Core Java:

1. JDK Setup
2. First Program
3. Developmnt structure
4. JDK 15 and Eclipse Setup
5. Programing elements
6. Printing in Command prompt
7. Local variables
8. Unary Operators
9. Command line arguments
10.   if block
11.   nested if blocks
12.   if blocks with unary operators
13.   else block
14.   if-else blocks inside if block
15.   if-else blocks inside else block
16.   if-else blocks with unary operators
17.   ternary operator
18.   switch-cases
19.   for-loop

20. break and continue
21. nesting of loops
22. labeled loops
23. for-each loop
24. while loop
25. do-while
26. Methods
27. attributes
28. SIB
29. IFR and Multiple classes
30. Object and reference variable
31. this key word
32. constructors
33. constructor overloading and this()
34. IIB
35. objects count
36. Encapsulation
37. Inheritance
38. super() calling statement
39. packages

40.   access levels
41.   abstrcat classes
42.   interfaces
43.   method overloading
44.   method overriding
45.   auto widening
46.   explicit narrowing
47.   auto upcasting
48.   explicit down casting
49.   achieving polymorphism
50.   final key word
51.   classpath
52.   Javadoc, javap and jar commands
53.   Scanner class
54.   Eclipse
55. Wrapper classes basics
56. auto boxing and auto unboxing
57. why do we require Exception Handling

58. try-catch
59. try-catches
60. try-catch-finally
61. exceptional conditions of finally
62. return statement
63. Errors and Exceptions
64. Checked and Unchecked
65. throws
66. throw
67. throws in overriding
68. assertions
69. toString
70. equals
71. hashCode
72. Garbage Collection and clone
73. reflection api
74. basics
75. advanced
76. annotations
77. static imports

98. maps
99. iterators
100. sorting
101. TreeSet and TreeMap
102. sorting map based on values
103. modifying collections classes as synchronized
104. concurrent package
105. sort even and odd separately
106. basics
107. advanced
108. basics
109. readers and writers
110. streams
111. serialization
112. adv serialization and externalization
113. PrintStream
114. serialVersionUID
115. forEach() method in Iterable interface.
116. default and static methods in Interfaces.
117. Functional Interfaces and Lambda Expressions.

118. double colon (::) Operator
119. forEach in detailed
120. Java Streams creation
121. Java Streams Usage
122. Java IO improvements.
123. Java Date and Time API Improvement
124. Collection API improvements
125. Concurrency API improvements

Logical coding:

1. Display petterns:

square, rectangle and triangles and much more ....
almost 145+ patterns

2. Number System:

prime, fibonacci, perfect, reverse, palindrom and much more ...

almost 60+ logical questions.

3. Strings:

every type of String manupulation....
almost 100+ logical questions

4. Arrays:

every type of arrays manupulation....
almost 100+ logical questions

5. DataStructures:

More than 20 operations in the datastructures

singular, circular, double

binary search tree

6. Algorithms:

1. Recursive
2. Bubble sort
3. Insertion sort
4. Selection Sort
5. Quick sort
6. Merge sort

SQL::

Oracle uninstallation including registry clean

Downloading Oracle

Installing Oracle
Downloading SQL developer

Installing SQL developer

Configuring Connection from SQL Developer to Oracle

Play around with one simple table

Understanding the importance of Databases

Diffenet available databases in the industry

Knowing difference between database server and database

Knowing the role of SQL in the databases.

Table creation
Inserting records in various ways

Updating records in various ways

deleting records in various ways

droping table

select command

columns with aliasing

boolean conditions with where cluase

order by

built-in functions like count, min, max, avg

finding out 2nd max and 2nd min

inner query

group by

dept wise 2nd max, 2nd min
rank with over and finding any ranked record

rownum

pagination

distinct

reading unique records with distinct

reading unique records with group by

rowid

deleting duplicate records

not null

unique

constraint

composite unique

primary

composite primary

diff between unique and primary

foreign key

conditions to be followed in the foreign key

one-to-one mapping

conditions to be followed to achieve one-to-one mapping

inner join in one-to-one

left outer join in one-to-one

right outer join in one-to-one

full outer join in one-to-one

one-to-many mapping

conditions to be followed to achieve one-to-many mapping

inner join in one-to-many

left outer join in one-to-many

right outer join in one-to-many

full outer join in one-to-many

many-to-many mapping

conditions to be followed to achieve many-to-many mapping

inner join in many-to-many

left outer join in many-to-many

right outer join in many-to-many

full outer join in many-to-many

date column
timestamp column
to_date,to_timestamp and to_char functions

self join

alter table name
drop column, add new column

add constraint

disable constraint

enable constraint

drop constraints

normalization

1st normal form (1nf)

