLS

Brackets, an open source code editor for web designers and front-end developers, brackets.io

Code Academy, with interactive lessons to help you review: www.codecademy.com/

Girldevelopit, material for Coding Mum presentation https://www.girldevelopit.com/materials

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. https://git-scm.com/

Github. Online project hosting using Git. https://github.com/

Firebase. **Firebase** is a complete platform for building mobile and web applications. https://www.**firebase**.com/

INSPIRING WEBSITE

Khan Academy has a lot more information about drawing and animations. The organization produces short lectures in the form of YouTube videos also. www.**khanacademy**.org

Thimble, write the web on the web. Thimble is an online code editor that makes it easy to create and publish your own web pages while learningHTML, CSS & JavaScript. https://thimble.mozilla.org/en-US/

W3schools. Is optimized for learning, testing, and training. www.w3schools.com

Tutorial point. More complex to learn programming. www.tutorialspoint.com

Site Point Free tutorials and reference manuals with examples www.sitepoint.com

HTML. Provides guides and help for developing of websites.www.html.net

Codeschool. Learn by Doing. **Interactive programming courses and coding challenges,** https://www.codeschool.com/learn

IMPORTANT WEBSITE

Developers Guide, from the Mozilla Developers Network: https://developer.mozilla.org

Code.org, from Facebook team: https://code.org/

Sribulancer, this is the place where you can get a freelance job from many places. www.sribulancer.com

INSPIRING WEBSITE

https://id.pinterest.com/explore/web-design/, http://www.siteinspire.com/, http://www.webdesign-inspiration.com/, http://www.awwwards.com/

LESSON 01:
INTRO TO WEB CONCEPT:

LET'S CREATE YOUR 1ST WEBSITE

- Let's try create some simple coding for simple website
    1. Download Notepad ++ https://notepad-plus-plus.org/download/v6.9.1.html
    2. Let's create a folder name : codingmum
    3. Open notepad and write your name, save it as index.html at your coding mum folder
    4. Open web browser and open your index.html. Vioolaa. You have your first website running ☺
- Let's learn something more complicated :
    1. Open this website :https://www.codecademy.com/en/courses/make-a-website
    2. Create login for your account
    3. Let's follow the instruction
    4. While you play, you will learn more from all this 1st lesson

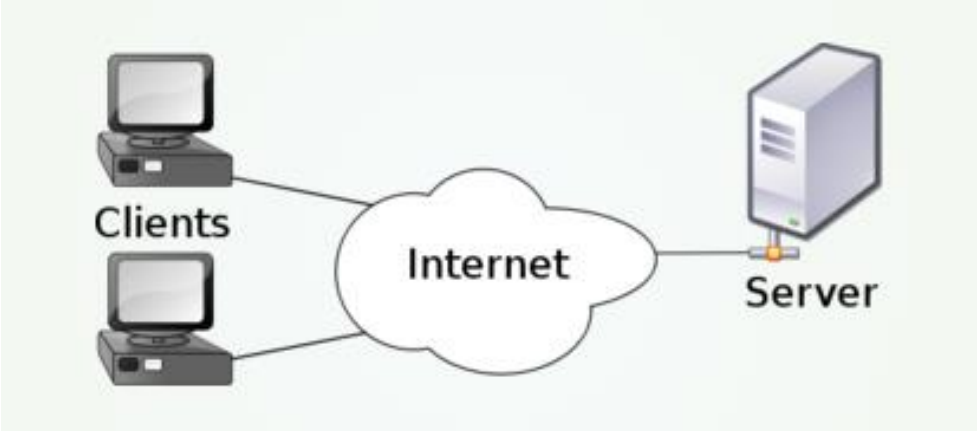
TERMS

HTML	CSS
WYSIWYG – wix.com	IDE
CMS	OPEN SOURCE
API	IP ADDRESS
DNS	SEO
WEB 2.0	THE CLOUD

WORLD WIDE WEB

Let's create hello world.html

What is the difference between a client and a server and how they communicate?



