**CSCE 5320 Project Description (Story Telling)**

**“Chapter 1 Life”**

**Who** are the people or communities in need of help?

Starting from amateur single person investors to small mid and large financial investment firms and traders. It could also be anyone who doesn’t derive tangible benefits and is analysing the market for pure self awareness and educational point of view.

Although the insights may not solve a specific problem that these groups might have, it does provide information for understanding the trends and patterns in cryptocurrency markets. This would help these groups to make informed decisions which has an overarching impact on the financial community depending on the cryptocurrency markets

Also understanding the risks and benefits associated with cryptocurrency can shape policy and regulation thereby having a tangible impact the broader society

**What** problem happened to them?

A potential issue that has been historically linked to cryptocurrency is the lack of regulation associated with and hence a breeding ground for fraudulent activities, affecting cryptocurrency investors.The volatility of this market has also been a major concern, particularly for amateur investors who lack the knowledge of the market

* **When** did the problem take place?

Since cryptocurrency is still in its infancy compared to FIAT currency, the market has been volatile and unstable since its inception with the world still grappling with lack of understanding of the technology that underpins this concept.

Although the adoption of the cryptocurrency has been picking pace recently with lot of applications and currencies coming every day the spread of knowledge has been sparse with more development concentrated in few developed countries and price fluctuations being quite up and down with not much knowledge on the actual cause

* **Where** means two things: 1) The environment and settings that the people or the community is living in, and 2) the place/location where the problem take place.

Crypto currency exchanges are worldwide as it’s a decentralized asset traded at various levels so the where aspect is very abstract

Why means the possible causes and/or origin of the problem?

For the cryptocurrency trends and insights, the possible causes or origin of the problem could vary depending on the specific trend or insight being analysed.

There might be many reasons for causing these problems and they can be vary depending on the trend and insight that is being analysed

Example :

The high voltality which means the cryptocurrency keeps changing each and every time including lack of regulation and some times this will be done by the investors and also there will be market crashes caused by negative news or fake manipulations

And also these are new and these need to be adopted which these might take time and also high energy consumption might also be a reason for this

* **How:** If you would like, you can add a dimension of how. How did it happen? Sometimes, the answer to how can be covered by what, when and where.

Price of cryptocurrencies have had a lot of factors affecting it. Ranging from how Bitcoin prices shot up by a twitter post by Elon Musk about accepting BTC as a form of payment for Tesla to it dropping down sharply due to crackdown on Bitcoin miners in China

COVID also had a huge impact on the rise and fall of cryptocurrency prices, how did that happen?

How are cryptocurrency prices influenced by social media sentiment? Research has shown that social media posts can influence investor sentiment and impact cryptocurrency prices. Specifically, positive posts tend to lead to price increases, while negative posts can lead to price decreases.

**Chapter 2 Data.** The objective of Chapter 2 is to use stories as hands-on practice to link large-scale data sets with real-world problems identified in Assignment 1. Meanwhile, this is also a process for data cleaning, data preprocessing, and data management using the tools learned in this course.

**This should guide the process of identifying data sets that are most relevant to the real-world problem in Assignment 1:**

* **Who** is the data set about? **Who** were sampled in this data set? **Who** were over sampled or under sampled? Are they representative of the main characters in Assignment 1? Is there any identifiable information or is there any risk of disclose identifiable information? This is fundamentally about the sampling issue, and anonymity.

The data set used in cryptocurrency trend analysis may vary depending on the specific analysis being conducted. In general, the data set would include information on the historical prices, trading volume, market capitalization, and other relevant metrics of various cryptocurrencies. The data set could also include information on news articles, social media sentiment, and other external factors that may impact the cryptocurrency market.

Regarding the sampling issue, the data set should be representative of the overall cryptocurrency market, including various cryptocurrencies and different time periods. It is important to avoid over-sampling or under-sampling specific cryptocurrencies or time periods, as this can skew the analysis results.

Regarding anonymity, the data set should not contain any identifiable information that could compromise the privacy of individuals or entities involved in cryptocurrency transactions. Any personal data should be removed or anonymized to protect the privacy of the individuals involved. Additionally, the data set should comply with any applicable data protection laws and regulations to ensure the responsible use of data.

