

Full Stack in Python & Web Development





Serving since 11 Years

5000+ Candidates Trained

2000+ candidates Placed

50+ College Participation

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C - Programming

TOPIC 1 - WHAT IS C LANGUAGE?

- HISTORY OF C
- FEATURES OF C
- TOKENS IN C
- VARIABLES, KEYWORDS, IDENTIFIERS, OPERATORS, DATA TYPE, CONSTANT

TOPIC 2- CONTROL STATEMENTS

- SELECTION (IF, ELSE-IF, ELSE-IF LADDER)
- BRANCHING(SWITCH)
- LOOPING(WHILE, DO-WHILE, FOR)
- JUMPING (BREAK,CONTINUE)
- NESTING

TOPIC 3 - FUNCTIONS

- WHAT IS FUNCTION
- FUNCTION TYPES
- FUNCTION CATEGORIES
- RECURSION IN FUNCTION
- CALL BY VALUE &REFERENCE

TOPIC 4 - ARRAY

- 1-D ARRAY
- 2-D ARRAY
- ARRAY & FUNCTION

TOPIC 5 - POINTERS

- DEFINITIONS
- TYPES
- POINTER TO POINTER
- POINTER & FUNCTION
- PASS BY REF & VALUE

TOPIC 6 - STRING

- STRING CONCEPT
- LIBRARY FUNCTION IN STRING
- OPERATIONS ON STRING
- USER DEFINED

TOPIC 7- STRUCTURE & UNION

- STRUCTURE IN C
- NESTED STRUCTURE

TOPIC 8 - DYNAMIC ALLOCATION

- MALLOC / ALLOCK
- CALLOC
- REALLOCK

TOPIC 9-FILE HANDLING

- FILE HANDLING GOALS
- FILE HANDLING FUNCTIONS

TOPIC 10 - PROGRAMMING PRACTICE.



C++ Programming

TOPIC 1 - BEGINNING WITH C++

- WHAT IS C++ & ITS HISTORY
- APPLICATIONS, ADVANTAGES
- DIFFERENCE BETWEEN C & C++
- CONTROL STATEMENTS IN C++
- PILLARS OF OOPS

TOPIC 2 - CLASSES AND OBJECTS

- DEFINING CLASSES,
- DEFINING MEMBER FUNCTIONS.
- DECLARATION OF OBJECTS TO CLASS.
- ACCESS MODIFIERS IN C++ (I.E. PRIVATE, PUBLIC, PROTECTED)

TOPIC 3 - FUNCTIONS IN C++

- TYPES OF FUNCTION
- CATEGORIES OF FUNCTIONS

TOPIC 4 - CONSTRUCTOR:

- CONSTRUCTOR IN C++
- CONSTRUCTOR TYPES
- FUNCTION OVERLOADING
- DESTRUCTOR

TOPIC 5 - FRIEND FUNCTION, INLINE FUNCTION

TOPIC 6 - STATIC DATA MEMBER & MEMBER FUNCTION

TOPIC 7- REFERENCING & DEREFERENCING

TOPIC 8 - OOPS

- ABSTRACTION
- ENCAPSULATION
- INHERITANCE
- TYPES OF INHERITANCE
- POLYMORPHISM
- TYPES OF POLYMORPHISM
- METHOD OVERLOADING
- METHOD OVERRIDING
- OPERATOR OVERLOADING
- VIRTUAL FUNCTION

TOPIC 9 - FILE HANDLING IN C++

- WHAT IS STREAMS
- OPERATIONS ON FILE

TOPIC 11 - PROGRAMMING PRACTICE



Python

TOPIC 1 -PYTHON BASIC AND PREREQUISITES

- PYTHON HISTORY
- PREREQUISITE & NEED OF PYTHON
- SCRIPTING LANGUAGE
- FEATURES AND FUNCTIONALITY OF PYTHON
- PYTHON VERSIONS

TOPIC 2 - WORKING WITH PYTHON IDE

- SETTING UP PYTHON ENVIRONMENT
- PYTHON IDE AND INSTALLATION
- FIRST PYTHON PROGRAM

TOPIC 3 –TOKENS IN PYTHON

- VARIABLES AND DATA TYPES
- KEYWORDS & IDENTIFIER
- COMMAND LINE ARGUMENTS AND FLOW CONTROL
- USER INPUT
- NUMBERS AND STRINGS
- CASTING AND OPERATORS
- LIST, TUPLES AND SET
- DICTIONARIES(FUNCTIONS AND METHODS)
- COMPREHENSION