PARSING LANGUAGE & MEDIA

Client Side :	Server Side
• HTML • CSS • JavaScript • Flash (with plugin) • Images	• PHP • Perl • Python • Ruby • .Net, Java • ColdFusion • Databases

PARSING LANGUAGE & MEDIA

Web Browser:

- Chrome
- Firefox

Text Editor

- TextWrangler - Mac
- Notepad ++ - Windows
- Sublime Text - Linux, Mac or Windows
- gedit – Linux

FTP:

- WinSCP, Cyberduck, or CoffeeCup FTP

Optionally Image Editor:

- IrfanView, Gimp, or Photoshop

What do you need to know before building a web site?

What language should you use and what are the differences?

MEET THE WEB TEAM

Front end	**Back end**	**Overall**
• User Experience Designer • Graphic Designer • Web Developer	• Server Admin • Database Admin • Software Engineer	• QA Engineer • Project Manager

LESSON 02:
INTRODUCTION TO GIT/GITHUB

As no one in the word is perfect, let's learn GIT to save your day - when you lost your file - you still have your versioning in it and let's learn GITHUB so your work done faster by collaborate with other team and work together in it.
Here is the website link: https://github.com/

LET'S CREATE YOUR GIT ACCOUNT

Let's try create Github account:

1. Install Microsoft Expression Web
2. Install GIT & create account at github.com
3. Create repository : coding_mum
4. Save your index.html inside your repository coding_mum
5. Change the index.html inside git and try to pull it to your local computers

REPOSITORY

ADD FILES

CHANGES FILES

COMMIT FILES

MERGING

PUSH & PULL TO GITHUB REPO

FORKING

PULL REQUESTS

BRANCING

LESSON 03:
INTRO TO HTML

You have your 1st website, but still not looks like a real website. Let's learn now to create some more complex website.

LET'S CREATE A PROPER WEBSITE

1. Create a folder with your website name and put another folder inside with folder name: css, images, js and you can add another folder later if needed.
2. Now open your index.html at Notepad ++
3. Let's put the exactly same with the anatomy of html element inside your index.html
4. Change the header with
5. Let's slowly add element to your website
   - Paragraph
   - Link
   - Image
   - Line Break
   - Unordered and Ordered Lists

WHAT IS HTML?

TERMS

Web design

Web development

Font End

Back End

TOOLS

Browser

- Chrome
- Firefox

Development Toolkit

- Chrome - Inspector
- Firefox - Firebug

Text Editor

- Text Wrangler - Mac
- Notepad ++ - Windows
- Sublime Text - Linux, Mac or Windows
- gedit – Linux

GET STARTED: FOLDER STRUCTURE

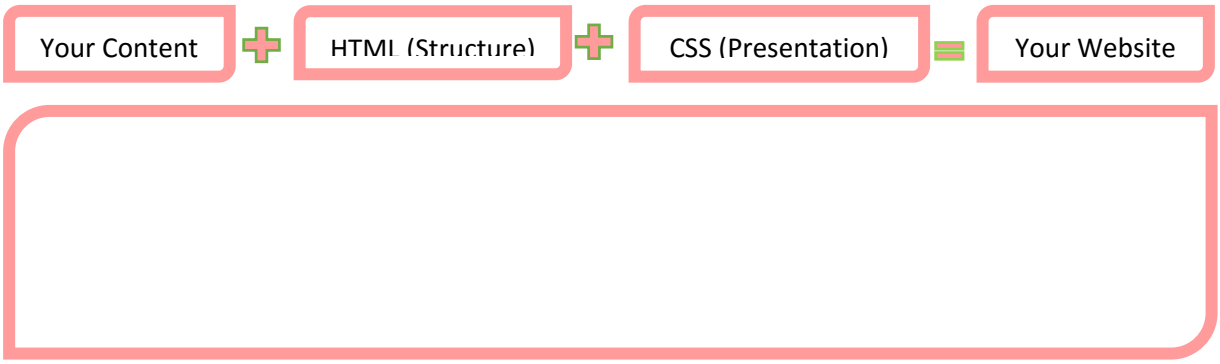
All the files for your site should be stored within the same folder.

