FULL STACK DEVELOPERS: End-to-End Developer

Responsibility: is to develop web apps.

PROGRAMMING LANGUAGE : Core Java

UI TECHNOLOGIES : Html, Java script, CSS

WEB TECHS : ADV Java (Servlets, JSP, JDBC)

WEB FRAMEWORKS : Spring, Spring Boot, Hibernate, Data JPA (SERVERFRMWs)

UI FRAMEWORKS : React JS, Angular

DATA BASE : Oracle, MV SQL

CLOUD TECHS : Spring Cloud, AWS

SDLC MODELS : Waterfall, V Model, Agile

TOOLS(DEVOPS) : Postman, Swagger, Docker, Github, Jira

Q) What is a Software?

Software is a collection of programs.

SOFTWARE

SYSTEM S/W APPLICATION S/W

DESKTOP WEB APPLN MOBILE APP

Q) How to develop Software S/W applications?

To automate manual processes.

Different types of softwares are :-

1. System Software
2. Application s/w
3. Embedded S/w
4. Medical S/w
5. Mechanical S/W

System Software:

* + - Any s/w that will interact with hardware.
    - Ex: O.S, Drivers (USB drivers, Speaker drivers), Compilers
    - System software can be developed by C, C++

Application S/W:

* + - S/W that are developed depending on end-user requirements.
    - It is software that is used to develop coordinated tasks for the better benefit of the end user.
    - Application S/W’s can be developed by using Java, .net, Python

App S/W’s

1. Web applications
2. Mobile applications

**DESKTOP APPLICATION WEB APPLICATION**

1. **The appln that was installed on single machine 1. The Appn that was deployed on**

**Server and can access via. BROWSER and internet**

1. **Are also called single-user applications 2. Web appns are also called multiuser appns.**
2. **Desktop application can be developed using 3. Web appns can be developed by using**

**Languages like C, C++, Java, C#.net full-stack Java, .net, etc.,(Technologies, Frameworks)**

1. **We have to develop appn manually. 4. We cannot install Web appns but we can access**

**Web appn via Browser and internet.**

Web appns are of 2 types:

1. Static Web application
2. Dynamic Web application

Static Web appn: The appn whose content is common for all users is called static web appn.

Static web appns can be developed by using UI Technologies (HTML, JAVASCRIPT, and CSS)

Ex: Movie review websites, blogs, and tutorial websites.

Html: Hyper Text markup Language

* Html is used to design Webpages
* Html is used to display content on Browser in a proper format.

Front End Back End Database

Browser React JS Java

Angular C#.net

Mobile Python

Php

Html, CSS, JS

Business LOGICS + DATABASE BACK END

Swift SQL

Flutter NO SQL

Java

Python

.net

Q) What is SDLC?

Full form: Software Development Life cycle

SDLC is an approach that is followed by S/W companies to develop applications fastly and efficiently.

SDLC models:

1. Waterfall
2. V-Model
3. Spiral
4. Rad
5. Agile( current)

Q) What is PDLC?

Full-Form: Program Development Life cycle

PDLC is an approach that was followed by programmers to develop programs fastly and efficiently.

Steps to be followed:-

1. Problem Definition
2. Creating a solution for the system
3. Algorithm
4. Flowchart
5. PRS (Program Requirement Specification)
6. Coding
7. Testing

PROBLEM

APPLY KNOWLEDGE

READ

Understand the problem

Identify a solution for the problem Apply basic maths for the solution and &

Apply LOGIC

PROBLEM DEFINITION:

1. Read the problem
2. Understand the problem
3. Identify a solution for the problem by applying some knowledge
4. Apply Basic maths for the solution and Write LOGIC
5. Applying Programming Rules, Syntax, and Concepts for Logic and Writing a program.

ALGORITHM: Step-by-step manual process of the solution.

FLOWCHART: Diagrammatic representation of the algorithm.

Q) Data :

* Collection of raw facts
* Number, character, audio, video, streaming data, text
* Store the data, perform the data, and present the data.

