Title: Voting Analyse

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Description:

This is a voting analysis software. Its purpose is to analyse election data and provide users with information such as the constituency information, parties, and MPs. Calculate the sum and percentage of each party's total votes while also writing the calculated result to a text file. It is designed to be a user-friendly and very interactive.

Display a welcome screen with options:

- Constituency info
- Party info
- List of MPs
- Exit the program

2. User selects an option by entering a number:

- IF user selects "Constituency info":
    - Open the CSV file
    - For each row in the CSV:
        - Create a Constituency object with the row's data
        - Print constituency details using the display method
- ELSE IF user selects "Party info":
    - Open the CSV file
    - Display the list of parties
    - Ask the user to select a party
    - Calculate the total votes for the chosen party
    - Calculate the percentage of total votes
    - Print the party details and write them to a text file
- ELSE IF user selects "List of MPs":

    Open the CSV file

For each row in the CSV:

Create an MP object with the row's data

Print MP details using the display method

ELSE IF user selects "Exit":

Print a goodbye message

Exit the program

-ELSE:

Print an invalid option message and return to the menu

3. Repeat the process until the user selects option to Exit.

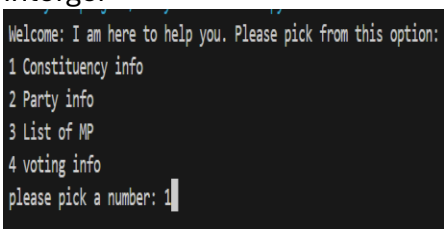
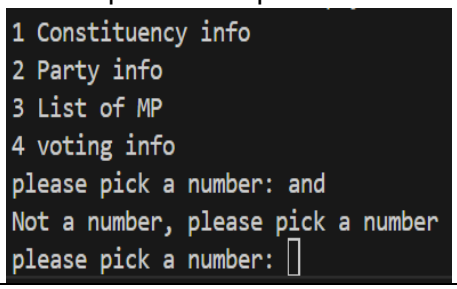
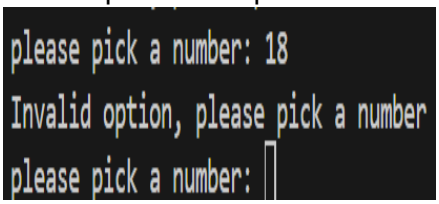
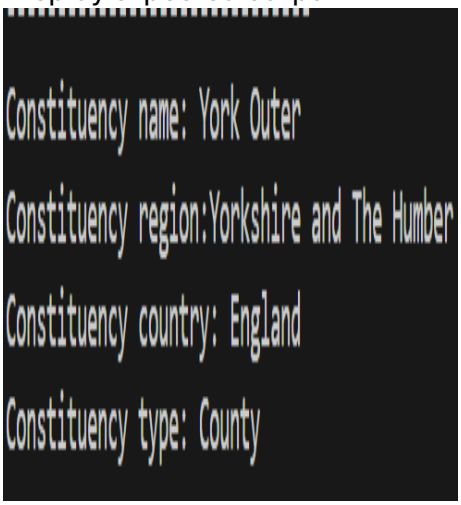
END

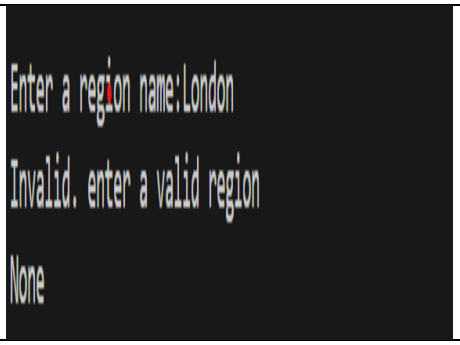
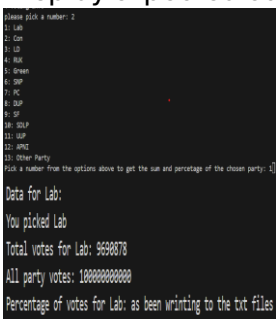
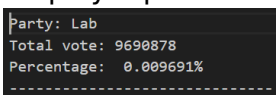
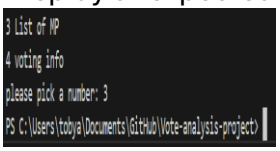
Current Features:

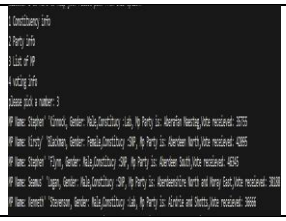
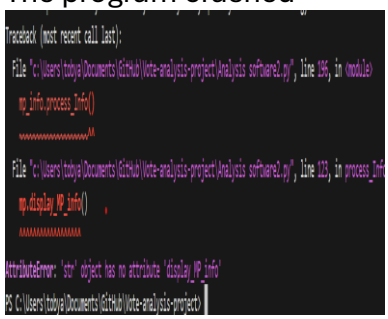
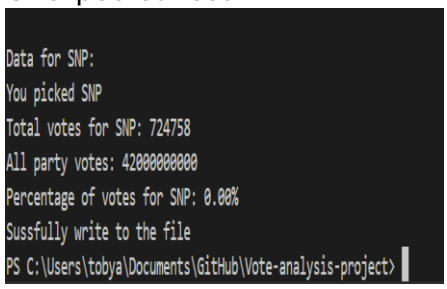
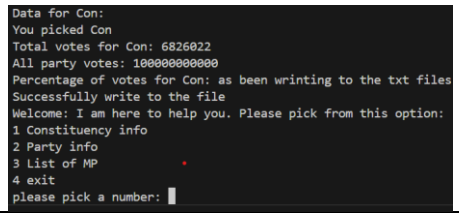
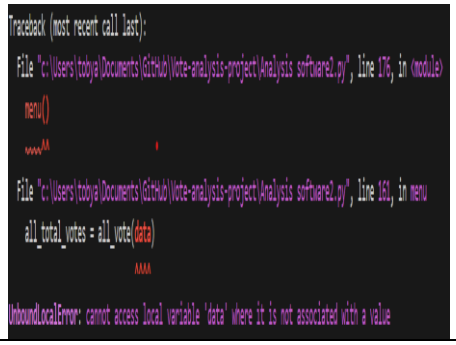
- Displaying welcoming message using the print functions
- Created a menu that give user a list of options to pick from
- Create 3 classes to handle each option the user picks
- Read from a csv file for processing and analysis.
- Handle constituency information, including name, region, country, types and registered voter
- Display party details, such as their names the total vote they got and the percentages
- Allow user interaction by giving them options to pick what party they want information on.
- Created a function that write the result of the total vote, the percentage and the name of the party to a text file
- Create a MP class to display the candidate information such as their name, gender etc.

Testing

Test case	**Description**	**Input**	**Expected Output**	**Actual Output**	**Status**
Display welcoming message	Test id the print function is working	Run	Print welcoming message	Print welcoming message	Pass
Display options		Run	Display list of option	Output list of options	Pass

User Prompt	The list of option is tuned into an integer so the user will be asked to input	Run	Display the list of options and prompt	The program prints out the list and prompt the user for an interger 	Pass
Error handling (Text)	The program will check for invalid input for string	'and'	Should output invalid and repromoted	Print expected output 	pass
Error handing (number)	The program will check for invalid for when the option is not in the list	18	Should output invalid option and ask again	Print expected output 	Pass
Read constituency class info from csv	The program read constituency info from the csv file correctly and output them when it class is called (it called with option 1)	1	Print the constituency details like name, region, country and type	Display expected output 	Pass
Filter the consistency by region	The program will prompt the user	Wales	Display the consistency information for that region	Display invalid options. Even with valid input so it was unexpected	Fail

	for region name				
Read party class info	The program read Party info eg their name and calculate the sum and percentage of the party chosen	2 Then sub-option 1	The program should print out the name of party then option to know the sum about a party	Display expected output 	Pass
Write to file	The programs have a function that will store the result of the calculation to a txt file	Run	The program should write the result to a txt file	Display expected output 	Pass
Reading MP from the csv	The program will try to access the MP class when it is called	3	The program should display the MP details such as name gender etc	Display unexpected output 	Fail
Reading MP from csv	The program will try to access the MP class	3	The program should display the MP details such as	Display expected output after creating instance for the MP class	pass

	when it is called		name gender etc		
Filter by name	The program will ask the user to input name and output data relating to the name	Run	The program is expected to return the filtered data	The program crashed 	Fail
Take the user back to the menu after running	The program will keep giving the user option until they want to exit	run	The program is expected to take the user back to the menu	Unexpected result 	Fail
Take the user back to the menu after running	the program will keep giving the user option until they want to exit	Run	The program is expected to take the user back to the menu	Display expected result because i restructure and put them into functions then just use a while loop to loop through it 	Pass
Calculate the percentage	I want to calculate the percentage by reding the valid and invalid column	Run	The program should read the column then add them to calculate	Display unexpected output. Crashed 	Failed