This includes:

- HTML Files
- CSS Files
- Images
- Script files
- Anything else that will appear on your site

Note: File names should not include spaces or special characters. File names ARE case sensitive.

ANATOMY OF A WEBSITE



ANATOMY OF AN HTML ELEMENT

Let's start create our very 1st website while we learn HTML Element:

HTML Structure

```
<!DOCTYPE html>
<html>
        <head>
                <title>Title of the page </title>
        </head>
        <body>
                The page content here.
        </body>
</html>
```

While you create your website, slowly you will start to understand below term:

TAG	HEAD and BODY TAGS
CONTAINER ELEMENT	NESTING
STAND ALONE ELEMENT	COMMENTS
ATTRIBUTE	TABLES
VALUE	CHARACTERS CODE

LESSON 04:
INTRO TO CSS

Cascading Style Sheets are used to describe the appearance of Web content.

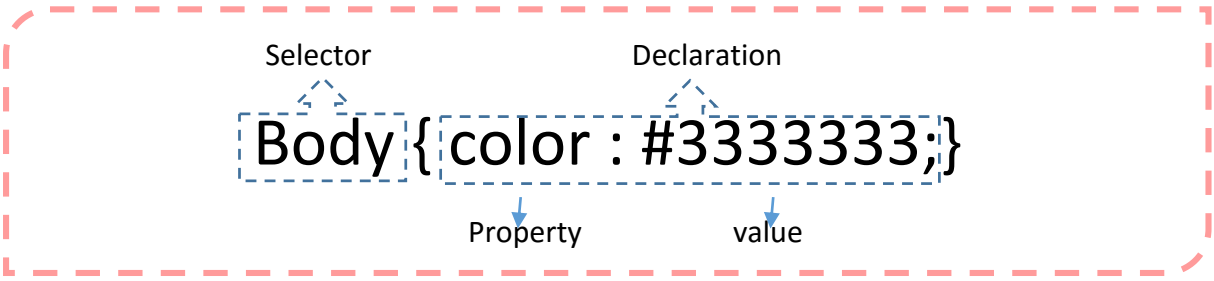
Your website still looks boring and not beautiful, let's put some more effort so your website done nicely.

LET'S DECORATE YOUR WEBSITE

1. Inside your css folder, create file name : style.css
2. Let's connect style.css to your index.html
3. Now test it with changing some color from your previous website
4. We will learn element selector to save your time :
    a. Change all the color in html body
    b. Change all the color in tag html h1
    c. Change all the color in paragraph
5. We will learn id selector to save your another time :
    a. Change the header to another color
6. We will learn class selector to save your entire life :
    a. How to create 'image' and recipe content in left side?
    b. How to change font style?
    c. Change link HTML?
    d. Create border style?
    e. How to change Button Style?
    f. How to create DROP DOWN Menu with CSS?

WHAT IS CSS?

CSS RULE



CSS Selector:

- Element
- ID
- LESSON
- Position

CSS Property Values:

- Background-color
- Font-family
- Font-size
- Color
- Width
- Height

CONECTING CSS AND HTML

LESSON 05:
HTML, BEYOND THE BASIC

Today we will be making a site from scratch using divs and spans to create a header, footer, sidebar and a content area.