2nd normal form (2nf)

3rd normal form (3nf)

Project database design: LMS Database design
Project database design: e-commerce Database design
Project database design: LinkedIn application Database design

Restful webservices (Rest APIs) in Springboot

1. Configuring and Downloading Springboot application

   with spring web dependency

2. importing into eclipse and configuring in application.properties
3. starting and stopping the application
4. starting application in different port numbers (multiple instances).
5. knowing about embedded Tomcat
6. understanding 404
7. making application class as a RestController
8. developing helloworld restful webservice in the application class
9. CommandLineRunner
10. Developing a separate RestController
11. all diff return types to the restful webservices

      1. void
      2. primitive data types
      3. wrapper classes types
      4. array types
      5. collections type

12. understanding Bean class development
13. returning Bean type from restful webservice
14. returning Bean type with has-a from restful webservice
15. returning Bean type with collections from restful webservice
16. input through PathVariable
16. multiple PathVariables
17. understanding bad input (400 error code)
18. required, name, value attributes of PathVariable
19. input through RequestParam
20. understanding query string
21. multiple RequestParams
22. defaultValue, required, name, value attributes of RequestParam
23. RequestBody
24. Advanced Rest Client (ARC)
25. JSON object format
26. File Upload
27. Same request with multiple Files upload
28. Same request with Files upload and text parts
29. POI integration
30. Excel file upload
31. Excel file reading with POI
32. mail sender dependency
33. sending mail from restful webservice
34. ResponseEntity importance
35. ResponseEntity through static methods
36. ResponseEntity through constructors

37. ResponseEntity with diff status codes(404, 400, 500)
38. ResponseEntity with Response Headers (content-type, refresh, content-disposition)
39. File download and auto reload
40. diff types of http methods (post, get, put, delete)

Spring Data JPA:

1. Downloading Springboot application with Spring web, Data JPA and H2 dependencies
2. inmemory databases
3. Configuring H2 database
4. Entity development.
5. Repository development.
6. CRUD operations.
    1. save
    2. saveAll
    3. findById
    4. findAllById
    5. findAll
    6. count
    7. deleteById
    8. deleteAll
    9. deleteAllById
    10. delete
7. unique, not null
8. custom finder methods
    1. findByField methods
    2. findAllByField methods
    3. JQL with @query
    4. SQL with @query
9. auto generates
10. Lombok

10. composite unique key
11. composite primary key
12. service layer
13. one-to-one mapping
   1. uni-directional
   2. bi directional
     2.1. mappedBy
       2.2. jsonIgnore
       2.3. service layer
14. one-to-many mapping
   1. uni-directional
   2. bi directional
     2.1. mappedBy
       2.2. jsonIgnore
       2.3. service layer
15. many-to-many mapping
   1. uni-directional
   2. bi directional

<u>Spring Security:</u>

1. Security Setup
2. Inmemory Credentials and Password encoding
3. Reading Credentials from DB
4. Authorization Patterns
5. Tesing Authentication through ARC
6. Setting up Angular
7. Tesing Authorization through Angular
8. Interception Filters
9. Guard Services
10. JWT implementation in Spring Boot app and calling from Angular app

Spring Microservices:
1. Monolithic
2. Disadvantages of Monolithic
3. Microservices
4. Advantages of Microservices
5. Developing helloworld Microservice
6. Open feign
7. Eureka server
8. Feign client with Eureka server
9. Spring cloud load balancer
10. Spring cloud API Gateway
11. Fault Tolerance
12. Circuit Breaker
13. Resilience4j & Spring AOP
14. Spring cloud config server
15. Sleuth
16. Zipkin
17. Rabbit MQ
18. Docker
19. Kubernetes

HTML

1.   HTML INTRODUCTION
2.   HTML BASIC

 Html structure

3.   HTML FORMATTING
<heading>
<paragraphs>
 <font>
<b>/<I>/<u>/<mark><ins><del>

<em><sub><sup>
4.   HTML LIST

<dl>
5.   HTML MARQUEE
6.   HTML PRE AND HORIZONTAL RULE
7.   HTML IMAGE
    <src>
<alt>
<width>
<height>
8. HTML ANCHOR