DATA

STORE DATA

MEMORY

TEMPORARY MEMORY PERMANENT MEMORY

RAM HARD DISC

* VARIABLE – single value
* ARRAY- multiple homogenous values Ex: Integer values 5, Int array, String array.
* OBJECT- 5string values, (complete info of student)(single user)
* COLLECTION- 5 character values, group of objects, (100 students)(multiple users)

FILES DATABASE

DATA RELATED CODE RELATED SQL NO SQL

.jpg .java Oracle MongoDB

.img .css my SQL Hbase

.txt .py Sql Server casandra

.doc

.pdf

NUMBER CHARACTER PHOTO VIDEO AUDIO TEXT SPEECH STREAMING DATA

Integer (without decimal point )

Floating point (with decimal point) Python, pandas

Ex: google map, amazon, swiggy.

‘alphabet’

‘9’

(inside a single quotation)

Q) What is a number?

A number is a digit or sequence of digits with or without a decimal point.

Q) What is an integer?

A number without a decimal point is called an integer.

Ex: 10, 200, 5000

Ex: phone no, acc.no, debit card no, aadhar card no.

Q) What is a floating point?

A number with a decimal point is called a floating point.

Ex: 2.3, 5.6, 7.88, 888.8.

Ex: percentage, basic salary, DA, height, weight.

Q) What is a character?

Character is an alphabet or digit or symbol that was declared within single quotes.

Ex: ‘a’, ‘@’, ‘9’

Q) What is a string?

* String is a group of characters or alphanumeric characters.
* String value must declare within double quotes.

Ex: “Sathyatechnologies”,” BAG478Y87R”, “ TS0877CC73838”.

Ex: Password, email id, youtube comments, PANcard.

Q) What is Boolean?

Will return either true or false.

TOKENS:

Tokens are the programming elements which are used to construct the program.

Different types of Tokens are:

1. Literals - aph- a-z, A-Z. – Digit 0-9 –Symbol -@,!
2. Constants
3. Keywords if, else, while, for, do, public, static
4. Identifiers variable, method, class, object
5. Operators
6. Literal:

Literal is a value that can be modified (Even Data is a Literal)

1. Keyword:

Keyword is a reserved word which has a special meaning.

Every language have keywords.

Ex: if, else, while, for , do, static, public

1. Identifiers:

Identifiers are user-defined names given for programming elements.

Variable – variable is the name given for a particular memory location.

Purpose of variable – is to store the value

How many values can be stored in a variable – a single value

int empno = 1001;

Data type variable name value

Method – It is used to perform a specific task

Ex: addition, subtraction, deposit withdrawal, check balance, transfer fund.

ENGLISH PROGRAMMING

Alphabets Literals

Words Keywords

Names Identifiers

Grammar Syntax

Sentence Statement

Paragraph Program

Story S/W appn

DATA TYPES:

* Will specify the type of data that we store in memory.
* Data types are classified based on range and size.

1 2 4 8

DATA

number character string

int ‘ ‘ “ “

float char-2 string

integer float

byte -1 float-4

short-2 double-8

int-4

long-8

Q) How to create a variable?

By using Datatype

Syn to create variable – data type varname = value;

int x=5; **AO(Arithmetic Operator)**

**int x = 5; EOS**

**(End of statement)**

**data type variable name value**

**DATATYPE SIZE RANGE EXAMPLE**

|  |  |  |  |
| --- | --- | --- | --- |
| byte | 1 byte | 0-255 | byte a= 23; |
| short | 2 bytes | -32768 to + 32767 | short s= 23989; |
| int | 4 bytes | -21474833648 to  +21474833648 | int x= 55555; |
| long | 8 bytes | -19 digit no  +19 digit no | long acc.no= 789228; |
| float | 4 bytes | ------------------------ | float a = 2.3f; |
| double | 8 bytes | ------------------------ | double d = 4.5; |
| char | 2 bytes | ------------------------ | char ch= ‘a’; |
| string | ------------(no size- infinity) | ------------------------ | string s= “sathya”; |