TOPIC 4 – CONTROL STATEMENTS

- IF, ELSE-IF,ELSE IF LADDER
- BREAK AND CONTINUE STATEMENTS
- LOOPING (WHILE ,DO - WHILE, FOR)

TOPIC 5 – FUNCTIONS, MODULES & ARRAY

- FUNCTIONS DEFINITION
- FUNCTION TYPES
- FUNCTION WITH ARGUMENT(*ARGS ,**KWRAGS)
- FUNCTION CATEGORIES
- MODULES

TOPIC 6- LAMBDA FUNCTION

- LAMBDA FUNCTION (WITH MAP, REDUCE, FILTER)
- DECORATORS AND GENERATORS IN PYTHON

TOPIC 7 -CLASSES AND OBJECT

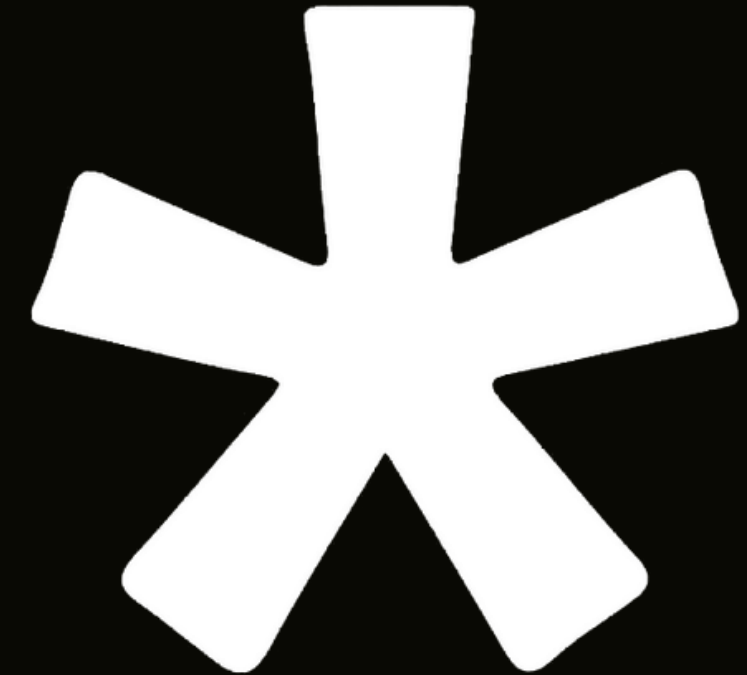
- INTRO TO CLASSES AND OBJECTS
- OOPS
- EXAMPLES

TOPIC 8 – FILES AND EXCEPTION HANDLING

- OPERATION ON FILE
- READ/WRITE OPERATIONS ON FILE
- FILE TYPES
- EXCEPTION HANDLING
- TRY...EXCEPT
- TRY...EXCEPT. ELSE
- FINALLY