    Internalpage link

    <target>
9.   HTML TABLE
<THEAD>
<TH>
<TBODY>
<TR>,<TD>
<TFOOT>
<ROWSPAN><COLSPAN>
<BORDER>

10.   HTML IFRAME
11.   HTML AUDIO
         <CONTROL>
         <SOURCE>

12.   HTML VIDEO
         <CONTROL>

         <SOURCE>
         <WIDTH>
         <HEIGHT>
         <POSTER>
13. HTML FORM

    ACTION

    METHOD

14. HTML FORM ELEMENT
      <INPUT>
      <LABEL>
      <SELECT>
    <TEXTAREA>
    <OPTION>
    <BUTTON>
    <FIELDSET>
    <LEGEND>
15. HTML INPUT TYPES
    TYPE=INPUT

    TYPE=BUTTON

    TYPE=CHECKBOX

     TYPE=RADIO

     TYPE=EMAIL

     TYPE=SUBMIT

     TYPE=TIME/DATE/MONTH

     TYPE=TEL

     TYPE=PASSWORD

16.HTML <ARTICLE>

CSS:

CSS Introduction

CSS Implementation

CSS Basic Selectors

CSS Color & Background Color

CSS Borders

CSS Outline

CSS Padding

CSS Margin

CSS Height/Width
CSS Min-Height/Max-Height

CSS Min-Width/Max-Width

CSS Box-Sizing

CSS Overflow
CSS Border-Radius

CSS Box-Shadow

CSS Float

CSS Clear

CSS Font

CSS Text Formatting

CSS Text-Decoration

CSS Word

CSS Text-Shadow

CSS White-Space

CSS Text-Overflow

CSS Writing-Mode

CSS Column-Count

CSS @font-face Rule

CSS with Google Fonts

CSS List-Style

CSS Background-Image
CSS Background-Attachment

CSS Background-Size

CSS Background-Origin

CSS Background-Clip

CSS Color Modes

CSS Gradient Background

CSS Opacity

CSS Background-Blend-Mode

CSS Mix-Blend-Mode

CSS Display

CSS Visibility

CSS Html Basic Layout Design

CSS Position

CSS Z-index
CSS Media Queries

CSS Table Properties

CSS Resize

CSS Cursor
CSS3 Text-Decoration-Thickness

CSS3 Text-Underline-Offset

CSS Display Table

CSS Advanced

CSS Units
CSS Variables - var()

CSS Calc() function

CSS Clip-Path

CSS Shape-Outside

CSS Filter

CSS Transition

CSS Transform 2D

CSS Transform 3D

CSS Perspective

CSS Transform-Style

CSS Backface-Visibility

CSS Animation

CSS Animation-Fill-Mode

CSS Object-Fit

CSS User-Select
CSS Box-Decoration-Break

CSS Quotes

CSS Border-Image
CSS Advance (Combinator Selectors)

CSS Advanced (Attribute Selectors)

CSS Pseudo-Classes Selectors

CSS Pseudo Element Selectors
CSS Before and After Pseudo Elements

CSS Attr() function

CSS Counter

CSS Caret-Color

CSS @import Rule - Import StyleSheet

CSS with Icon Fonts

CSS Scrollbar Styling

CSS Display Flow-Root

CSS CurrentColor

CSS3 ::Marker Pseudo Element

CSS !important

CSS3 @supports

CSS : Placeholder-Shown

CSS List Style Type : String

CSS Scroll-Behavior

CSS Scroll-Snap
CSS File-Selector-Button Pseudo Element

CSS Backdrop Filter

CSS3 :is() Pseudo Class

CSS Text-orientation

CSS :Focus-within Pseudo Class

CSS Accent-Color

CSS Prefers-color-scheme

CSS3 Aspect-Ratio

CSS Display-Mode @media rule

CSS Fullscreen Pseudo class

CSS Min() Max() Clamp() Function

CSS Orientation Media Rule

CSS :has Pseudo Class

CSS Print Media

CSS @page at-rule
CSS Break-Before Break-After & Break-Inside

CSS Inset

CSS Hypens & Hypenate-Characters

CSS Object-View-Box

CSS Nesting

CSS Grid

CSS Grid Layout Introduction
CSS Grid Building with Rows & Columns

CSS Grid-Gap

CSS Grid Items Positioning

CSS Grid Items Spanning

CSS Grid Lines Naming

CSS Grid Area Naming

CSS Grid MinMax function
CSS Grid Implicit & Explicit Grid

CSS Grid Items Alignment

CSS Grid Tracks Alignment

CSS Grid Auto-Fill & Auto-Fit

CSS Grid Fit-Content

CSS Grid Order Property

CSS Grid - Nested Grids

CSS Grid - Overlapping Grid Items

CSS Flex

CSS Flexbox Introduction

CSS Flexbox Flex-Direction

CSS Flex-Wrap & Flex-Flow

CSS Flexbox Justify-Content

CSS Flexbox Align-Items

CSS Flexbox Align-Content

CSS Flexbox Align-Self

CSS Flexbox Order
CSS Flexbox Flex-Grow

CSS Flexbox Flex-Basis

CSS Flexbox Flex-Shrink

CSS Flexbox with Margin Auto

CSS Flexbox - Nested Flex

CSS Flexbox - Align Form Elements
Create Website Layout with CSS Flexbox

Java Script:

