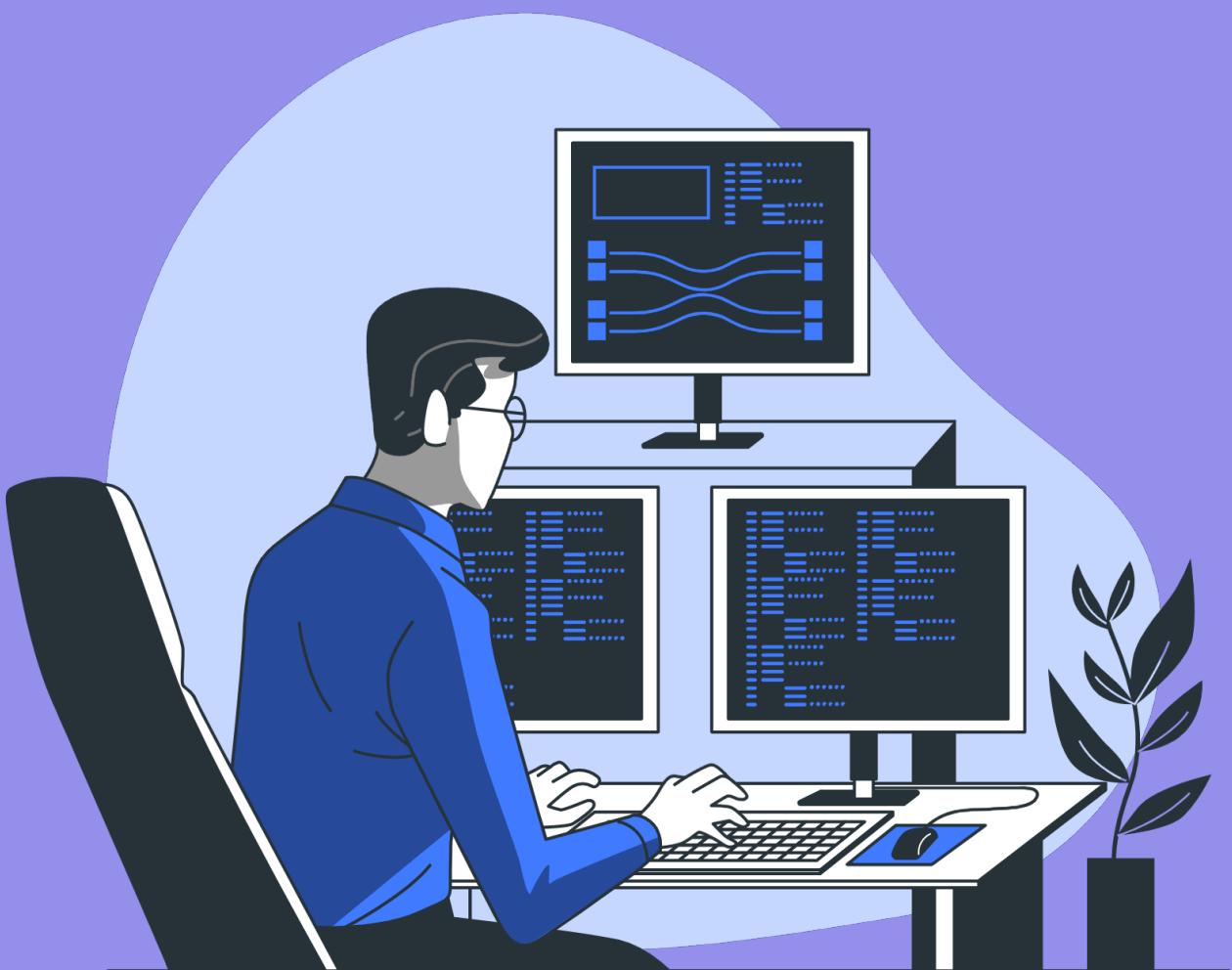


# "What is Software Engineering" Lesson Plan



## Session Agenda

- Software development : What | Why
- Software jobs in 2022 and beyond
- Full Stack Development : What | Why | How ?
- Career trajectory of FSD
- Deep dive of this FSD Relevel course
- Understanding the structure of Relevel test
- Get your doubts clarified - AMA

