

The page features a decorative design on the left side consisting of several overlapping, semi-transparent purple geometric shapes, including triangles and polygons, creating a modern, abstract background element.

**Accelerate People Ltd**

**Data Analyst  
Synoptic Project A**

## Document History

The ensure quality control and to quickly identify any changes made version control must be listed below. Including, the latest version number, date of the amendment and changes made.

Version Number and Date	Changes Made
V1.0 January 2020	Document created.
V1.1 May 2020	Amended Text

## Guidance

The purpose of this document is to provide you with all of the background details, data and outcomes to complete the Synoptic Project.

The Synoptic Project provides you with an opportunity to demonstrate your Knowledge, Skills and Behaviours whilst working independently and showcase your approach against a selection of outcomes from the Apprenticeship Standard. (These are documented in the competencies table below).

### Please note

- **Any outputs created by you will contribute to your overall evidence assessed during the End-point Assessment phase and graded accordingly.**
- **You may be asked during your Interview to explain components of this project.**
- **Where there is insufficient information to make decisions, it is expected that you will make the relevant assumptions to enable you to complete the task.**
- **These assumptions should be documented in your final output.**

## Project Overview

"Wide World Importers" are a B2B company that buys products from global sources by importing and then reselling them to their customers who in turn will sell to consumers. The Senior Leadership Team analyse the orders and customers so that they can make strategic decisions in the future. They have made the following data available and exported the data as a CSV files:

[WideWorldImporters].[Sales].[OrderLines].csv  
[WideWorldImporters].[Sales].[Orders].csv  
[WideWorldImporters].[Warehouse].[StockItems].csv

## Project Objectives

"Wide World Importers" Senior Leadership Team have asked you to create a report covering the following areas:

- Identify the bestselling products
- Identify the worst products
- Identify the colour ID's which are bestselling for each product
- Identify sales trends including:
  - Overall sales increase/decrease
  - Seasonal effects - which months have increased/decreased sales and any repeating cycle
- Create suitable models that predict futures sales
- Any additional analysis you feel relevant and informative
- Security of data

You should assume that the currency used is GB Pounds.

## Project Deliverables

General Phase	Specific Phase	Required Content	Output Format
Plan	Data Discovery	A short review and document key fields to be used for analysis	Word / PowerPoint
	Data Preparation	A short summary of the processes used to extract, transform and load the data. Document any problems found with the data quality	Word / PowerPoint
	Model Planning	Document the models / charts / reports considered	Word / PowerPoint
Design	Model Planning	Document the final selected models / charts / reports	Word / PowerPoint
Build	Build	Build the reports / models to answer the questions	Word / PowerPoint
Test	Test	Document how you have tested and validated the results	Word / PowerPoint
N/A	Communicate Results	Compile a short report answering the questions asked by the Wide World Importers Senior Leadership Team and stated in the “Project Objectives” section	Word / PowerPoint

### Please note

- Any outputs created by you will contribute to your overall evidence assessed during the End-point Assessment phase and graded accordingly.
- You may be asked during your Interview to explain components of this project.
- Where there is insufficient information to make decisions, it is expected that you will make the relevant assumptions to enable you to complete the task.
- These assumptions should be documented in your final output.

## Project Information

All of the data needed for analysis is located within these files:

[WideWorldImporters].[Sales].[OrderLines].csv  
[WideWorldImporters].[Sales].[Orders].csv  
[WideWorldImporters].[Warehouse].[StockItems].csv

Assume that all currency is GBP.

To complete these tasks, you can use any tools, programming language or software to answer the questions, making sure that you document what you have used. Put all content that you want presented into a single word document and/or PowerPoint presentation. You may supplement this document with additional files as long as these are referenced within the main document.

## Equipment Required

Use of a computer with access to the internet and any software tools appropriate to the task.

