Developers Toolkit Part 1: Connecting the Frontend

This course guides participants to upskill and reskill themselves in web development technologies such as HTML,CSS, JavaScript, Node JS, ReactJS and data structures that are used in various computational problems . This course trains the participants in :
1. Basics of front end, back end development and responsive web UI design. Understand the ecosystem of NodeJS and build client-server apps.
2.Understanding the fundamentals of the data structures, core principles of coding, learning concepts behind arrays, hash tables (maps), stacks and queues.

Activity (Day1)	Activity (Day2)
Lecture (AM) - 2hrs ● (2 hrs) Overall picture/use case [NUS Money Application]. Introduction - Programming stack, Development environment (tools and debugging), Basic elements of Web page, Web images and **SVG (data visualisation)**, HTML, CSS ● Tools: Use standard **VS-code and related plug-in, Node.js**	Lecture (AM) - 2hrs ● Responsive UI design with **React**. ● Design Principles ● Intro to Server side frameworks (nodeJS, express)
Hands-ON exercises (AM) - 1 hrs ● Exercises - build static web pages with SVG graphics	Hands-ON exercises - 2 hrs ● Using React to build Responsive UI ● Set-up nodejs server ● Build NUS Money Application
Lecture (PM) - 2 hrs ● Overview of HTTP protocol (static and dynamic webapp architecture) ● **React/Flux Architecture** ● **Understanding DOM** ● Java script as a programming language (programming constructs, simple data structures)	Lecture (PM) - 2 hrs ● Introduction to **nodejs** configuration ● Calling Server side APIs with **React** ● Accessing data from **XML/JSON**
Hands-ON exercises (AM) - 2 hrs ● Exercises - build dynamic web pages with client-side Javascript. [Emphasise on basic Programming methodologies, data structures]	Hands-ON exercise: [mini-project & **Evaluation** (PM)] - 2hrs ● Build complete prototype web application with nodejs and express
Homework Exercises - Javascript.	

At the end of this course you will be able to develop elegant frontends like and connect them to the backend through APIs.