## Execution of the class

### Educator Introduction ( 15 mins )

- Greet the students
- Introduce yourself. Talk about your high points and how you as an instructor can add values in the preparation journey of the students
- Since this is the very first session, ensure the students are made comfortable. Interact with the students and talk about their expectations.
- Ease out the class environment, so that every student feels comfortable presenting their thoughts

### Software development : What | Why ( 15 mins )

#### Expected discussion points :

- Explain what is a software
- Explain what is the meaning of Software development
- Convince learners why software development is so important in year 2022 and ahead

#### Pointers that can be used to explain above points :

##### Software

It's basically the combination of instructions and data that tells the computer how to operate/execute

##### Software Development

Various activities involved for creating, designing, deploying and supporting above software is called **Software development**.

#### Why should I try to become a software developer/ or stay in the software development field

- It brings great power. One can literally make anything, from a simple blogging website to a complex search engine
- Allows you to make your product/ideas reach all nooks and corners of the world.

- To become a software developer, neither does your age or self-perceived intellectual capability matters. So literally anyone can become a Software developer. All it takes, is a computer, internet and the interest
- And the most important, a lot of money !!!! Software development jobs are one of the highly paid job offerings

## Software jobs in 2022 and beyond ( 15 mins )

### Expected discussion points :

- Talk about how software development and jobs has evolved over the period of time specially in the last few years
- Stress upon the changes that happened because of Covid
- Talk about how Software jobs are still standing the test of the time, when every other sectors are facing decline
- Also try to touch upon the job prospects in year 2022 and beyond
- What are the current challenges for budding software engineers and how to make it big in this industry

### Pointers that can be used to explain above points :

#### How have software jobs evolved in the last couple of years ?

- Whole world has witnessed the unprecedented impacts of Covid-19. It has badly impacted almost all the countries and their economies. It had similar impacts on the IT sector as well. Few of the major changes that happened in the last couple of years have been :
- Moving from offline to Online recruitment/interviews.
- Work from home is getting well accepted.
- Distributed team and remote communications.

#### High points of Software jobs in these testing times :

- When almost all the sectors saw decline, Software jobs almost remained immune to this Covid disruptions
- Software industry is built on the principle of change. When the whole world was going through the extremely tough phase of change, it was comparatively easy for the Software based jobs to adapt.

#### Job prospects :

- Since most of the companies have realized the potential of the internet in this era of multiple lockdowns, more and more companies are getting online, meaning more software development opportunities.
- Demand for software developers has never been this higher. And this will continue for many coming years
- Whole world has accepted the possibility of remote working. This has opened global opportunities for everyone. What it means, now we can sit in a small town in India and still work for an MNC operating from another part of the World.

## Challenges for the job aspirants :

- Very high competition. Every year, number of people aspiring for the jobs, is increasing with the rate higher than the current rate of job openings
- Evolving technologies. Things in IT change very fast. One has to always keep improving in order to stay relevant in the IT industry
- Lack of awareness about the right technologies.

**“Change is the only constant , in this IT world”**

- In order to be successful in this IT role, we need to constantly learn and keep abreast with the latest technologies. This course is an excellent way of learning what is relevant today in the world of software development

