High level algorithm for the solution

Objective: Open multiple CSV file that contains over 50 thousand lines of data and get selected data based on the user input choice.

Read files

Create a Metadata objects

Create a vector of metadata file

Create a Binary Search Tree of Metadata objects

Create a map of Metadata objects

Loop through the file collecting data

Get all data in a Vector, bst and Map

Output a user interface menu of option in the console looping until user input 6

Get input of user with an option

Case 1 return max wind speed for a given year and month

Case 2 return monthly total wind speed of a given month

Case 3 return the month average of solar radiation for a given year

Case 4 write on a file the total monthly wind speed and monthly solar radiation average

Case 5 return the max solar radiation for a specific day month and year

Case 1

Loops through elements compare year if was the same as input

Compare month

If same as input compare the previous max speed if bigger max speed get a new value

Print result user

Case 2

Loop all elements collected compare with year input by the user

If the same a variable with Total Wind Speed gather all wind speed for that month, jumps to the next month until all months are tested.

Input result for the user

Case 3

Loop all elements collected compare with year input by the user

If the same a variable with average solar radiation gather all data for that month, and calculate average. Jumps to the next month until all months are tested.

Input result for the user

Case 4

Do the same choices as 3 and 4 but write results in a file.

Case 5

loop over a map to find the highest solar radiation for the date

Add the max solar radiation to a variable

Iterate through the map again

If max solar radiation found is same as iterator

store it in a binary search tree.

Case 6 program terminates.