Enlistment of APTSMAS

Ancient Poets Temporal and Spatial Mobility Analysis System

# Introduction

This document ***Enlistment of APTSMAS*** aims to introduce you almost all needed knowledge before you starts dev on the APTSMAS. How to setup the dev environment and how to deploy will be introduced after. I will also include my personal experiences of my way to full stack development.

# Necessary Knowledge

Before everything start, it’s always useful to check the necessary knowledge first. If you are already a old hand, just go straight to the section 3. Otherwise, take a few minutes and have a look at what you need first.

## Frontend Learning

The frontend of APTSMAS is based on the Vue 3 eco-system. Just take the Vue 3 for a new bee is not a good idea, the propaedeutics and a clearly learning route would be better.

For a web development starter, HTML CSS and JavaScript will always be the first things to do. Take a few hours to go through HTML, knowing which tags is doing for what is enough. Then take a few hours to learn CSS, knowing which content’s style can be controlled is enough. At last, learn the JavaScript. After all these done, try to build a simple website to consolidate your knowledge. The tutorial of HTML, CSS and JavaScript can be easily got by Google. If you want a recommendation, the [MDN website](https://developer.mozilla.org/zh-CN/) will be a good starter.

Next comes the most important thing, learning the ECMAScript 2015 as least. The recommend tutorial is the [ES6 tutorial](https://github.com/wangdoc/es6-tutorial) from Ruan Yifeng. After that, take a glance at the Node.js and Webpack, understand what things they do.

Before you get touch with the Vue, I recommend you learn TypeScript. This would be easier after you learn the ECMAScript 2015. The [official tutorial](https://www.typescriptlang.org/docs/) is a good place to start.

Finally, try to learn Vue 3 by its [official docs](https://v3.vuejs.org/guide/introduction.html). Learning the option API and composable API step by step. Then, learn the [Vue Router](https://next.router.vuejs.org/installation.html) and [VueX](https://next.vuex.vuejs.org/). After these done, you have got the enough knowledge for frontend development.

P.S. If you want a book to read, I recommend the *Professional JavaScript for Web Developers (4th Edition)*.

## Backend Learning

First thing is to learn Java 8 at least, I recommend you get the book *Core Java Volume I – Fundamentals* to read. The recommend read edition is the Eleventh, which is for Java 11.

Then, try to understand what maven is and what it does.

As for Spring Boot and related things, I recommend lean by practice. The official doc of spring is not a good place to get start in my own opinion. Prepare your search engine, learning by code and learning by practice will be better.

## Python Learning

If you don’t want to change the data source of APTSMAS, you can pass this section directly. Python is used for processing data of APTSMAS and convert the data to database.

Compared with JavaScript and Java, Python is an easy program language to learn. Get any of your favorite tutorial and learn by practice is enough.

The Python code also include some SQL language, learning it according to your need.

## Linux Learning

Learning the usage of Linux command line for better code deploy. I recommend reading the book *The Linux Command Line* to learn the Linux.

# Frontend

The frontend is developed by Vue 3 with TypeScript. The recommend deploy way is the Nginx.

## Dev Env

***Read the README of APTSMAS-FrontEnd first.***

Get the node.js v14.17 and npm v7.23.0, then type command at the root working directory:

|  |
| --- |
| npm install |

This command will install all dependencies.

Next relocate to the file *vue.config.js*, mod this file to fit your backend dev URL:

|  |
| --- |
| module.exports = {  devServer: {  proxy: {  "/api": {  target: "http://localhost:8090",  changeOrigin: true,  },  },  },  }; |

Run command:

|  |
| --- |
| npm run serve |

This command will start the dev environment of frontend, you can debugger by Chrome (recommend browser). The source-maps will be generated automatically.

The recommend IDE is Visual Studio Code.

## Deploy

Run command:

|  |
| --- |
| npm run build |

This command will compile and bundle all code to the *dist/* folder. Serve this folder by Nginx or other static files server. The frontend router use the html5 history mode, and the */api* URL should be redirect to backend. So configure your server properly.

# Backend

The backend is developed by Spring Boot with Java 11.

## Dev Env

***Read the README of APTSMAS-BackEnd first.***

Setup the environment of [Java 11](https://blog.csdn.net/sigmarising/article/details/80139287) and [maven](https://maven.apache.org/) first. At the root of working directory, run command:

|  |
| --- |
| mvn clean package |

This will install all dependency and package code to jar. Use a Java IDE for development.

At *src/main/resources* there are three yaml configure file. Configure the datasource config to your own database.

## Deploy

Run command:

|  |
| --- |
| mvn clean package |

The bundled jar is in *target/* folder. Run command:

|  |
| --- |
| java -jar NameOfJar.jar |

To start the backend service (with default profile).

# Data Related

***Just read the README of APTSMAS-DataProcessing***, this file contains all things you need.

# Summary

Good luck.