

# **BCS Digital Industries Apprenticeship**

## **Data Analyst Project B – NHS GP Prescription Analytics**

**Version 1.4**

**October 2019**

## Change History

Any changes made to the project shall be clearly documented with a change history log. This shall include the latest version number, date of the amendment and changes made. The purpose is to identify quickly what changes have been made.

Version Number and Date	Changes Made
Version 1.0 April 2018	Document created
Version 1.1 July 2018	Submission email address amended
Version 1.2 November 2018	Declaration template removed. To be supplied in a separate document.
Version 1.3 April 2019	Date range for analysis moved forward due to data retirement.
Version 1.4 April 2019	Date range for analysis moved forward due to data retirement.

## Project Overview and Objectives

Your organisation, a growing IT Business, is looking to expand its portfolio. The Healthcare industry is a direction in which it has identified a possible route of expansion.

Your Senior Management team have scheduled an initial meeting in a week's time with NHS Commissioners. At the meeting, the intention is to hold an informed conversation demonstrating the area's in which your company can provide cost savings; against GP prescriptions in particular.

**As Lead Data Analyst, you are asked to produce an intelligent report which will assist the Senior Management team in their preparation for the meeting. Your report should contain the following:**

1. A summary of the current cost of prescriptions.
2. Analyses that demonstrate an understanding of GP prescription costs.
3. A 6 months' trend analysis.
4. A summary of the 'Area Team', 'PCO' and 'Practice' views of the cost of prescriptions (Area Team, PCO and Practice are all metrics in the dataset).
5. Be a 'live' report that can be updated when new data is released to allow the latest view of prescription cost is available.

Full specification and requirements for this project are below.

## Project Outputs and Deliverables

Once completed, to demonstrate completion of the tasks you will be asked to provide a series of outputs, that should be submitted together with the synoptic project declaration.

Deliverable	Output	Evidence
<i>Structuring the problem and work planning</i>	<ul style="list-style-type: none"> <li>A written understanding of the task.</li> <li>A project plan for the duration of the Synoptic Project. Update the actual time spent against the plan.</li> <li>List any assumptions you have made</li> </ul>	Word document and Excel spreadsheet or other Project Management tool.
<i>Engaging the customer</i>	<ul style="list-style-type: none"> <li>A documented representation of requirements gathering, reflecting the approach that may have been taken to obtain the customers desired report outputs.</li> </ul>	Word and/or Excel spreadsheet to show minutes / activity logs.
<i>Data gathering</i>	<ul style="list-style-type: none"> <li>Evidence of all downloads and proper naming and filing of the source data. <b>See data download Process Note.</b></li> </ul>	Data tables in Excel spreadsheet.
<i>Conducting analysis</i>	<ul style="list-style-type: none"> <li>Data mining, merging of tables, time series and data modelling to identify trends and patterns.</li> </ul>	Excel spreadsheet to show formulas, analysis, tables and charts generated.

<i>Developing insight and making recommendations</i>	<ul style="list-style-type: none"> <li>Translating analyses into insight, collating evidence to support your recommendations, and extracting meaningful pieces of information from the charts and tables.</li> </ul>	Word document or Excel file of relevant charts and tables.
<i>Communicating recommendation</i>	<ul style="list-style-type: none"> <li>Produce a report showing cost analysis and comparisons between Area Teams, PCO and Practices.</li> <li>Highlight the consequences of any of the assumptions you have made</li> </ul>	Delivering a report using PowerPoint presentation and Excel.

## Project Information and Equipment

To complete this project, you will need to review all the information specified in this document, this will enable you to deliver the key outputs and deliverables for this project detailed in the table above.

In addition, your training provider and / or employer will provide you with all resources required to complete your project including:

- Laptop / PC installed with Microsoft Excel, Word and PowerPoint
- Internet access to enable you download the data and perform any other research
- The data source – see the link below:

**<https://apps.nhsbsa.nhs.uk/infosystems/welcome>**

Please follow the instruction on the data download Process Note in Appendix B

## Competencies and Knowledge Standards

Below is a list of competencies and knowledge standards covered by this project.