Limitation

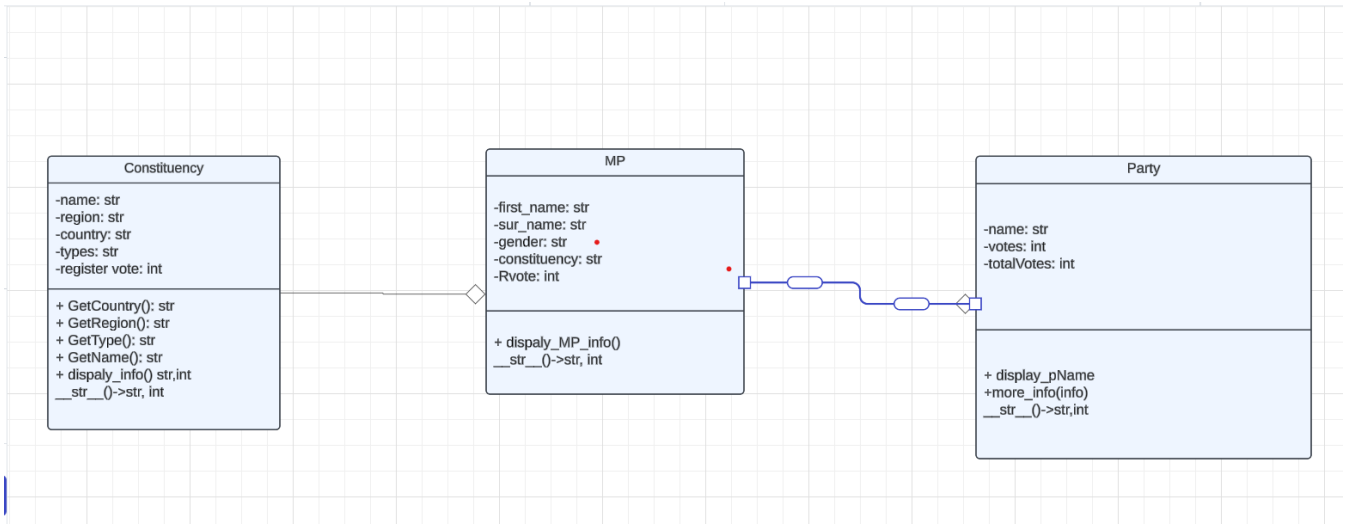
1. My first limitation was that the program was not able to filter the constituency to only output the ones the user wants. It just prints out the whole constituency details
2. I also try to filter the MP by name instead of printing the whole list, but it failed, and the program crashed
3. I wasn't able to read the valid vote and invalid to calculate the percentage so i create a variable that stored a placeholder of the number I manually input. Due to the time constraints
4. I would like to display the stats using matplotlib but unfounaly i couldnt due to time constrains

Future improvements

1. If i had more time i will try and get to the route of the problem to know why the program is allowing me to filler region and constituency name
2. I would like to make sure the user can search a specific MP name using their name or gender
3. I would like to problem solve why the program is not reading through the valid and invalid column to calculate the percentage instead of just have a random number as a placeholder

The refence has been commented in the code

My class diagram


Constituency
-name: str
-region: str
-country: str
-types: str
-register vote: int
+ GetCountry(): str
+ GetRegion(): str
+ GetType(): str
+ GetName(): str
+ dispaly_info() str,int
__str__()->str, int
MP
-first_name: str
-sur_name: str
-gender: str
-constituency: str
-Rvote: int
+ dispaly_MP_info()
__str__()->str, int
Party
-name: str
-votes: int
-totalVotes: int
+ display_pName
+more_info(info)
__str__()->str,int