**NM2207 Final Project**

**Main Topic:** Can Singaporeans win the battle against the rising cost of living?

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| **Background** | Singapore has once again been ranked as the world’s most expensive city for the 8th time in a decade. It has faced a consistently high cost of living which has been further worsened due to the high inflation. Prices haven risen by 8.1% in local-currency terms, which is the highest rate in 20 years. The high cost of living has even become a significant source of mental health worries among Singaporeans.  The government has been rolling out various support measures in the form of assurance packages to help cushion the effects of this rising cost of living.  I would like to analyse what are the factors contributing to this rising cost of living and whether Singaporeans are able to cope with this rising cost of living in terms of income, government assurance packages and long-term finances.  Resources:  <https://www.todayonline.com/singapore/consistently-high-cost-living-singapore-ranked-worlds-most-expensive-city-8th-time-decade-survey-2061111>  <https://www.todayonline.com/singapore/today-youth-survey-cost-living-mental-health-worries-healthcare-expenses-2033126?cid=internal_inarticlelinks_web_13032023_tdy>  <https://www.humanresourcesonline.net/stressed-in-singapore-rising-cost-of-living-is-triggering-wellbeing-issues>  <https://www.gov.sg/features/cost-of-living> |
| **Analysis** | 1. **Data Visualisation of increase in CPI to showcase inflation:**   Will be plotting a line graph of the percent change to see trend of inflation over the years and which basket of goods has the highest increase in inflation over the years.   1. **Data Visualisation on average household income:**   Will be plotting a line graph of the average household income and have a table of percent change in average household income from the previous year. I will then compare this percentage change with that of the inflation rate.   1. **Data Visualisation on average household expenditure**   Will be plotting a pie chart to see which basket of goods take up a larger portion of the monthly household expenditure, then compare it to the rates of inflation per basket of goods to see which expenses are affected by a larger rate of inflation.  Will then compare this with government assurance packages to see if the help provided is targeting the right basket of goods (i.e., subsiding/providing payouts for goods affected by higher rates of inflation) |
| **Data** | 1. **Data Visualisation of increase in CPI to showcase inflation:**   Split up the types of inflation into: Overall inflation, core inflation, and one to showcase increase for each basket of goods.  Link to data: <https://www.singstat.gov.sg/whats-new/latest-news/cpi-highlights>  **Data Cleaning:**  Extracted just the data from 2015 to 2022 to see recent trend. Only kept values for overall basket of goods by filtering out individual item prices. To plot a line graph of the percent change to show trend over the years.   1. **Data Visualisation on average monthly household income:**   Link to data: <https://tablebuilder.singstat.gov.sg/table/CT/17820>  **Data Cleaning:**  Extracted data from 2015 to 2022 to follow the time period of the inflation rate data visualisation. Only kept total, 4th and 5th decile values to compare the average values and compare the median values (gives a better representation of the general population).   1. **Data Visualisation on average household expenditure**   Link to data: <https://tablebuilder.singstat.gov.sg/table/TS/M212981>  **Data Cleaning:**  Only filter out 2018 data as above data are all from 2015 onwards (the household expenditure survey is carried out every 5 years hence the latest data as of now is 2018). Will keep the larger categories and remove the sub-categories (e.g., sub-categories under food and housing and related expenditures). |
| **Problem Statement** | Can Singaporeans win the battle against the rising cost of living? |
| **Findings** |  |

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| **Week** | **Concept** | **How I've used it** | **Line number** | **Filename** |
| 1, 2 | Table creation with HTML & CSS | I used the table to compare the inflation rates and income growth rates | HTML: 84 – 130  CSS: 261 – 280 | finalproject.html, appstyle.css |
| 2 | Image (img) with attributes | Inserted a gif in the header | HTML: 23 | finalproject.html |
| Div elements | Used div elements to section my website and create a flexbox layout for certain sections |  | finalproject.html |
| Assigning id and classes to elements | Assigned id and classes to various elements, mainly div elements, to make it easier to style the whole section |  | finalproject.html, appstyle.css |
| Anchor (a) with attributes | Used to link my data source for the data visualisation on the website | HTML: 80 | finalproject.html |
| 3,4 | Conditionals | Used if else statements with comparisons (>=, <=, >, <) and combined multiple statements with && | JS: 331 – 350 | main.js |
| Create variables with let and const | Create variable with let for the conditional calculation function and const for graphs | JS: 11-13, 329 | main.js |
| Functions | Created functions that change html content when a div element is clicked on, and another function that calculates a value using an input value from the user when a button is clicked | JS: 2 – 326, 328 – 352 | main.js |
| 4 | DOM Object Model | Used document.getElementById to get user input and used document.getElementById("").innerHTML to change content in the div upon clicking a button | JS: 3, 129, 204, 330 | main.js |
|  | Alert | Created pop-up alert when user input contains something other than just numbers | JS: 352 | main.js |
|  | Console.log | Used console.log to check if data retrieved for data visualisation is correct | JS: 150, 490, 558 | main.js |
| Comment on code | Comment on html, css, and js codes to break them down into sections and know which code is supposed to do what |  | finalproject.html, appstyle.css, main.js |
| 5 | Colours | Used various combinations of colours to style my html page, and colour code data in the data visualisation | CSS and JS | appstyle.css, main.js |
|  | Event Listener | Used onclick and button in html | HTML: 46 – 48, 63 | finalproject.html |
| 7,8 | Chart.js | Created charts for data visualisation, some with data within the code and some with data imported from csv file | JS: 11 – 125, 134 – 201, 212 – 290, 359 – 471, | main.js |