B8IT105 Programming for Data Analytics

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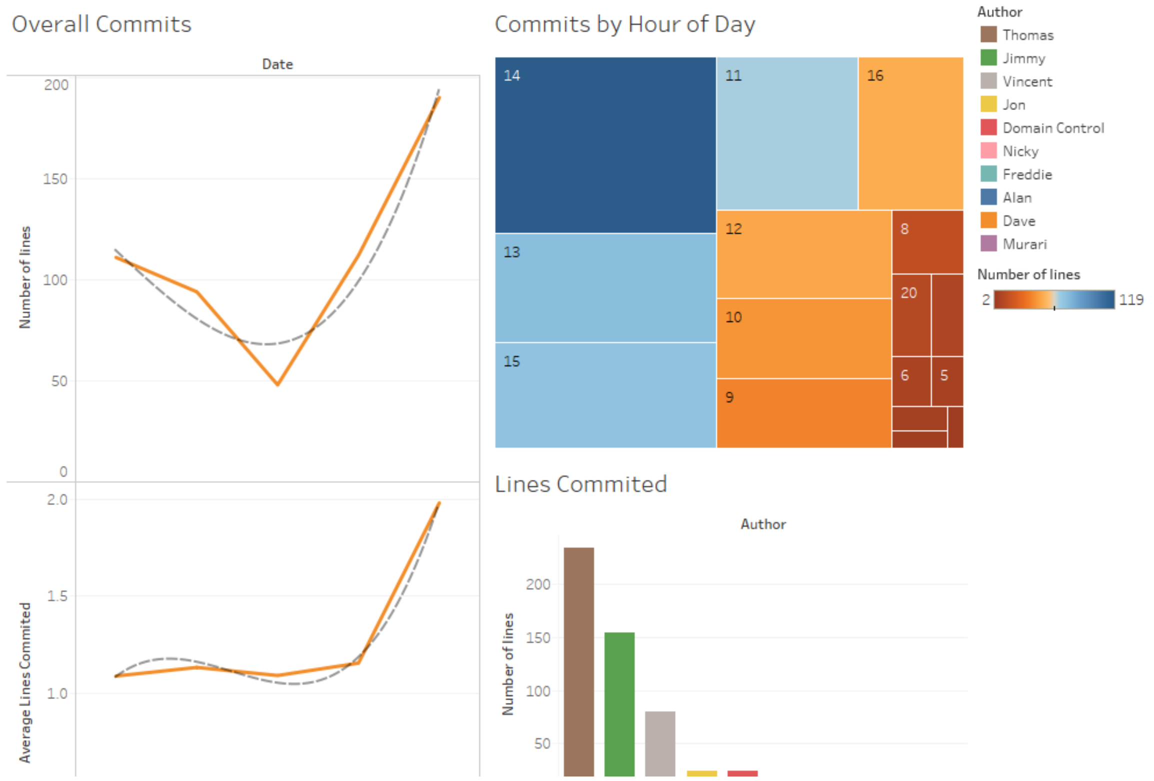
1. CA4 - Perform Analysis on a 5000 line dataset

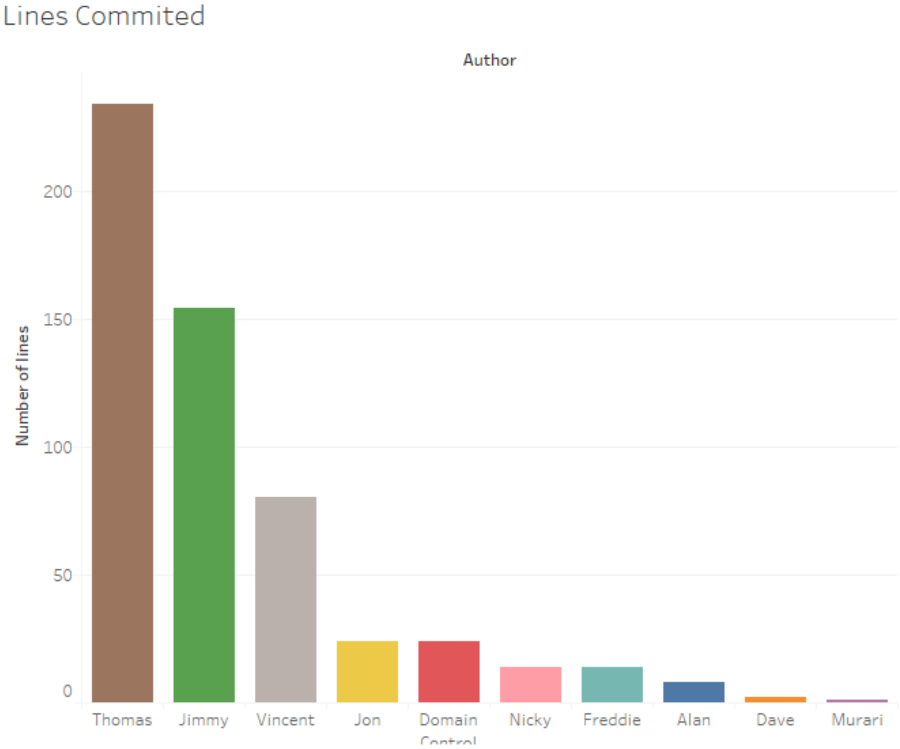
Assignment 4 is based on transforming a large dataset in text format - over 5000 lines of text. You will need to scrub (clean) the data and place it into the relevant holder/container objects. Once in these objects you will see that there are 422 different sets of commit objects. So your task will be to analyse these 422 objects that are in a list and come up with 3 interesting statistical pieces of information for this dataset with supporting evidence of "interestingness'. You code for calculating the analysis should be documented and tested. Test should be in a separate file runnable from the command line. Your statistical analytics conclusions should be in a word document explaining in approximately 500 words the information that you have gleamed from the dataset. You will be required to submit your code via github along with all documentation and tests. The deadline is the 7th May 2017 on moodle @ 23:55.