## Full Stack Development : What | Why | How ? ( 30 mins )

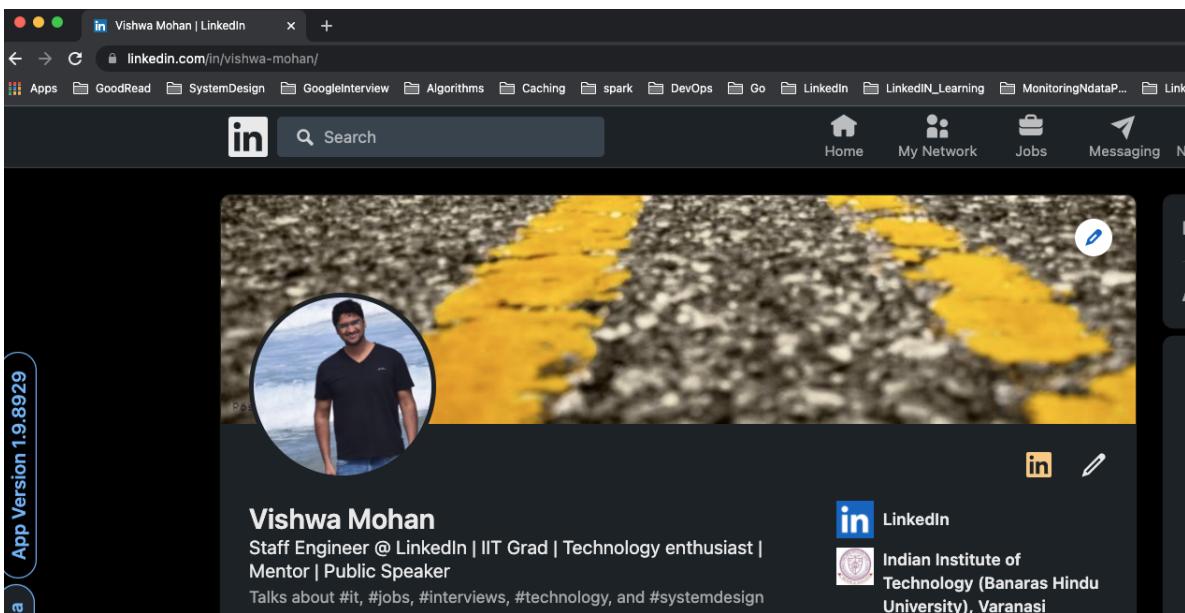
### Expected discussion points :

- Take example of an application like Facebook or LinkedIn to explain what is Web Application
- Talk about three layers of a web application
- Excite the learners by explaining how lucrative and powerful Full Stack development is in the present context
- Talk about the high level things one needs to learn for becoming a FS Engineer

### Pointers that can be used to explain above points :

#### What is a web application ?

- Applications which are rendered on devices running over the internet like browsers or apps are termed as web applications. In comparison to the legacy websites ( which have mostly static contents ) web applications are more dynamic, which allows end users both read and write capabilities.
- Few examples of web applications we are already using in daily lives are like facebook, linkedin, gmail etc.



Above is the screenshot of the webapplication [www.linkedin.com](http://www.linkedin.com)

- A web application comprises of mainly three parts :
- Front end - For building the visualization layer which mostly the end user experiences
- Back end - System that powers the data for the front end
- Database - System that enables the persistent storage of data

A full stack development requires a good understanding of all these three facets of a Web Application

## Why full stack development is so much in demand

- Companies get more from each employee, if they hire a FS engineer. So hiring a FS Engineers are the obvious choice for many companies
- You get more employable, as you can easily fit in any kind of role be it FE or BE
- Better understanding of the complete Web Application development
- You are only limited by your imaginations. Power to build anything and everything

## How to become a better FS Engineer

- Understanding of Front End technologies
- Understanding of Back End technologies
- Understanding of Databases

In order to excel in the above three layers, one need to also have the good understanding of the following points :

- Computer Science fundamentals
- Data Structure and Algorithms
- System Design

This course has everything to set you on the path of success for becoming a rockstar full stack developer.

## Career trajectory for a full stack engineer

- Huge demand for the freshers and mid experience people for the full stack development roles
- Easy to adapt in any company for the FSDs
- Hot favorites in the world of startups.
- Almost every company has the openings for the FSDs
- Higher demands means higher salary. FSDs are being highly paid in the industry across the globe.
- Since FDS, touch multiple channels in a company, resulting in better contributions and higher growth.

## A general FSDs career growth in a company might look like below :

- FSD I ( 0-2 years ) -> FSD II ( 2-5 years ) -> Senior FSD ( 4-7 ) -> Staff Engineer ( 6 -11 ) -> Senior Staff ( 10 + )  
-> Distinguished Engineer
- \* This is very generic and just for reference. The designation might change from one company to another

## Deep dive of this FSD Relevel course ( 30 mins )

### Expected discussion points :

- Talk about how this course is comprehensive enough for cracking any Full Stack Development interview
- Boost enough confidence among the learners that they can definitely succeed if they sincerely follow along this course
- Provide a high level overview of the course

### Pointers that can be used to explain above points :

#### How this course will be useful to the learners

- In this course we have got you all covered. One of the World's best course to accelerate your career in the world of Full Stack Development
- It doesn't matter what your college major was, or where you are currently working. Neither does your age or self perceived intellectual capability. With our world class industry vetted curriculum, literally anyone can learn to program and succeed as a FSD
- The course starts with the basics and takes you deep inside the intricacies of software development. We believe in learning by doing and in the process provides you the first hand experience of solving industry problems