LET'S CREATE THE COLUMN LAYOUTS

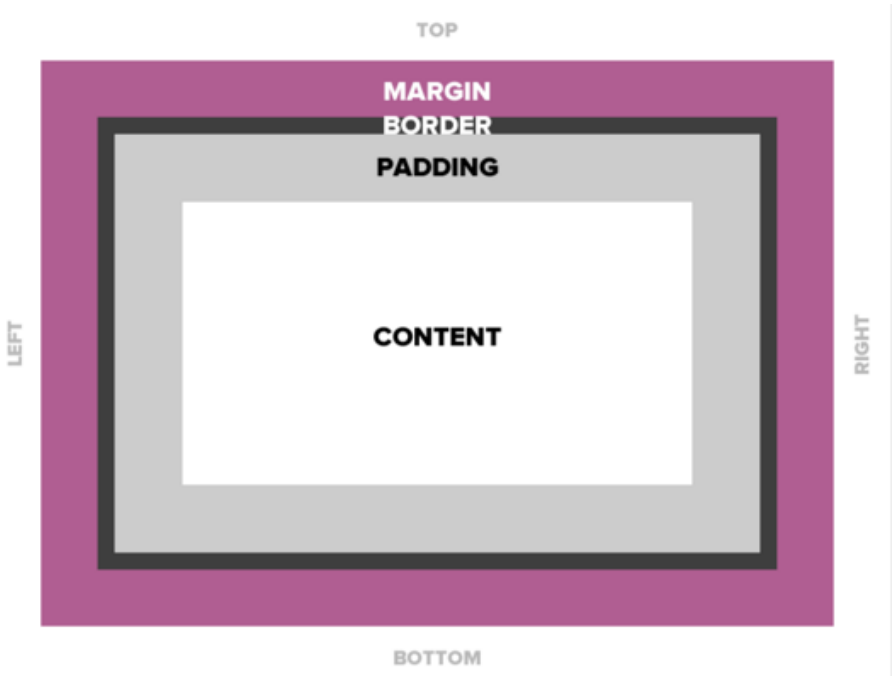
1. Find any website that you like
2. From the website - find the column layout and draw it in a paper first
3. Let's start planning the code order before we really write the programming
4. Now, start type it to your text code

INLINE VS BLOCK

DIVISION / DIV

SPAN

PSEUDO LESSON



LESSON 06:
CSS, LAYOUT, AND FORMATTING

Did the layout still look stiff? Let's add some CSS format into your web code programing

LET'S PLAY WITH CSS

1. The normal div usually has a static position, what about if we create a relative position content, let's try it.
2. What about if I want to have 1 content that stick and stay in 1 place area (use absolute positioning).
3. Ouch, 2 content position is overlapping, let's use z-index and make the content that important goes on top
4. I have a quote that I really love, we can use float to create the format.
5. I don't want to use the position that I already set before, we can use clear to create a different position format.

POSITIONING

FLOAT

CLEAR

LESSON 07:
INTRO TO RESPONSIVE DESIGN

Nowadays, we have so many types of screen: laptop, hand phone, tablet, and many more. It is impossible if we create the code for each of them. Thanks to technology who always improve, we will learn responsive design, by using one code, they can fit into many type of screen.

Let's use this website to learn responsive design:
http://www.entheosweb.com/website_design/responsive_web_design.asp

LET'S PLAY WITH RESPONSIVE DESIGN

1. You will heard a lot about container this time. Let's reset our css first
2. Change the column div that you have learn before into percentage format. We will use percentage here instead of number so the computer will calculate it depend on the screen size
3. And actually that's it.. :D you will get the responsive web right away
4. Now we will use other CSS format to improve your website layout and make it more beautiful and easier using BOOTSTRAP

