Inspiration
Data is everyone. Every online transaction we make, every text we send, every map route we search up. Data always plays a crucial part in our everyday lives. As such, we were always fascinated by the idea of having this much information at our disposal, and being able to work to analyze datasets was always something that intrigued us. It was then that we dove into the dataset “StrataScratch: Market Analysis in Dublin,” in order to learn more and help about our Airbnb guests and hosts.

What it does & How we built it
- Working in a team of four, we saw ourselves as a diverse group of students with different skill sets and backgrounds. Despite this, we believe that diversity is what fuels growth and success, and our Datathon project proved just that. Our different perspectives not only strengthened our analyses but also ensured comprehensive insight and innovative solutions. Using software such as DeepNote in addition to technologies such as Alteryx Designer to clean datasets and Python libraries (Pandas, Matplotlib, Seaborn, Numpy) to create visualizations, we were able to make meaningful discoveries, recognize patterns, and form accurate observations regarding this dataset. More importantly, we were all able to make contributions to this project and learn something new from interacting with the tools used.

Challenges we ran into
- Along the way, perhaps the greatest problem we faced occurred during the brainstorming phase when all we saw initially were numbers and letters in cells looking back at us through the screen. Our main issue dealt with trying to build connections with the information and variables we were provided. As such, we decided to start small with generic bar plots, and eventually worked up to more complex visualizations such as a heatmap and a better understanding of the data present. This proved to us that when facing a challenge our team continues to inspire each other in the learning process, concluding that we work and learn best as a team and from each other.

Accomplishments that we're proud of
- Throughout our process, we made several accomplishments consisting of finding the geographical search location vs. country, the timing of check-ins given the day and month, the searched neighborhoods vs. price, etc., and using visualizations such as heatmaps, world maps, bar graphs, box plots, scatter plots, and distributions. Furthermore, we considered many important factors and aspects of our project data to create several suggestions that hosts in Dublin can explore to maximize their Airbnb booking.

What we learned

- We learned how to work with time series data to create different graphs in Seaborn and Matplotlib. We learned how important it is to continually ask questions about the data and its patterns. Otherwise, we may go down rabbit holes that will lead to insignificant results (e.g. low acceptance rate for guests from India).

What's next for LOST IN DUBLIN

- Our next steps for LOST IN DUBLIN consist of diving deeper into the dataset to discover more connections among the variables. As mentioned previously, we performed trial and error when coding our statistical analysis, since at times, the output was 1) irrelevant to our research and/or 2) not what we expected. As a result, we would have to restart each task, brainstorm, and execute the new relationships that could be formed.

Project Name:
DUBLIN DISCOVERIES

Elevator Pitch:

Diving into Airbnb? Looking to be a customer or a host? Look no further, we have the suggestions confidently backed by our data analysis of the dataset “StrataScratch: Market Analysis in Dublin”!

About the project: Be sure to write what inspired you, what you learned, how you built your project, and the challenges you faced

Present everywhere around us is data. Every shopping transaction we make, every text we send, every map route we start, data always plays a crucial part in our everyday lives. As such, we were always fascinated by the idea of having this much information at our disposal, and being able to work to analyze datasets was always something that intrigued us. It was then that we dove into the dataset “StrataScratch: Market Analysis in Dublin”, to deliver accurate and easily understandable observations, conclusions, and suggestions to both Airbnb customers and hosts.

Working in a team of four, we saw ourselves as a diverse group of students with different skill sets and backgrounds. Despite this, we believe that diversity is what fuels growth and success, and our Datathon project proved just that. Our different perspectives not only strengthened our analyses but also ensured comprehensive insight and innovative solutions.

Using software such as DeepNote in addition to technologies such as Alteryx Designer to clean datasets and Python libraries (Pandas, Matplotlib, Seaborn, Numpy, Scikit-Learn) to create visualizations, we were able to make meaningful discoveries and recognize patterns regarding this dataset. More importantly, we were all able to make contributions to this project and learn something new from interacting with the tools used.

Using these tools, we first thought about how we could make these datasets easier to work with, and by using Alteryx Designer we did just that. From there, we first brainstormed the

relationships we wanted to explore in our dive for answers and then delegated the various tasks throughout our team. These consisted of finding the geographical search location vs. country, the timing of check-ins given the day and month, the searched neighborhoods vs. price, etc., and using visualizations such as heatmaps, world maps, bar graphs, box plots, scatter plots, and distributions.

Along the way, perhaps the greatest problem we faced occurred during the brainstorming phase when all we saw initially were numbers and letters in cells looking back at us through the screen. Our main issue dealt with trying to build connections with the information and variables we were provided. As such, we decided to start small with generic bar plots, and eventually worked up to more complex visualizations such as a heatmap and a better understanding of the data present. This proved to us that when facing a challenge our team continues to inspire each other in the learning process, concluding that we work and learn best as a team and from each other.

Built with:

We used software such as DeepNote, GitHub, and Google Workspace, in addition to technologies such as Alteryx Designer to clean datasets and Python libraries (Pandas, Matplotlib, Seaborn, Numpy) to create visualizations, with an end goal to make meaningful discoveries regarding this dataset.

Links:

- https://docs.google.com/presentation/d/1pbSc781kTv7XedcgViFl5gYkjL8rzetgSa7vKPPSytc/edit?usp=sharing
- https://github.com/ango10/DATA24-

Alex: 111
Colin: 1111
Rahul: 11
Rohan: 11

Congratulations! Your team has been hired as a new city Airbnb city manager for Dublin, Ireland! As city manager(s), you will try to boost the number and quality of hosts in Dublin to fit the demands from guests. The goal of this challenge is to analyze, understand, visualize, and communicate the demand / supply in the market.

Using software such as DeepNote in addition to technologies such as Alteryx Designer to clean datasets and Python libraries (Pandas, Matplotlib, Seaborn, Numpy, Scikit-Learn) to create visualizations, we were able to make meaningful discoveries and recognize patterns regarding this dataset. More importantly, we were all able to make contributions to this project and learn something new from interacting with the tools used.

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I led a dynamic team as the Airbnb city manager for Dublin, Ireland, tasked with enhancing the city's hosting landscape. Our mission was to analyze, understand, visualize, and communicate market demand and supply, aiming to elevate the experience for guests and hosts alike. Leveraging advanced tools such as DeepNote, Alteryx Designer, and Python libraries (Pandas, Matplotlib, Seaborn, Numpy, Scikit-Learn), we cleaned datasets and unearthed key insights. Our collaborative efforts were recognized with the UCI DATATHON 2024 award for Best Analysis of Market Analysis in Dublin, sponsored by StrataScratch. Proud to have led a team that made a tangible impact in the hospitality sector.

UCI DATATHON 2024 WINNER:
Best Analysis of Market Analysis in Dublin [Sponsored by StrataScratch]

UCI Datathon 2024 Winner: “Best Analysis of Market Analysis in Dublin [Sponsored by StrataScratch]”. Given StrataScratch datasets, our team performed an Exploratory Data Analysis (EDA) to analyze, visualize, and present market demand and supply, aiming to elevate the Airbnb experience for guests and hosts. Leveraged tools such as DeepNote, Alteryx Designer, and Python libraries (Pandas, Matplotlib, Seaborn, NumPy, Scikit-Learn). Formed visualizations such as Day & Month Performance Heatmap, Geographical Heat Maps, and tested/trained DecisionTreeClassifier ML model to achieve 88.48% accuracy.