## Competencies Table

What	
Identify, collect and migrate data to/from a range of internal and external systems	<p>Apprentices should be competent in abstracting data for subsequent analysis. This will include:</p> <ul style="list-style-type: none"> <li>identifying the data necessary as inputs to the analysis based upon the requirements of those requesting the analysis</li> <li>collecting data from a variety of sources. They should understand that data may be collected not only from stored data but also from sensors, cameras, recording devices, satellites, etc.</li> <li>migrating data for subsequent analytics studies and specify data conversion requirements</li> </ul>
Manipulate and link different data sets as required	<p>Apprentices need to be able to manipulate and link data sets to provide the data set for data analyst, including:</p> <ul style="list-style-type: none"> <li>manipulating data sets of structured and unstructured data from diverse sources</li> <li>merging or linking data from a variety of disparate sources</li> </ul>
Collect and compile data from different sources	<p>Compiling data in preparation for analyses is a core part of data analysis and can involve manually compiling data from multiple sources including</p> <ul style="list-style-type: none"> <li>databases</li> <li>spreadsheets</li> <li>reports</li> </ul>
Perform routine statistical analyses and ad-hoc queries	<p>Apprentices should be able to undertake standard analyses using industry standard methods using popular methods:</p> <ul style="list-style-type: none"> <li>general linear model: A widely used model usable for assessing the effect of several predictors on one or more continuous dependent variables.</li> <li>generalised linear model: An extension of the general linear model for discrete dependent variables</li> </ul>
Use a range of analytical techniques such as data mining, time series forecasting and modelling techniques to identify and predict trends and patterns in data	<p>Apprentices need to be able to apply a range of analytical techniques, including:</p> <ul style="list-style-type: none"> <li>data mining tools to discover useful patterns in large data sets.</li> <li>time series analysis where data is taken over time in order to extract meaningful statistics and other characteristics</li> <li>time series forecasting where a model is used to predict future values based on previously observed values</li> </ul>
Assist with data quality checking and cleansing	<p>Apprentices should be able to undertake data quality checking:</p> <ul style="list-style-type: none"> <li>ensuring data quality including correcting, standardising and verifying data</li> <li>checking data for errors, inconsistencies, redundancies and incomplete information</li> <li>cleansing data, including de-duplication and verification of information;</li> </ul>

Apply the tools and techniques for data analysis, data visualisation and presentation	<p>Apprentices should be able to apply the tools and techniques for data analysis, visualisation and for communicating results:</p> <ul style="list-style-type: none"> <li>• work with data analysis and data mining tools to produce data insights</li> <li>• create and study the visual representation of data, to communicate information clearly and efficiently to users via a range of statistical graphics, plots, information graphics, tables, and charts.</li> </ul>
Summarise and present the results of data analysis to a range of stakeholders making recommendations	<p>It is important that apprentices can summarise and present their findings:</p> <ul style="list-style-type: none"> <li>• summarise the outcomes of an analysis</li> <li>• present data to a wide range of stakeholders</li> </ul>
<b>How</b>	
Apprentices can demonstrate the ability to use both logical and creative thinking skills when undertaking work tasks, recognising and applying techniques from both.	
Apprentices can show that they recognise problems inherent in, or emerging during, work tasks, and can tackle them effectively	
<b>With Whom</b>	
Apprentices can communicate effectively with a range of people at work, one-to-one and in groups, in different situations and using a variety of methods.	
Apprentices can demonstrate various methods of communication, with an understanding of the strengths, weaknesses and limitations of these, the factors that may disrupt it, and the importance of checking other people's understanding.	

## Completing Your Project

**You have a maximum of five days to complete the project**, ensure you have all the relevant material on your personal machine, which you will be using to carry out the project tasks, then:

- Review and read all the required information project information
- Complete all the tasks you have been allocated
- Download all files to be used as evidence of your completion of the tasks from any software or tools to a folder on your personal machine to insert or use in your final report
- **Attach files and completed project declaration form (below) to an email and send to [info@accelerate-people.co.uk](mailto:info@accelerate-people.co.uk)**