Build a maintainable and robust Web APP

# Infrastructure

What support this APP running?

* Using docker containers to provide services.
  + docker-compose.yml to customize each images.
  + Build docker images.
  + Start up several docker containers run separate service for backend so new developer won’t invest much time to setup.
* Npm to manage packages.
  + Install packages for APP running.
  + Audit packages’ vulnerabilities to prevent 3rd parties’ introduced security issues.
* Git for code version management.
  + Using husky to run command on specific git hooks.

# Development

What makes the development predictable?

* Linting and formatting while coding.
  + IDE “VS Code” config and IDE plugins (ESLint) using predefined rules to linting and formatting on saving.
* Format and test before commit.
  + Using husky to run final code format then run test on git pre-commit hook.
    - husky install git hooks -> pre-commit -> run command defined in .huskyrc -> lint-staged batch commands.
    - <https://create-react-app.dev/docs/setting-up-your-editor#formatting-code-automatically>
* Using const to define constants and proper package to avoid mutable object.
  + Make sure always using **const** to define constants unless **let** is necessary.
  + Using package ramda to manipulate object.

# Test

What makes the result accurate?

* Define test scope.
  + Define the minimal requirement of browser the APP need to run.
  + Define the size of viewports that the APP need to adapt.
* Manual test.
  + When finish a task manually test it in the scope.
  + Test it from different perspectives (UI, functional).
* Automatic test.
  + Unit test for critical functions that process data.
  + Integration test for endpoints(backend).
  + End-to-end test for APP(Frontend).