JS Introduction
JS Implementation

HTML Tags in Javascript

JS Comments

JS Variables
JS Variables (Let & Const)

JS Data Types

JS Arithmetic Operators

JS Assignment Operators

JS with Google Chrome Console

JS Comparison Operators

JS If Statement
JS Logical Operators

JS If Else Statement

JS If Else If Statement

JS Conditional Ternary Operator

JS Switch Case

JS Alert Box
JS Confirm Box

JS Prompt Box

JS Functions

JS Functions with Parameters

JS Functions with Return Value

JS Global & Local Variable

JS Events
JS While Loop
JS Do While Loop

JS For Loop

JS Break & Continue Statement

JS Even & Odd with Loops

JS Nested Loop

JavaScript Nested Loop - II

JS Arrays

JS Create Arrays Method - II

JS Multidimensional Arrays

JS Modify & Delete Array

JS Array Sort & Reverse

JS Array Pop & Push

JS Array Concat & Join

JS Array Slice & Splice

JS isArray

JS Array index
JS Array Includes
JS Array Some & Every

JS Array find & findIndex

JS Array Filter

JS Array Methods

JS forEach Loop

JS Objects

JS Objects - II
JS Array of Objects
JS Const Variable with Array & Objects

JS For in Loop

JS Map Method

JS String Methods

JS String Methods - II

JS Number Methods

JS Math Methods

JS Date Methods

JS Button

JS HTML DOM
JS DOM Introduction

JS DOM Targeting Methods
JS DOM Get & Set Value Methods

JS DOM querySelectors

JS DOM CSS Styling Methods

JS addEventListener Method

JS Forms

JS Form Events
JS Form Events - II

JS Effects

JS Interval

JS Timeout

JS Browser BOM

JS History Object

Angular:

1. Installation
2. Unins   tallation
3. Creating a project and understanding default code
4. Creating a component
5. Creating a component with different options
6. Creating a component without ng command
7. typescript datatypes and fields declaration
8. typescript methods declaration
9. typescript methods body development
10. access specifiers and constructor
11. bindings
12. directives
13. template variable
14. template driven forms
15. reactive forms

16. http client
17. routing
18. modular development
19. tyscript compiler
20. type assertion
21. arrow functions
22. advanced directives
23. http with template variables
24. one-to-one mapping
25. one-to-many mapping
26. many-to-many mapping

GIT:

Version control

    Introduction

    Uses

    Need

    Types

    Examples

    Realtime why when how we use.
Difference between types of version control

Introduction to git

Features of git/ why git/ benefits of git

Diagrammatic explanation of git

Introduction to git hub

Features of git hub/ why github/ benefits of github

Branching statagy in realtime environment

Instalation of git, git hub, tortoise git

Introduction to repository

Creating repository in github

Basic commands of git

How to execute commands in git

When to use which command

Flow of realtime work life with commands

Detail discussion on daily using commands

Conflicts in git

    When we will get

    How to avoid

    How to resolve

Raising pull request
Review comments and how to reply or address

How to merge codes

Create branches

Switch branches

Full understanding of realtime work flow with commands

Flow of jira interems of git

Realtime use of github and git.
How to practice to make familiar with these tools.

Internship:

LMS Proposal

1. Course Package CRUD operations (Like Java full stack)
2. Skill CRUD operations (Like Core Java)
3. Topic CRUD operations (OOPs concepts)
4. Subtopic CRUD Operations (Like Encapsulation)
5. Skills Mapping to Packages
6. Video Upload
7. Material Upload
8. MCQ Questions Upload
9. Students Registration (Signup and detailed form submission, view my profile, change my profile)

10. General admin activities

1. Login
2. Forgotten Password
3. Remember me
4. Change Password
5. Logout

11. Students mapping to packages

12. Student Dashboard

1. My Courses
2. My Notifications
3. My Unit exams
4. My Cumulative exams
5. My Certificates

13. Payment gate way integration.
14. Video player integration
15. Exams/Tests Platform

Technologies   :
Server side: Springboot with Data JPA and Spring Security and Backend as MySQL

Client Side : Angular