RESET CSS

FIXED VS FLUID WIDTH PAGES

CONTAINER

HTML 5

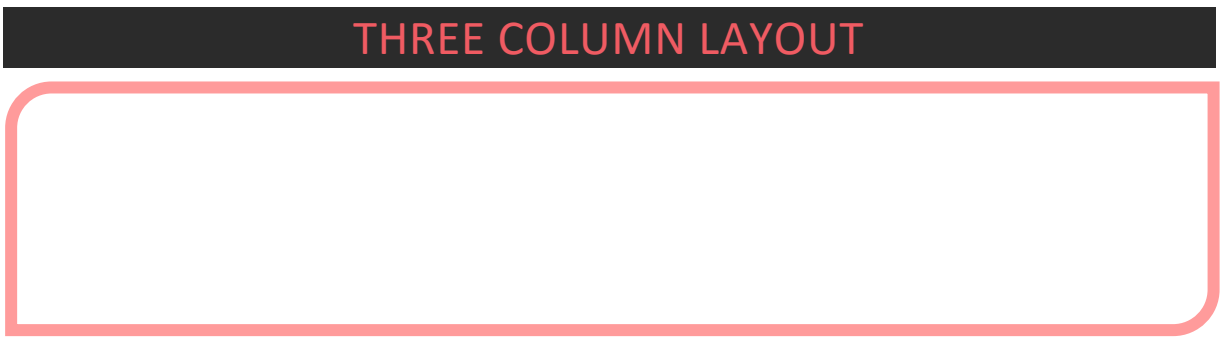
New structure element:

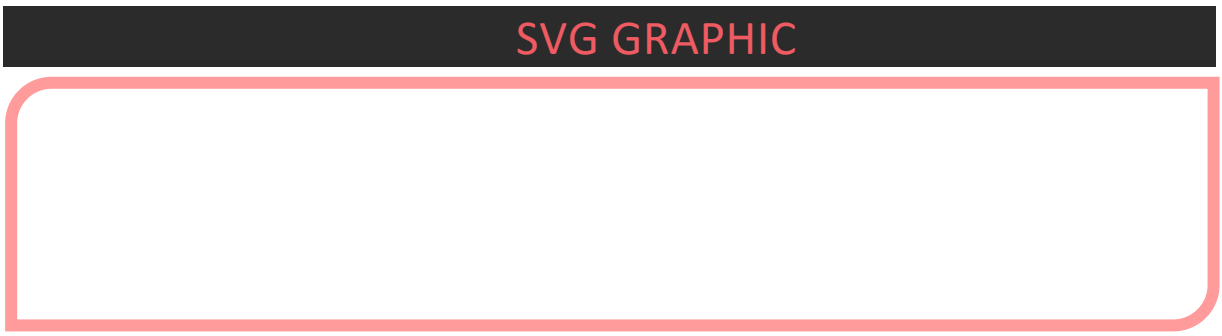
- <section>
- <header>
- <nav>
- <footer>
- <aside>
- <article>

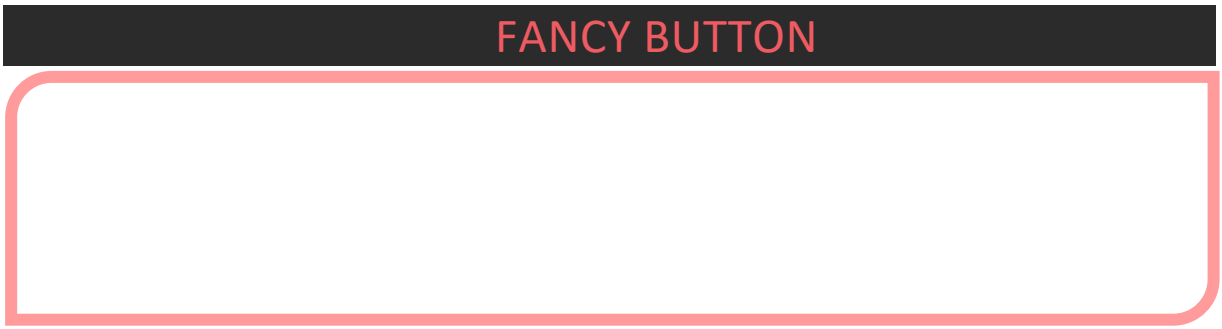
HORIZONTAL & FIXED NAVIGATION

HEROS WITH FULL BLEED BG IMAGES

BORDER RADIUS ON IMAGES&ELEMENT







Others that we can explore:

- Rgba colors and opacity
- Text Shadow
- Box Shadow
- CSS Gradient
- Transition
- Transform

RESPONSIVE WEB DESIGN (RWD)

