1. What were your learning outcomes in respect to this project?

Through this project, I have better understand on web architecture. Using web-server architecture constructing a n-tier architecture. Constructing a Restful api through this project, can let be better understanding the noun rest triangle. Noun : <https://fixer.io/> and <https://currencylayer.com/> or further even using a constructed xml file by myself. Verb: using php to get the data and further processing it to output outcomes. Verb: using php to output the outcomes and using html/javascript to further use the php get file. Using http protocol to create the restful api. Further learning on refactoring in php code writing and learning xml. I have not learnt xml before so this project could really let be better learn and practise using xml documents to store data and how to structure the xml file in order to let the data be more sensitive to use. Also learning what is root, attribute, node, child. Also better studying how to process with json on php and outputting json on php. Through constructing the php file to use the xml file, I also better understand DOM. Although, I use simple xml element on this part, I can learn this part when I search how to use simple xml element on web. Many website uses DOM to describe simple xml element usage. When constructing the javascript/html part, a further more understanding how DOM works within. Through this project I can also learn how to create a get request on html documents using javascript, as I only use jquery before to do such action.

1. How might the application you have built be extended and improved?

As php have been constructed to get the data through web and process out, the application can be extended not only on website, it can also be used on mobile application. Also the html/javascript part can be further constructed to use the convert currencies service and can use css to make the application more interactive and user-friendlier to use. The restful api can be extended to have more currency type to use at first. More refactoring can be done if spending more time to find what function and code can be refactor. As nowadays there are many virtual money like bitcoins, etc… at world, the application can include currency of those virtual money also.

1. How could the application and/or its components promote re-use?

As mentioned above a php server-side code have been constructed to process data to become useful information to output, more applications can be benefits to use that. Even someone constructing a mobile app can use the restful api service to create that. Also nowadays there are many virtual money such as bitcoins, etc.. Some money exchange business or bank can use those currency convert api and contruct their website with currency convert ui on their website, letting users to know the below 2-hours currency rate. Or even using the convert currency api to re-use those data to update their online currency rate and also construct a system for user to exchange currency through online.