# GrabFood Menu Extraction

Introduction

The purpose of this application is to automatically extract the menu information of a merchant who has registered their store under GrabFood. After extracting the menu, the data is converted into an excel spreadsheet, with the menu’s respective items, pricing, description, and option groups for each item.

User Flow

First, find the merchant store in the GrabFood portal and look up the store’s address on Google. If the store's address is not found, find the closest address to the store that is in range for delivery.   
  
Next, copy the link of the GrabFood website’s merchant store and the store’s address and paste it into the application. Run the application to begin the menu extraction process.  
  
The application should first direct to a website that converts addresses to latitude and longitude. This is required for the Grab website as it requires the user to enter their address before they can interact with any of the menu items. We did not use any python libraries for this as all of them were inaccurate and unreliable. It enters the address pasted and stores the latitude and longitude.  
  
The application then opens up the pasted grabfood store link. In order to interact with the menu items, the browser has to first delete the location cookie, then create a new location cookie based on the latitude and longitude obtained from the website. The cookie format has to be the same as before, and the cookie’s value has to be URL encoded in a JSON format.   
  
After refreshing the page, the menu extraction starts. The extraction uses two python web scraper libraries, Selenium and Beautiful Soup, that locates web elements using factors like their HTML class name, XPath, id, etc. It gets the menu item’s name, price and description, then obtains its respective option groups. It also stores the image’s src for downloading later on if the item contains an image. It repeats this process for how many menu items there are, skipping over those that are greyed out.   
  
Once finished, the data extracted is converted into a pandas dataframe, which is then converted into an excel spreadsheet. The excel spreadsheet will be generated in the same file path where you run the executable file. The images will also be downloaded on your computer, inside a folder that is named after the store’s name, in the file path:

C:\Users\{USERPROFILE}\Documents\Grab Images.  
  
  
Notes  
In the excel spreadsheet, the option groups for each menu item are separated by “~~”, while the values for each option group are separated by “|”, as each option group can contain multiple values.   
  
The external libraries we used for this application are: Selenium, xlsxwriter, bs4, pandas, PIL.   
  
The location cookies in the grabfood portal have to be edited in the selenium driver in order to skip the process of logging into the grabfood website to access the menu items. The format of the cookie value is:   
{ "id":"I",

"latitude":latitude,

"longitude":longitude,

"address":"Placeholder",

"countryCode":"SG",

"isAccurate":True,

"addressDetail":"Placeholder",

"noteToDriver":"","city":"Singapore City","cityID":6,

"displayAddress":"Extracting..."

},  
where the only value that matters is the latitude and longitude.  
  
The executable file to upload the menu data into the queuecut merchant webportal is only for the testing website.