The Ingredients of RWD

- A Flexible foundation
- Fluid grids
- Flexible images
- CSS Media Queries to make the magic happen

BOOTSTRAP

FOUNDATION

CSS PREPROCESSORS

LESSON 08:
INTRO TO JAVA SCRIPT AND BASIC PROGRAMMING CONCEPT

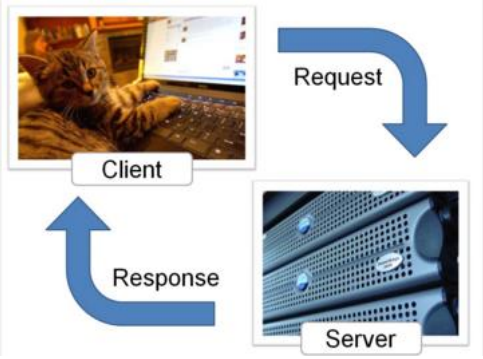
Did u start notice and feel tired to write a code that is same - over and over and over again?

Is there any way we could use to make it simpler? YES, it is. We need to learn a basic programing concept so we don't need to create a same code over and over again.

LET'S LEARN BASIC PROGRAMMING

1. We will learn the logic basic programing by using a game, please open this website : https://studio.code.org/s/frozen/stage/1/puzzle/1 and follow the instruction
2. Actually why we learn it? Let's imagine if you want to create or adding a daily diary or notes or picture or anything into your website, and I believe you don't want to open your looooooong code programming to add 1 paragraph. So we will using java script and it will automatically add it into your website without add anything into your code.

WHAT IS JAVA SCRIPT



SCRIPT TAGS

```
<script>
    CODE GOES HERE
</script>
```

VARIABLES

NUMBERS

STRINGS

FUNCTIONS

ARGUMENTS

RETURNING VALUES

LESSON 09:
CONTROL FLOW

VARIABLE SCOPE

BOOLEAN VARIABLES

IF STATEMENT

COMPARISON

IF/ELSE STATEMENT

IF/ELSE IF/ELSE STATEMENT

LOGICAL OPERATORS

WHILE LOOPS

INFINITE LOOPS

FOR LOOPS

LOOPS & LOGIC

BREAK

ARRAY

LESSON 10:
INTRO TO DOM

We model the nested structure of an HTML page with the DOM (Document Object Model) Tree. The browser makes a "map" of all the elements on a page.

OBJECTS

DOM ACCESS: BY ID/TAG NAME/HTML

GET ELEMENTS

DOM NODES: ATTRIBUTES/STYLES

DOM INNERHTML

NEW NODES

LESSON 11:
EVENTS AND ANIMATION

Website nowadays rarely using a complex event and animation, but let's learn it to create our website more fancy.

EVENTS

TYPES OF EVENTS

There are variety of events. Some of the most common:

- onclick: The event occurs when the user clicks on an element
- onmouseover: The event occurs when the pointer is moved onto an element
- onkeyup: The event occurs when the user releases a key
- onload: The event occurs when a document has been loaded
- onfocus: The event occurs when an element gets focus

FUNCTION

PREVENTING DEFAUTS, THIS

FORMS: RADIO&SUBMIT BUTTON

TIMING EVENTS

ANIMATIONS

LESSON 12:
INTRO TO PHP

Why we learn PHP and actually what Can PHP Do?

- PHP can generate dynamic page content
- PHP can create, open, read, write, delete, and close files on the server
- PHP can collect form data
- PHP can send and receive cookies
- PHP can add, delete, modify data in your database
- PHP can be used to control user-access
- PHP can encrypt data

OBJECTS

DOM ACCESS: BY ID/TAG NAME/HTML

GET ELEMENTS

DOM NODES: ATTRIBUTES/STYLES

DOM INNERHTML

NEW NODES

LESSON 13:
INTRO TO MY SQL

MySQL is the most popular database system used with PHP.

Let's create a simple database for login (name and password).

CONNECT DATABASE

ADDING DATA

PASSING INFORMATION

PUTTING TOGETHER