TOPIC 9 – PYTHON REGULAR EXPRESSION

- REGULAR EXPRESSION
- MATCHING
- SEARCHING
- EXTENDED REGULAR EXPRESSION



Python

TOPIC 10 – PYTHON AND DATABASE

- PYTHON MYSQL
- DATABASE AND TABLE CREATION
- CRUD OPERATION
- HANDLING DATABASE ERRORS
- PYTHON AND MONGODB

TOPIC 11 – MULTITHREADING

- THREAD
- THREADING MODULE
- THREAD SYNCHRONIZATION

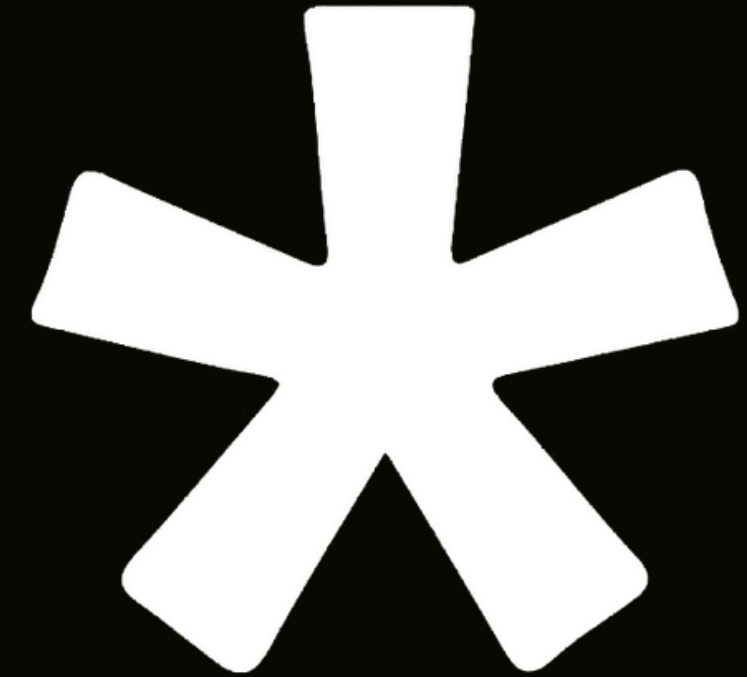
TOPIC 12 – UNIT TESTING WITH PYUNIT

- TESTING
- TESTING TYPES AND METHODS
- UNIT TESTING
- WHAT IS PYUNIT?
- TEST SCENARIO AND TEST CASES

TOPIC 13 – PYTHON WEB FRAMEWORKS

- INTRODUCTION TO DJANGO FRAMEWORKS
- DIFFERENCE BETWEEN A APP AND PROJECT
- WHAT ARE MIGRATIONS AND WHY WE DO THAT
- ADMIN PART
- HOW TO CREATE SUPERUSER IN PYTHON
- VIEWS IN PYTHON
- URL ROUTING
- TEMPLATE CONFIGURATION
- WHAT ARE MODELS
- MODELS AND ADMIN LINKUP
- MODEL FORM CREATION
- STATIC FILES AND SERVING STATIC FILES IN DJANGO
- FORM VALIDATION
- FORM IN VIEW
- ADDING BOOTSTRAP TO DJANGO
- FORM AUTHENTICATION
- ADD LOGIN FORM IN BOOTSTRAP
- HOW TO RENDER IMAGES AND VIDEOS ON OUR SITE
- OVERVIEW OF FLASK, BOTTLE, PYRAMID, FALCON

TOPIC 14-ASSINGMENTS AND PROJECTS EXPLANATION



Web Development

TOPIC 1 - WHAT IS WWW

- WEB DEVELOPMENT BASIC, ITS NEED
- HISTORY AND BRIEF INTRODUCTION

TOPIC 2 - THE BIG THREE : HTML5, CSS AND JAVASCRIPT

- WHAT IS HTML AND HTML5, CSS AND JS
- HTML ELEMENTS
- BASIC TAGS, ATTRIBUTES
- CHARACTER ENCODING, HTML 'META' TAG & VIEW SOURCE
- MORE TAGS, DO'S ANDDON'TS
- YOUR FIRST WEB PAGE
- PROJECT 1

TOPIC 3 - MORE ON HTML 5 ATTRIBUTES

- GLOBAL & NON-GLOBAL ATTRIBUTES
- ACTIVITIES – ATTRIBUTES
- SEMANTIC MEANING AND ELEMENTS
- NEW HTML5 SEMANTIC ELEMENTS
- DIFFERENTIATING SEMANTIC ELEMENTS
- <ARTICLE> AND <SECTION> ELEMENTS
- NEW INPUT TYPES AND NEW ATTRIBUTES
- HTML5 WEB STORAGE