Tableau Dashboard

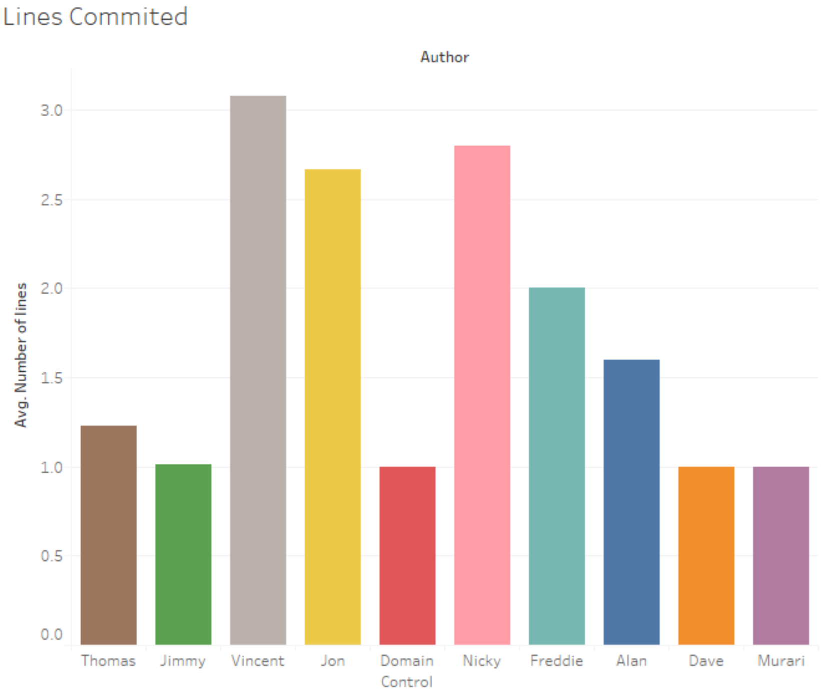


The results that presented themselves were pretty mundane. To get the results I wanted firstly in Python I tidied up some of the names, had to change the dictionary index on “number_of_lines” and then to get the dates and times I wanted I had to do some custom splits within Tableau. My code appeared to function well, the only issue was I did get a NameError when testing my attach_csv function but I literally have just gone passed it as I need to get assignment submitted as we have more to complete, I just did not want to get too hung up on it.

Thomas is the Most Productive Developer

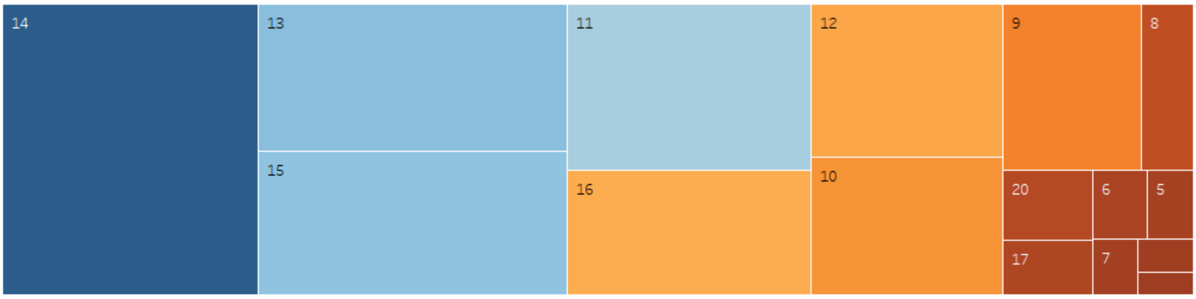


This is in an overall sense, although the data shows on average during each commit Vincent has been committing more lines of code but he obviously just does it less often. Thomas is making smaller but more regular contributions to the code.



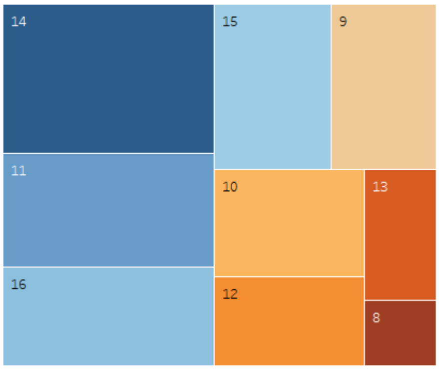
Nobody Burns the Midnight Oil

Commits by Hour of Day



Most code is committed at 2PM in the middle of the day. Vincent seems to start the earliest but takes breaks throughout the day. Thomas appears a little more organised and consistent. Let's compare the two tables.

