

Lecture Name

Detailed concepts

"Programming Fundamentals-1(JavaScript)"

1 Variables

Variables in JS (var and let keyword)

2 I/O Operators

Input and Output operations including datatypes

3 Arithmetic Operators

Arithmetic operators in JS(*, +, -, /)

4 Conditionals

Conditional statements using Scratch, JS and Python

5 Loops-1

Loops in Javascript (for loop)

6 Loops-2

while and do while loop

7 Functions

Function in JS(inbuilt and custom functions)

8 Arrays

Quiz game using Arrays

"Programming Fundamentals-2 (JavaScript)"

9 Strings

Strings in JS(concatenation.multiline strings)

10 Objects

Virtual food menu application using objects

11 Random Function

Creating Music Player using Random function

12 Javascript Game-How many Fingers

Guessing game using random function

Web & Games Development

13 Into to Web HTML

Introduction to Web development, HTML / CSS / JS (heading and paragraph tags and text formatting, making wikipedia page)

14 HTML links, images, lists

HTML links, images and lists tags (creating a collection of movies website)

Lecture Name

Detailed concepts

15 HTML tables and forms

HTML tables and form tags (Creating a registration form)

16 HTML entities

HTML entities and creating a Survey form

17 Into to Web CSS

Introduction to CSS and CSS selectors

18 CSS fonts, colors and borders

How to insert fonts, colors and borders on a web page using CSS

19 CSS box model

Box model and alignment in CSS for a webpage

20 CSS hyperlinks and buttons

Styling hyperlinks and buttons, learning navigation bar using CSS

21 Client side language-JS

Introduction to JS for web (language of the web)

22 CSS padding,hover

Creating a project, a website using HTML+CSS+JS

23 Accessing elements in JS

Creating a project, a website using HTML+CSS+JS

Database

24 INTRO TO SQL

Introduction to SQL(query,Record,Field,Entity)

25 DDL,DML

DDL(Create,Drop,Rename,Truncate) ,DML(Select,Insert,Delete)

26 DCL,TCL

DCL(Grant,Revoke),TCL(Commit,Rollback)

27 PRIMARY KEYS

Introduction to Primary key in Database

28 FOREIGN KEYS

Introduction to Foreign Keys in Database

29 AGGREGATE FUNCTIONS

Aggregate functions(Count,Group By,Having,Order By)

30 JOINS-PART 1

Using joins to join two tables(Inner join)

31 JOINS-PART 2

Using joins to join two tables(cross join)

32 PROJECT

Make two tables use joins in those table and demonstrate DDL,DML commands.

Lecture Name

Detailed concepts

App development-1

33 Introduction to Thinkable

Introduction to apps, interface, frontend and backend, explaining different components on a screen

34 Alarm Clock

An alarm clock app using thinkable with start and stop functionalities

35 Simple Claculator Part-1

Creating calculator app using thinkable app(design)

36 Simple Claculator Part-2

Creating calculator app using thinkable app(design + coding)

37 Login & Registration Part-1

Replicating the user login (username and password) with a app interface(design)

38 Login & Registration Part-2

Replicating the user login (username and password) with a app interface(design+coding)(variable)

39 Tic Tac Toe Part-1

Tic Tac Toe using thinkable (using buttons for designing)

40 Tic Tac Toe Part-2

Tic Tac Toe using conditionals and variables for the logic

41 IOT My Sesnsor App Part-1

IOT My Sensor App using thinkable (Explain IOT before the project)

42 Digital Doodler Part-1

IOT My Sensor App using thinkable (designing)

43 Digital Doodler Part-2

IOT My Sensor App using thinkable (Coding)

44 Online Chat APP using firebase-1

Digital Doodler-(designing)

App development-2

45 Online Chat APP using firebase2

Digital Doodler-(coding)

46 Space game-1

Intro to fiebase database

47 Space game-2

Designing of the app

48 Space game-3

logic for the app

Lecture Name

Detailed concepts

PYTHON FUNDAMENTALS

49 I/O Operators

Input and Output operations including datatypes

50 Arithmetic Operators

Arithmetic operators JS and creating a basic calculator

51 Conditional Statements

Conditional statements using Python

52 Loops

Loops in Python (for, while, infinite)

53 Functions

Functions in Python (creating and calling a function)

54 Break and Continue Statement

Introduction to break and continue statement

55 List

Introduction to List in python. Accessing elements in the list

56 Tuples

Introduction of tuples in python. Difference between list and tuples

57 Object oriented programming

Introduction to classes and objects in the python

58 Dictionary

Introduction to Dictionary (key-value pairs)

59 Random Function

A virtual tables revision teacher, coded in a program using random numbers and multiplication logic

60 Python Projects

Rock, Paper and Scissors Game with computer as the second player (includes all the concepts taught till now)

ARTIFICIAL INTELLIGENCE

61 Intro to Artificial Intelligence

Introduction to Artificial Intelligence. Applications of AI

62 Image recognition

Image Recognition using teachable machine

63 Voice recognition

Voice recognition using teachable machine

64 Types of Machine Learning

Types of ML- Supervised and Unsupervised learning using dataset

65 NLP

NLP based project using Python NLTK library

Lecture Name

Detailed concepts

66 AI - APIs

Introduction to Artificial Intelligence - APIs

67 Turtle Library

Introduction to turtle library in python

68 Introduction to Deep Learning

Introduction to Deep Learning .Why deep Learning came into picture

69 Sentiment Analysis-1

Sentiment Analysis project using existing data

70 Sentiment Analysis-2

Project continued

AR/VR

71 Intro to AR/VR

Intro to AR /VR and difference between them

72 AR

Introduction to Augmented Reality

73 VR

Introduction to Virtual Reality

74 PROJECT ON VR

Create a project on VR using instaVr

75 PROJECT ON VR

project continued

ROBOTICS

76 Introduction to Hardware

Introduction to the Arduino

77 Block Based Coding

Coding arduino devices with hardware devices interfacing and using block based coding.

78 Input / Output

Input and Output – Taking Input from the user, displaying the results

79 led blinking

Introduction to led blink(default delay of 1000milliseconds)

80 led fading

Fading the led