TOPIC 4 - MORE ON HTML 5 IMAGES AND HYPERLINK

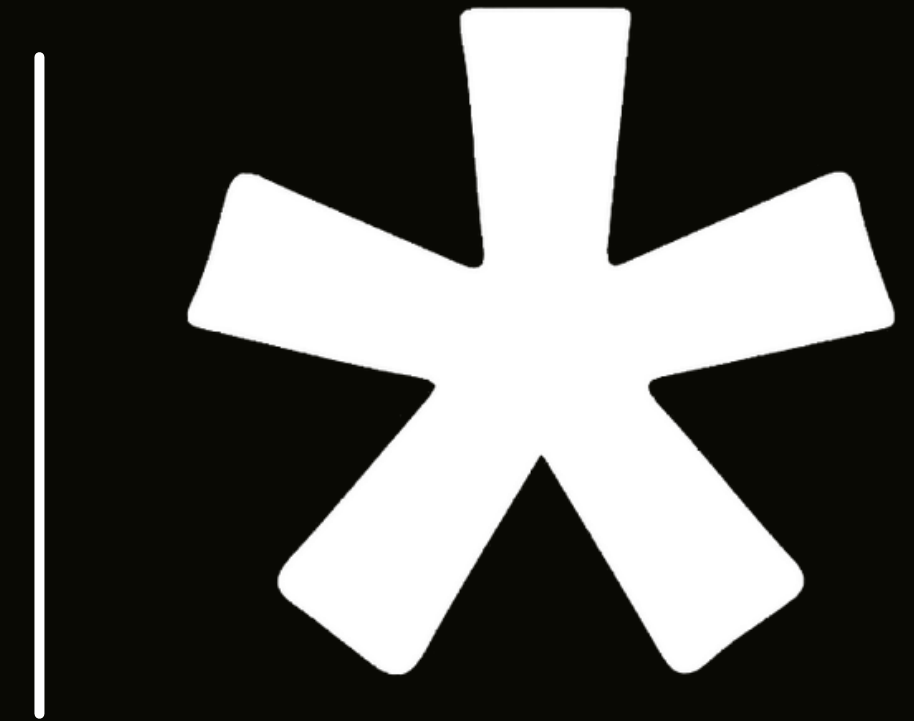
- THE 'ALT' ATTRIBUTE
- DECORATIVE IMAGES
- THE 'HREF' AND 'TARGET' ATTRIBUTES
- PROJECT 2

TOPIC 5 - CSS 3

- INTRODUCTION AND EXAMPLE
- CSS STYLE ,LINKS AND TAGS
- RULES : SELECTOR AND DECLARATIONS
- COMMON CSS PROPERTIES
- MARGIN AND COLOR, UNITS: PX, EM, REM, %, VH, VW
- STYLING LISTS
- SELECTORS
- CASCADING: INHERITANCE AND PRECEDENCE
- CSS BOX MODEL
- ANIMATION , TRANSITION AND TRANSFORMATION
- MEDIA QUERIES

TOPIC 6 - A WORLD OF POSSIBILITIES (MORE ON HTML5 WITH CSS)

- TABLES (TAGS, ATTRIBUTES, STYLING, ZEBRA TABLE)
- AUDIO AND VIDEO ELEMENTS
- THE IFRAMES TAG
- DECORATIVE IMAGES AND BACKGROUNDS
- PSEUDO CLASSES ANDCURSOR
- PROJECT 4



Web Development

TOPIC 7 LAYOUTS

- POSITION PROPERTY, ABSOLUTE AND RELATIVE POSITION, Z- INDEX
- SIZING AND DIMENSIONS, CORNERPIECE IMAGE
- FLEXBOX – A NEW HOPE
- MAIN AND CROSS AXES
- JUSTIFICATION AND ALIGNMENT
- ORDER
- PROJECT 5

TOPIC 8 - JAVASCRIPT

- INTRODUCTION TO JAVASCRIPT
- FUNDAMENTALS AND OPERATORS
- LOOP, STRINGS, ARRAY, FUNCTION
- OBJECTS AND PROTOTYPES
- ADVANCED JAVASCRIPT FUNCTIONS
- ERROR HANDLING AND REGULAR EXPRESSIONS
- EVENT HANDLING
- DOM AND BOM CONCEPTS
- VAR, LET AND CONST KEYWORDS
- JAVASCRIPT HOISTING
- JSON
- ARRAY, STRING, DATE AND TIME OBJECTS
- FORM VALIDATION