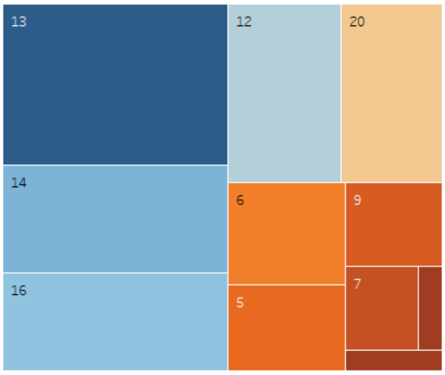
Commits by Hour of Day



Thomas

- 47 lines committed around 2PM
- Standard day of 8AM to after 4PM
- Relatively consistent blocks of submissions

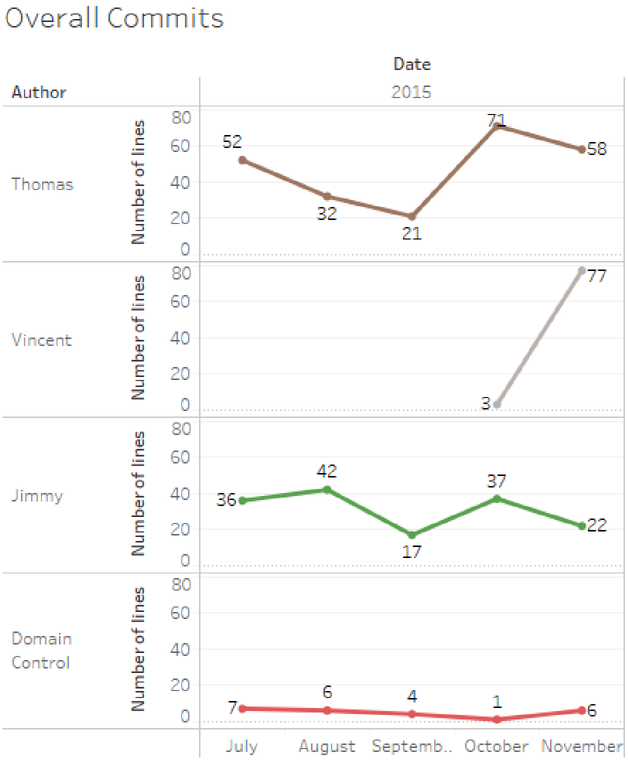
Commits by Hour of Day



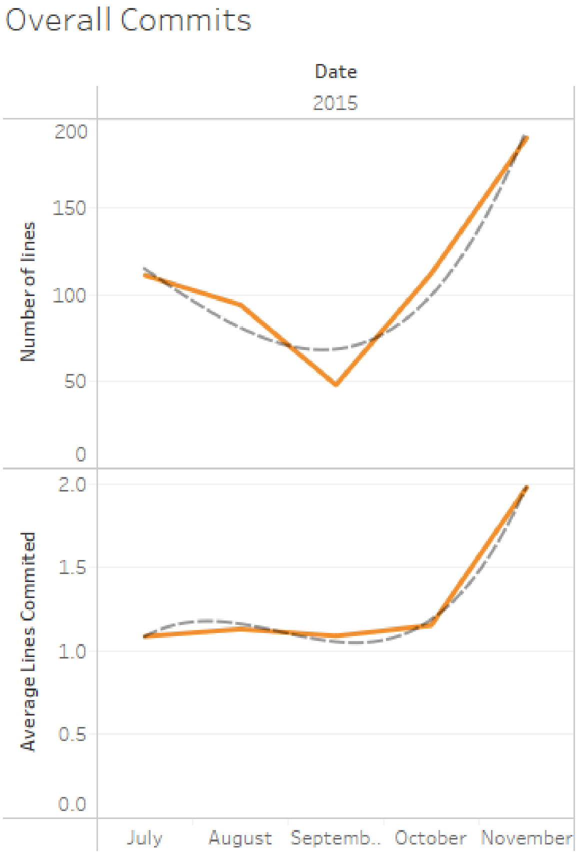
Vincent

- Submissions more erratic
- Less consistency
- Works from as early as 5AM and as late as after 8PM
- May be a new starter, surpassed Thomas for submissions in November and the highest month overall

Top 4



Something Happened in November



As can be seen from the graphs there is a polynomial trend distribution (3rd degree, was the best fit that I could find) for both total line committals and average line committals.

Both curves trend positively towards November, one might infer that this is indicative of summer holidays or a previous project coming to an end around September. Either way it looks like going into November that the developers shift gears. The fact that Vincent seems to becoming a very large contributor has obviously had a big impact on overall figures as well.

In terms of overall interestingness, I feel you would probably want more data to reach any worthwhile conclusions other than Thomas looks like he is worth retaining when benchmarked against his colleagues, and that Vincent looks very promising. It is quite a small snapshot to try and make any real assertations.