### Knowledge Standards

- Understand and can apply industry standard tools and methods for data analysis
- Understand the project life cycle
- Understand the importance of clearly defining customer requirements for data analysis
- Understand the steps involved in carrying out routine data analysis tasks

### Competency Standards

- Identify, collect and migrate data to / from a range of internal and external systems
- Manipulate and link different data sets as required
- Perform routine statistical analysis and adhoc queries

- Use a range of analytical techniques such as data mining, time series and modelling techniques to identify and predict trends and patterns in data
- Apply the tools and techniques for data analysis, data visualisation and presentation.
- Summarise and Present the results of data analysis to a range of stakeholders making recommendations.

## **Appendix A – Background Information**

- The overall aim is to understand whether there is distinct difference between GP Practices with regards to prescription cost.
- The organisation is experiencing market saturation and would like to increase their service offering in order to maintain a competitive edge.
- The board believe that this initial report will throw open a wide door of opportunities in the NHS for your organisation and put them firmly on the map in the UK as a whole.
- Your organisation's unique selling proposition is improving customer's user experience and overall cost saving.
- It is intended to aid the commissioners in making a decision about potential cost savings and proper channelling of funding.
- This is a pilot project to develop a new integrated GP prescription cost analysis report that can be used to meet the funding needs of Commissioners (CCG).
- This report will focus on London as a region and would be mirrored for other England regions after testing, along with a review of feedback from the target audience.

## **Appendix B – Business Requirements**

- This project requires the download and analysis of publicly available data from The UK National Health Service
- The key point of interest is the cost of medicine prescriptions by General Practices.

## **Appendix C – Key Features and Overall Design**

The report will provide the following views of the data:

1. Amend and merge all 6 data sets into one table so to have the 'Actual Cost' metric in six columns in the final data set, differentiated by their months (E.G. Jul, Aug, Sep, Oct, Nov and Dec).
2. A trend chart showing GP prescription cost (Actual Cost) at Area Team level (Jul-18 to Dec-18).
3. A trend chart showing GP prescription cost (Actual Cost) at PCO level (Jul-18 to Dec-18).
4. A trend chart showing GP prescription cost (Actual Cost) at GP Practice level (Jul-18 to Dec-18).
5. Identify the top ten GP Practices with highest prescription cost.
6. Identify the top ten GP Practices with highest quantity of prescription.
7. A comparison of the top ten GP Practice with highest cost and quantity of prescription.

The report will also:

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- Indicate which period the latest data covers.
- Allow users to easily copy content for inclusion in other presentations.

## Appendix D – Process Note

You will need to download 6 different datasets from the link, namely:

JUL, 2018;  
AUG, 2018;  
SEP, 2018;  
OCT, 2018;  
NOV, 2018;  
DEC, 2018.

### How to download the data sets from the web link.

The data sets, JUL 2018, AUG 2018; SEP 2018; OCT 2018; NOV 2018 and DEC 2018 can be found at the following link:

<https://apps.nhsbsa.nhs.uk/infosystems/welcome>

1. When you click on the link it will take you to the website and you will see the following window:

*(Please copy and paste the web link onto your browser if the link does not work when you click on it)*

[Back to NHS Prescription Services](#)

Information Services Portal

  
Business Services Authority

### NHS Registered Users Login

E-mail

Password

\* Your password will expire after 28 days

[Register as a new user](#) [Forgotten your password?](#)

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**Need to register?**


For further information on registration and who is an authorised user click [here](#).

If you are not carrying out an NHS role, a limited view of the data is available via the guest log on.