TOPIC 9 - JQUERY

- JQUERY HOME
- JQUERY INTRO
- JQUERY GET STARTED
- JQUERY SYNTAX
- JQUERY SELECTORS
- JQUERY EVENTS

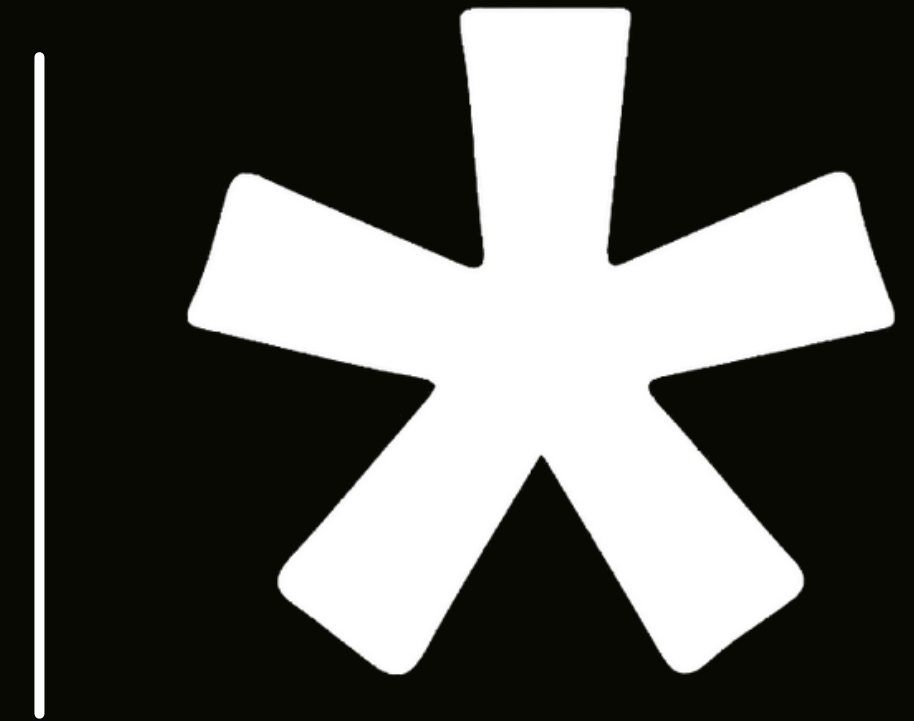
TOPIC 10- JQUERY EFFECT

- JQUERY HIDE & SHOW
- JQUERY FADE
- JQUERY SLIDE
- JQUERY ANIMATE
- JQUERY STOP ()
- JQUERY CALLBACK
- JQUERY CHAINING

TOPIC 11 -BOOTSTRAP

INTRODUCTION TO RESPONSIVE WEB DESIGN OR LAYOUT

- INTRODUCTION TO BOOTSTRAP, CSS, HTML5
- NEED OF BOOTSTRAP, WHAT IT INDUSTRY DEMANDS
- BOOTSTRAP INSTALLATION / ENVIRONMENT SETUP



Web Development

TOPIC 12 - BOOTSTRAP BASIC COMPONENT

- INTRODUCING THE GRID
- CREATING AMAZING BUTTONS
- INTRODUCING ALL NEW GLYPHICONS
- DIFFERENT FORM COMPONENTS
- USING TABLES WITH DIFFERENT CLASSES
- CREATING DROPDOWN'S
- ADDING FIXED NAVBAR TO YOUR WEBSITE
- CREATING LIST GROUPS AND ITEMS , MODAL WINDOWS (POP-UPS)
- INTRODUCING BREADCRUMBS (PAGE LOCATOR)
- CREATING COLLAPSIBLE PANELS
- BOOTSTRAP LISTS
- BOOTSTRAP SCROLLSPY
- USING PAGINATION & PAGER

TOPIC 13 - ADVANCE BOOTSTRAP, INTEGRATION WITH CSS / JS

- BOOTSTRAP MODALS
- POPOVERS
- BOOTSTRAP ACCORDION
- BOOTSTRAP SCROLLSPY
- BOOTSTRAP HELPER CLASSES
- BOOTSTRAP LIVE EXAMPLES

SINGLE PAGE RESPONSIVE WEBSITE USING BOOTSTRAP

TOPIC 14 - WHAT IS REACT JS?

