Online Retail Data Set

<u>Presentation of analysis</u> - didn't have time for presentation! but want to continue with this

<u>Key Insights</u>
- There were 135 080 instances of sales data with <u>no</u> CustomerID and 1 454 with <u>no</u> description
- Sales data from 38 unique 'countries in the 'Country' field but we have <u>36 real countries</u> + 'Unspecified' + 'European Community' (these labels contribute a medium amount to the sales data - so there is <u>some 'grey areas'</u> - we can try to improve the specificity
- Tableau geography visualisation ***
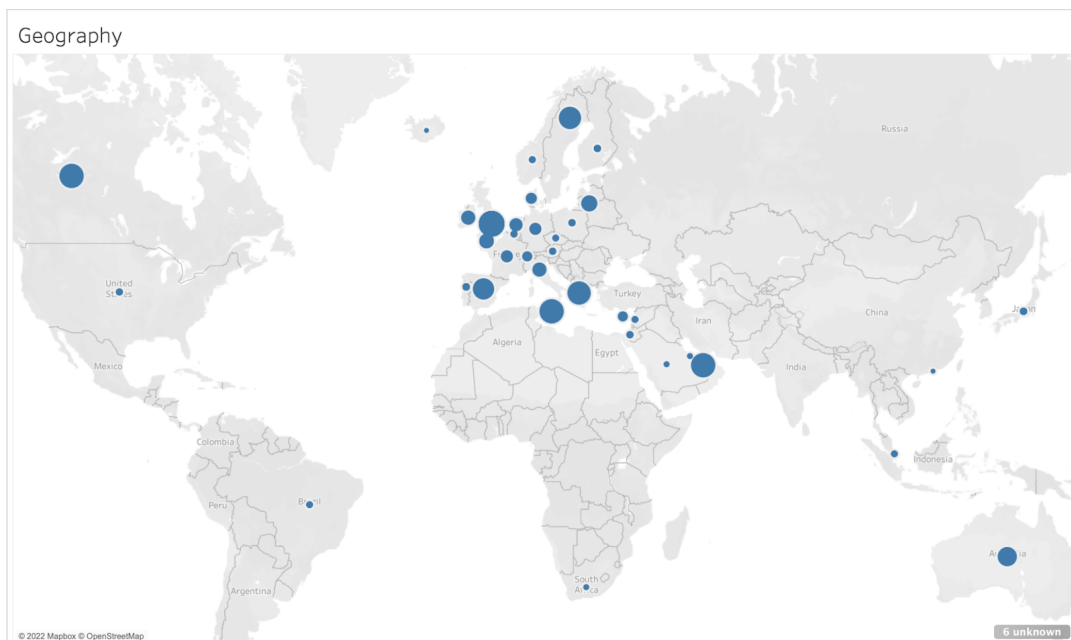
- By far, the country the company sells to the most is: UK - followed by: Netherlands, Ireland, Germany, and France
- Almost 28x more revenue from UK customers compared to Netherlands in 2nd place
- The countries with the least amount of customers are: Saudi Arabia, Bahrain, RSA, Bahrain, Lebanon
- The company generates 62,502x amount of revenue from UK compared to Saudi Arabia
- We only have sales data starting in December 2010 and ends on 9th December 2011
- But we can see that September, October, November and December are the best performing months - according to this dataset
- We have some minus values for products - these could be giveaways with some orders ? given to warehouse staff ? or 'lost' ? Tutti Frutti
- Someone who likes pink poodle hanging decoration, white cherry lights, an angel tea light holders - these items don't sell very well anyway

Recommendations - what groups of customers should they target ?
- We have few customers in Lithuania, Brazil, Czech Republic, Bahrain, Saudi Arabia and we have little sales for Lebanon, Brazil, RSA, Bahrain, Saudi Arabia.
- We can concentrate on improving sales to customers in these locations via market analysis, relevant product offering & targeted marketing
- We can improve the business by increasing the amount of customers and sales in these locations - or be more strategic with developing customer profiles and see where we can generate more sales

Recommendations - how can they improve their product offering ?
- We can concentrate on improving the sales for the other 8 months
- Promote products that sell well in countries that don't buy much
- Or raise company profile in markets where there could be motivation to spend more money

Next steps
- Visualise trends better
- Attempt to see the demand for each product by location
- Check month wise - which product is in higher demand for which month? If there is any seasonality for the product purchases
- Further deeper analysis can be carried out customer wise
- Machine Learning possibilities (according to Kaggle)

https://archive.ics.uci.edu/ml/datasets/Online+Retail
https://github.com/vbzvibin/Online-Retail/blob/master/Online_Retail.ipynb
https://github.com/guipsamora/pandas_exercises/blob/master/07_Visualization/Online_Retail/Exercises_with_solutions_code.ipynb (answers to video questions)
https://www.youtube.com/watch?v=IpDPFOLsn0k

Instructions
You work on the **product team** for an **e-commerce site** that sells **unique, all-occasion gifts** mainly **to wholesalers**. The **marketing department** wants to send more personalised product offers to its customer base, but they need help with understanding what different types of targeted offers they should send, to whom and how often.

In addition, the **webstore owner** is also interested in understanding how customers are interacting with the products and if there are some products more popular than others. Your job is to help devise a **product offer strategy** based on customer sales data.

Deliverable
1. A **short presentation** of your analysis
2. key insights, and recommendations to the team as to:
   - what groups of customers they should target ? and also,
   - how we can improve our product offering ?

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Product Offer

A product offering is a group of platform features that work together to deliver a specific value proposition for an end client. That offering can be named, marketed, priced, sold and serviced.

This is good**: https://www.productplan.com/glossary/product-strategy/

Product Offer Strategy (https://www.brickstrategy.com/services/product-offer-strategy/)

A product offer strategy is about planning new launches or face-lifts over the entire product cycle. It should also interlink design, brand and innovation.
Product offer strategy is also about saying no to certain requirements, product features and performance levels, as well as **predicting future customer values that will appear and grow in demand during the product life-cycle**. A well defined product offer is the starting point of a successful product development.

KEY CHALLENGES
- How do you develop a product portfolio that ensures that you reach your overall strategic targets?
- What does our market segmentation model look like and which are our prioritised markets and customers? How does it link to our innovation and technology roadmap?
- What are the priority markets and customers of the products in scope? What is the competitive positioning of the product and attractiveness of the market?
- What is the product strategy for each market segment? What is the overall product launch plan?
- Which variance do we need to fulfil the market and what future launches should we plan and prepare for?

TYPICAL RESULTS
- A market segmentation model derived from the business strategy
- Market driven product variance in terms of performance levels, features and options
- Higher growth potential due to optimised product offer to more customers and market segments
- Better bottom line resulting from a better product portfolio

Key words
- Metric
- Aggregation
- Feature engineering (extraction)
- Granular / granularity
- Extrapolate / extrapolation

Notes to self
- Try to remember how you got Python working
- Learn 'R' ?!!

From GitHub:
Features

- InvoiceNo
- StockCode
- Description
- Quantity
- Invoice Date
- UnitPrice
- CustomerID
- Country

Questions

1. Based on your understanding of the data, what kind of business is this company in?
2. Analyse the sales performance of this company, and provide your insights
3. Based on your analysis, what are potential areas of improvement for the business?
4. What are additional business problems that can be analysed using this data? Support with explanation.

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What is business performance?