## Flow of the FSD course

Level 1		3.5 Months 
<b>1</b>	<b>Fundamentals of programming</b>	<b>1 month</b>
	Learn about the world of web development. Use HTML, CSS and Javascript and build the prototype of an E-commerce website.	
<b>2</b>	<b>Frontend of an E-commerce website</b>	<b>1 month</b>
	In this month, you will be writing the frontend code to build an E-commerce website using React.js, React hooks and components	
<b>3</b>	<b>Backend of an E-commerce website</b>	<b>1 month</b>
	In this month, you will be building the backend of the E-commerce website. You will learn how to write API's, use databases and handle HTTP server req <a href="#">Show more</a>	
<b>4</b>	<b>Debug and Deploy your app</b>	<b>0.5 months</b>
	Make your app scalable to handle millions of users, optimize for mobile use, debug your code and deploy to see live users on your app.	
Level 2		3.5 Months 
<b>1</b>	<b>Frontend of a sales CRM website</b>	<b>1.5 months</b>
	Write the frontend code to build an sales CRM website that handles various contacts, chats and gives the user performance reports using React.js, Reac <a href="#">Show more</a>	
<b>2</b>	<b>Backend of a sales CRM website</b>	<b>1.5 months</b>
	Write the backend code for the sales CRM website. You will build API's, use databases and handle HTTP server requests using Node.js. Also learn how to <a href="#">Show more</a>	
<b>3</b>	<b>Debug and Deploy your app</b>	<b>0.5 months</b>
	Make your app scalable to handle millions of users, optimize for mobile use, debug your code and deploy to see live users on your app.	

Level 3

3.5 Months 

1

## Frontend of a Movie Booking website

1.5 months

Design and build the frontend of an application that will be widely used. Learn how to build a calendar view and allow real time seat selection using [Show more](#)

2

## Backend of a Movie Booking website

1.5 months

Allow users to book a movie seat in a location and time of their choice. Learn how to provide real time data and provide a seamless experience to the [Show more](#)

3

## Debug and Deploy your app

0.5 months

Make your app scalable to handle millions of users, optimize for mobile use, debug your code and deploy to see live users on your app.

Level 4

0.5 Months 

1

## Placement Preparation

0.5 months

Be job ready by building your portfolio, resume and LinkedIn profile. Solve common interview problems and prepare for an interview with personalised M [Show more](#)