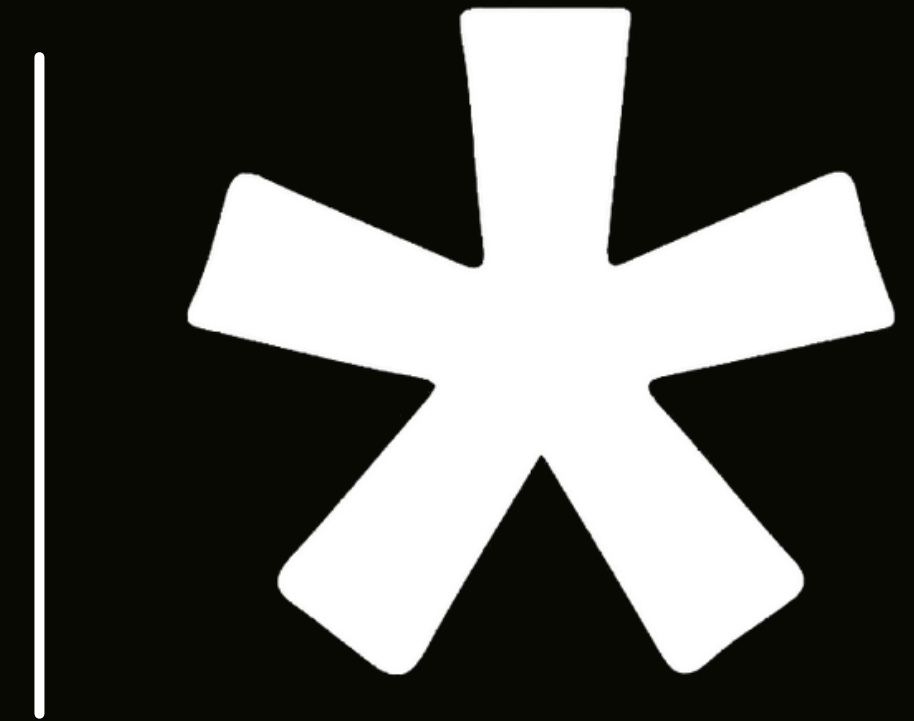
- REACT JS INTRODUCTION
- ADVANTAGES OF REACT JS
- WORK FLOW OF REACT JS
- SCOPE OF REACT JS

TOPIC 15 - OVERVIEW OF JSX

- INTRODUCTION OF VIRTUAL DOM.
- DIFFERENCE BETWEEN JS AND JSX.
- REACT COMPONENTS OVERVIEW
- CONTAINERS AND COMPONENTS
- WHAT IS CHILD COMPONENTS?
- WHAT IS NAMESPACE COMPONENTS?
- WHAT ARE THE JAVASCRIPT EXPRESSIONS AVAILABLE IN JSX?

TOPIC 16 - REACT JS ENVIRONMENT SETUPS

- NODE SETUP
- HOW TO USE NPM?
- HOW TO CREATE PACKAGE.JSON AND PURPOSE OF IT
- BEST IDE FOR REACT JS AND HOW TO WRITE OPTIMIZED CODE IN REACT JS?



Web Development

TOPIC 17 - REAL-TIME APPLICATION BY USING REACT JS

- CREATE A REACT COMPONENT WITH JSX TEMPLATE.
- HOW TO CREATE NESTED COMPONENTS?
- WHAT IS REACT JS RENDER?
- REACT PROPS OVERVIEW.
- INTRODUCTION OF PROPS VALIDATION WITH DATA TYPES.
- FLOW OF STATES, INITIALIZE STATES AND UPDATE STATES.

TOPIC 18 - REACT JS FORMS AND UI

- LISTS OF FORM COMPONENTS.
- SETUP CONTROLLED AND UNCONTROLLED FORM COMPONENTS.
- CONTROL INPUT ELEMENTS.
- HOW TO SET DEFAULT VALUES ON ALL FORMATS OF INPUT ELEMENTS.
- REACT JS FORM VALIDATIONS.
- HOW TO WRITE STYLES

TOPIC 19 - ROUTING IN REACT JS AND OTHER JS CONCEPTS

- SINGLE PAGE APPLICATION OVERVIEW
- HOW TO CONFIGURE REACT ROUTER?
- HISTORY OF ROUTER
- HOW TO HANDLE CONDITIONAL STATEMENT IN JSX?