### Guest Login

If you are not carrying out an NHS role, use Guest login to see a limited view of the data

Type the code shown in the picture

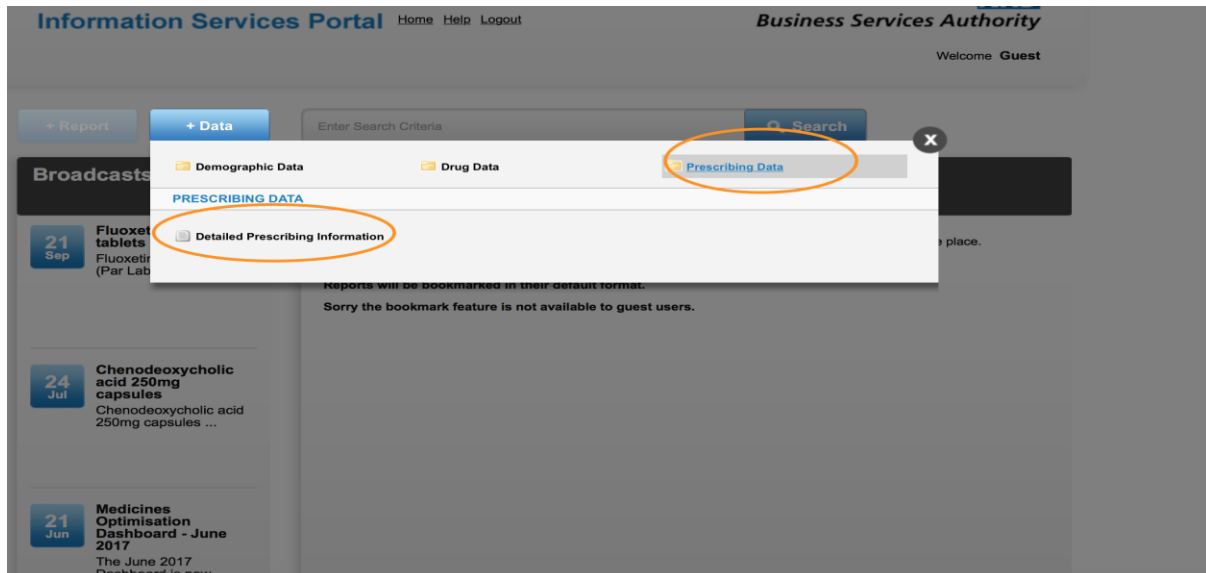


2. Type in the code highlighted in the space below and click 'Guest Login'
3. The guest button will take you to the page below.
4. Click on the 'Data' button.