## Along the process learn :

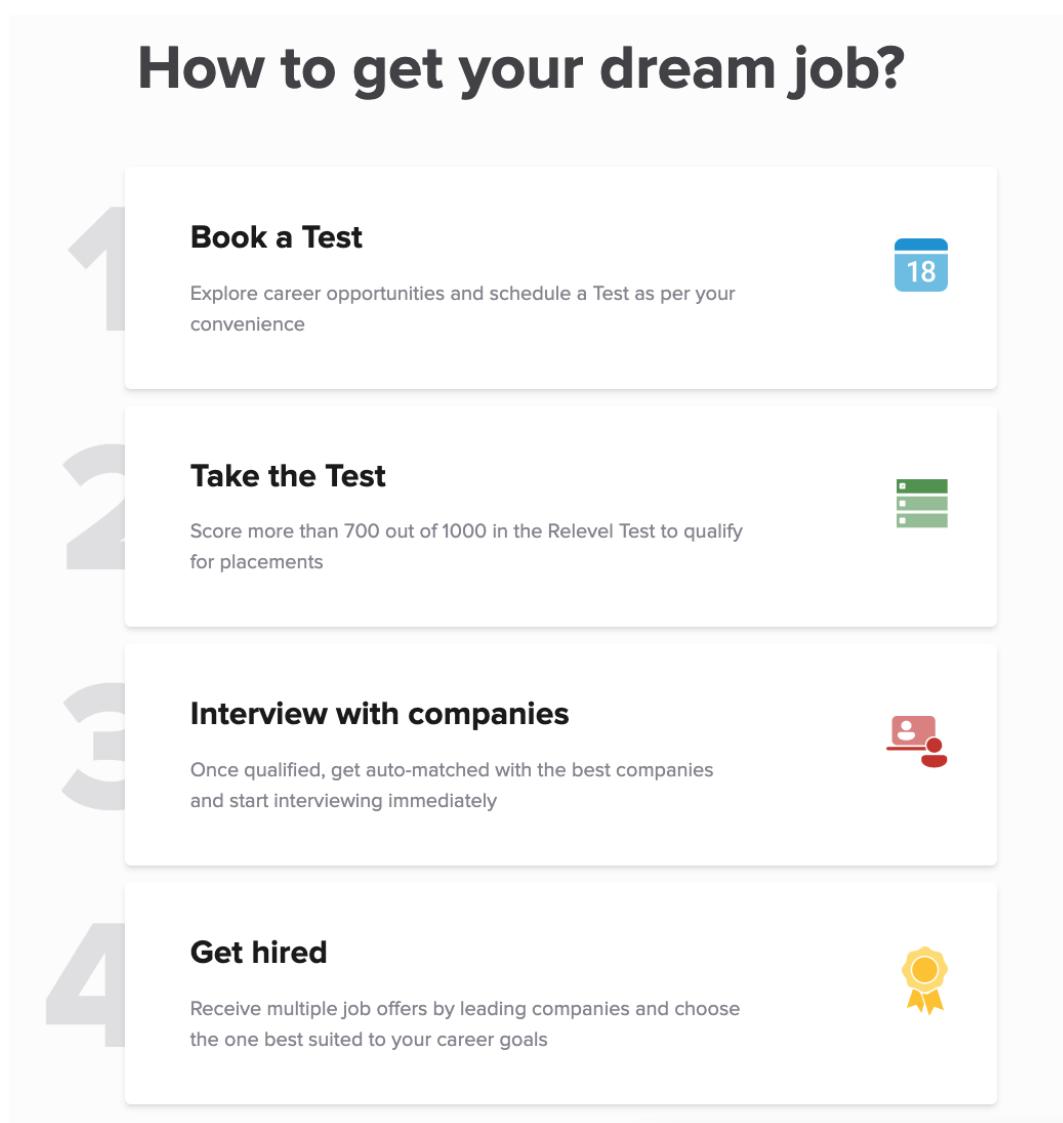
- Computer fundamentals
- Practical understanding of database
- Data Structure and Algorithms
- System Design
- Resume preparations
- Interview readiness
- Relevel test preparation

## Understanding the structure of Relevel test

### Expected discussion points :

- Talk about how the relevel test can help you get your dream job
- Talks about the skills that are checked in the Relevel test
- Discuss the different phases of the relevel test

### Pointers that can be used to explain above points :



## Skill sets tested in the relevel test



### Programming Fundamentals

Test programming fundamentals like arrays, logical operators, conditional statements, etc.



### Data Structures and Algorithms

Showcase your problem solving skills using lists, stacks, trees, queues, etc.



### HTML,CSS and React.js

Test your understanding of frontend tools



### Node.js or Python or Java

Showcase your understanding of backend tools

## Different phases of the relevel test

### Phase - I Get 150+ out of 300 to qualify for Phase II

ROUND 1

#### Back to basics

An MCQ round of 40 questions to test your knowledge of programming fundamentals

✓ 100 Marks ⏰ 45 mins

Programming Fundamentals

ROUND 2

#### Assess your algo

A DSA round with two problems to test your coding skills in a high pressure situation

✓ 200 Marks ⏰ 90 mins

DSA

### Phase - II Get 700+ out of 1000 to qualify for Relevel Placements

ROUND 3

#### Building the back

A round designed to test your ability to build backend features for an existing web application

✓ 250 Marks ⏰ 120 mins

Code Quality Backend Development

ROUND 4

#### Creation of the front

A round designed to test your ability to build frontend features for an existing web application

✓ 250 Marks ⏰ 120 mins

Code Quality Frontend Development

ROUND 5

#### Face the interview

An interview round with an experienced engineer to assess your knowledge on the specific tech stacks used for frontend and backend

✓ 200 Marks ⏰ 60 mins

Programming Fundamentals

Fundamentals of Full Stack Development

## Get your doubts clarified - AMA

### Expected discussion points :

Patiently listen to the learner questions

Help to answer the question if you are clear about their answer. In case you are not sure about the questions the learners asked, politely convince them that the releveL team will get back to them with the relevant details.