TOPIC 20 -EVENT HANDLING IN JSX

TOPIC 21 -HOW TO WRITE STYLES IN REACT JS

TOPIC 22 -REACT ROUTER WITH NAVIGATION

TOPIC 23 -FLUX , REDUX OVERVIEW

TOPIC 24 - HOOKS

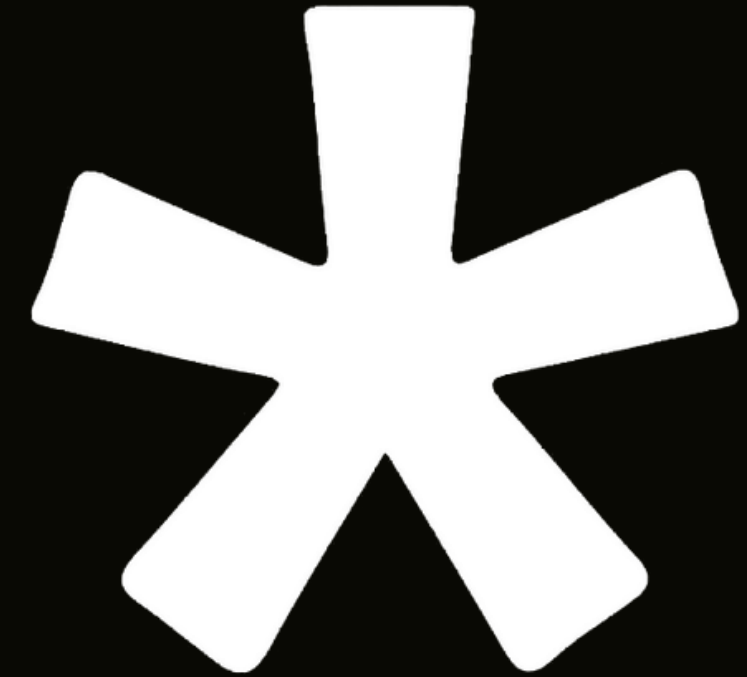
- UNDERSTANDING HOOKS
- THE USESTATE HOOK
- SIDE EFFECTS USING THE USEEFFECT HOOK
- THE USECONTEXT HOOK
- THE USEREDUCER HOOK
- WRITING YOUR OWN HOOK SECTION

TOPIC 25 - CODE SPLITTING

TOPIC 26 - NEW FEATURES OF REACT

TOPIC 27 - WEBPACK API AND RESTAPI IN REACT

- WEBPACK AND ITS USE
- SETTING UP AND INSTALLING



Web Development

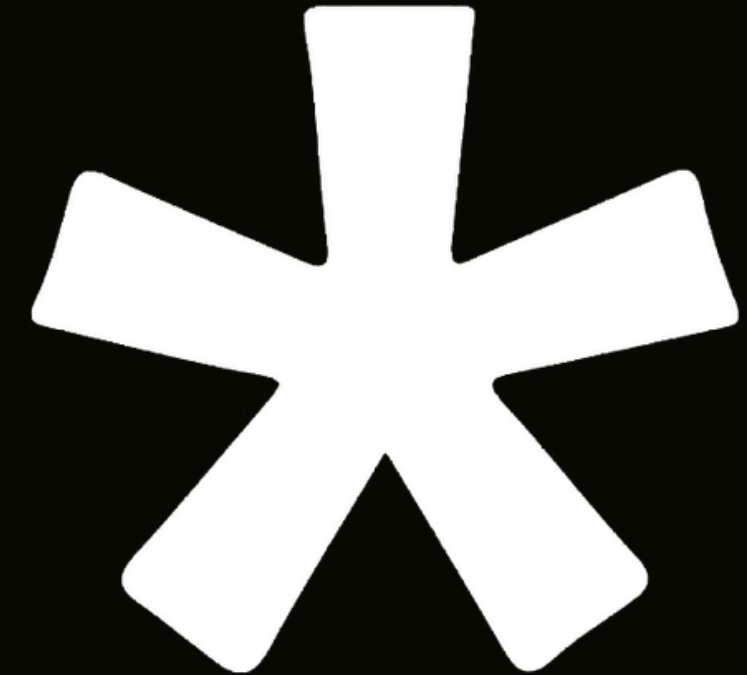
TOPIC 28 - INTRODUCTION TO NODE JS AND EXPRESS JS