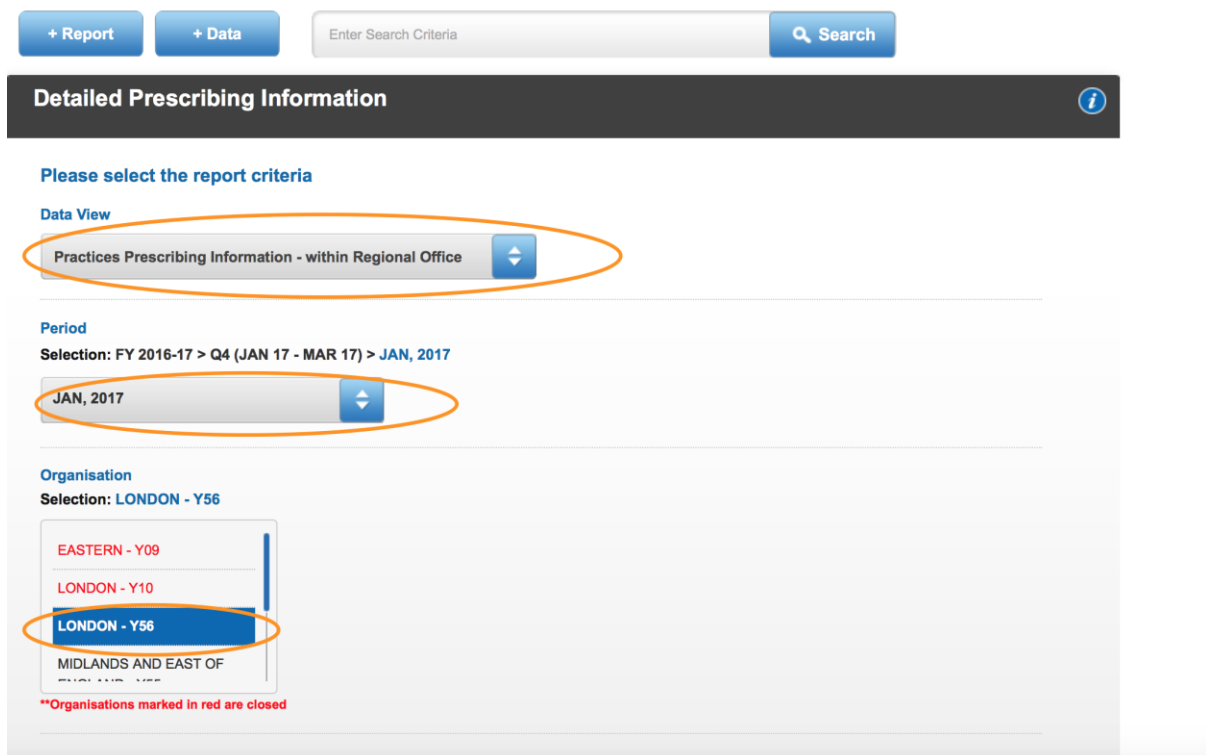


The screenshot shows the 'Information Services Portal' interface. At the top, there is a header with 'Information Services Portal' and links for 'Home', 'Help', and 'Logout'. To the right, it says 'Business Services Authority' and 'Welcome Guest'. Below the header, there are two buttons: '+ Report' and '+ Data'. The '+ Data' button is circled in orange. To the right of these buttons is a search bar with the placeholder text 'Enter Search Criteria' and a 'Search' button. Below the buttons, there are two main sections: 'Broadcasts' and 'My Bookmarks'. The 'Broadcasts' section lists three items: '21 Sep Fluoxetine 10mg tablets', '24 Jul Chenodeoxycholic acid 250mg capsules', and '21 Jun Medicines Optimisation Dashboard - June 2017'. The 'My Bookmarks' section contains text explaining the bookmark feature and a message stating that the feature is not available to guest users. At the bottom of the screenshot, a macOS dock is visible with various application icons.

- Click on the Prescribing Date button on the next page and then 'Detailed Prescribing Information'.



- You will arrive next the page below.



- Go to the 'Date View' field and click on the drop-down button at the end and select 'Practices Prescribing Information – within Regional Office'.

8. On same page, go to 'Organisation' field and highlight 'LONDON – Y56'.
9. On same page go to 'Period' field and click on the drop-down button at the end and select 'FY 2018-19, then click on Q2. There will be list of data sets (JUL,2018, AUG,2018, & SEP,2018). Click on the individual month to download each one of them.

**NOTE: Make sure each data set is labelled with the correct month before downloading the next month, as there is no date in the data table to tell them apart.**

10. Repeat step 9 above, but this time click on Q3. There will be list of data sets (OCT, 2018, NOV, 2018 & DEC, 2018). Click on the individual month to download each one of them.

**NOTE: Make sure each data set is labelled with the correct month before downloading the next month, as there is no date in the data table to tell them apart.**

## Apprentice E - Glossary of terms

Term	Definition
Area Team	Grouping based on geographical location.
Distinct	Recognisably different in nature from something else of a similar type.
GP (General Practitioner)	A doctor based in the community who treats patients with minor or chronic illnesses and refers those with serious conditions to a hospital.
Market Saturation	In economics, market saturation is a situation in which a product has become diffused (distributed) within a market; the actual level of saturation can depend on consumer purchasing power; as well as competition, prices, and technology.
PCO	Primary Care Organisations is used to define CCGs, Local Authorities, Commissioning Hubs and provider organisations or a combination of these organisations in relation to the information in reports supplied by NHS Prescription Services.
Practice	The business or premises of a doctor working in general practice.

On completion, please upload documentation relating to the project deliverables and a completed project declaration (provided separately) to the relevant folder location as specified by your training provider. Alternatively, please send to [epateam@bcs.uk](mailto:epateam@bcs.uk)