- WHAT IS NODE JS?
- WHAT IS EXPRESS JS?
- NODE JS INSTALLATION STEPS
- THE NODE PACKAGE MANAGER
- HTTP MODULES
- NODE JS FILE SYSTEM
- EXPRESS JS ROUTING AND HANDLING STATIC FILES
- BUILD REST API USING NODEMON
- NODE JS WITH MONGODB
- NODE JS AND CRUD OPERATION

TOPIC 29 - WEB HTTP API

- HTTP PROTOCOL
- CREATING SERVICES
- AN INTRODUCTION TO DEPENDENCY INJECTION
- SIGNING UP WEB API
- INTRODUCTION TO OBSERVABLES
- INTRODUCTION TO JSONP
- GETTING THE DATA USING HTTP AND JSONP
- CREATING THE WEATHER MODEL CLASS
- COMPONENT LIFECYCLE
- DISPLAY AND TEMPLATES

TOPIC 30 - REAL TIME PROJECT WORK



Program Highlights

1

Basics To Advanced

learn From Basics of Full stack to Advanced Contents.

2

Industry Oriented Projects

For Better Understanding multiple Project work.

3

Hands On Practice

More emphasis on Practical Training Than Therotical.

4

5+ Years Experienced Faculty

Expereinced Mentor for Better quality Understanding.

5

Full Time lab

Labs are available full day for practicing on technology.

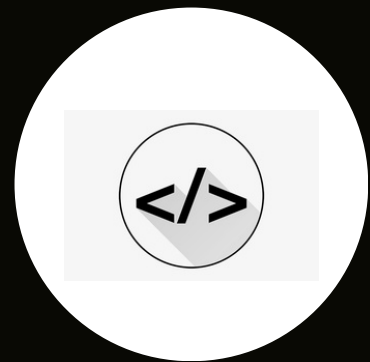
Other Technologies at SPARK



Android



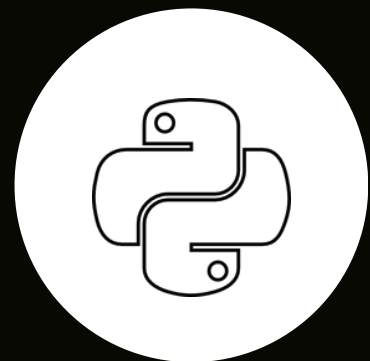
Java



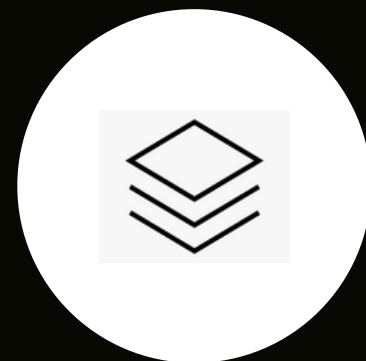
Web
Development



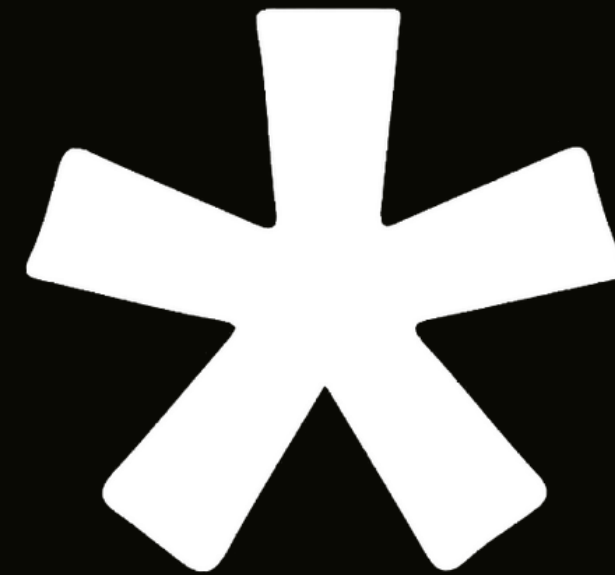
Software
Testing



Python



Full Stack
Development



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