* **What** events, activities, behaviors, and observations etc. are recorded by the data set? Does the data set record the targeted events, activities, behaviors, etc. in Assignment 1? This is fundamentally about the variables.

Regarding Cryptotrend analysis:

The data set records the price movements of cryptocurrencies over time, as well as various other metrics such as trading volume, market capitalization, and network activity. While this data set does not directly record the events, activities, or behaviors of individuals or communities, it does provide insights into the behavior of the cryptocurrency market as a whole.

In terms of the targeted events or behaviors in Assignment 1, the data set can provide information on trends and patterns in the cryptocurrency market that may be relevant to the problem identified in Chapter 1. For example, if the problem is related to the high volatility of certain cryptocurrencies, the data set can be used to examine price movements and identify any potential causes or correlations.

Overall, the variables recorded in the data set are relevant to understanding the performance and behavior of the cryptocurrency market, and can be used to provide insights into real-world problems identified in Assignment 1.

* **When** did the event, activity, behavior, and observation, etc. take place? **When** were the data collected? Is it longitudinal or cross-sectional? Are they real time data? How old or fresh are the data? To what extent generalization can be made across time to inform Assignment 1? This is fundamentally about the temporal structure of the data set, and the external validity of the data set across time.

Based on the dataset you provided, the events recorded are the daily high, low, open, close, volume, and market cap of Bitcoin. The data was collected on various dates between April 29th, 2013 and May 11th, 2013. The dataset is cross-sectional as it records information on a particular date for Bitcoin. The dataset is not real-time data and is relatively old, as it is from 2013. It is important to note that generalizations made from this dataset to inform Assignment 1 may be limited due to the age of the data and the fact that cryptocurrency markets have evolved significantly since 2013.

* **Where** did the event, activity, behavior, and observation, etc. take place? **Where** were the data collected if the information is available? What does the geographical coverage of the data set look like? Does the data set contain geographical information (GIS)? Is this a local, regional, national, or global data set? To what extent generalization can be made across settings to inform Assignment 1? This is fundamentally about geographic variables in the data set, and the external validity of the data set across settings.
* The dataset you provided in your previous message is related to cryptocurrency trends and insights, and it includes information about the date, high, low, open, close, volume, market cap, and country for Bitcoin on different days. While the country column provides some geographic information, the dataset does not explicitly capture the location of the event, activity, behavior, or observation. Therefore, the question of where the events took place is not applicable to this dataset.
* However, in general, if a dataset contains geographic information (e.g., latitude, longitude, zip code, etc.), it can be used to analyze spatial patterns and make generalizations across different geographic settings. The geographic coverage of the data set is an important consideration when trying to make generalizations about the real-world problem identified in Assignment 1. If the data set covers a limited geographic region, it may not be appropriate to generalize the findings to other regions or countries. On the other hand, if the data set covers a broad geographic area, it may be possible to make more generalizable conclusions.
* **Why** did the event, activity, behavior, or observation etc. take place? **Why** were the data collected?

The reasons for collecting the data in a cryptocurrency trend analysis can be multifaceted. One reason could be to monitor and understand the behavior of cryptocurrency markets and the factors that influence their fluctuations. Another reason could be to track the adoption and usage of cryptocurrencies by individuals, organizations, or countries. Additionally, the data could be collected to analyze the impact of cryptocurrency on the global economy, financial systems, or social behavior. Ultimately, the purpose of collecting data in cryptocurrency trend analysis is to gain insights into the cryptocurrency phenomenon and its implications for various aspects of society.

* **How:** If you would like, you can add a dimension of how. How did it happen? Sometimes, the answer to how can be covered by what, when and where.

In the case of the cryptocurrency dataset, the "how" may refer to the methods used to collect the data, such as through trading platforms, exchanges, or other sources. It may also refer to the technical aspects of how the data was recorded, such as the data format or structure. Additionally, the "how" may also include any factors or events that influenced the cryptocurrency trends and values, such as economic or political events, technological developments, or changes in investor sentiment. Understanding the "how" of the data can provide important insights into the factors that may have influenced the trends and behaviors observed in the dataset.

**“Chapter 3 Users” is a story about the user using the application/visualization:**

* **Who**: the main character is the targeted user or audience?

the targeted user or audience could be investors or individuals interested in trading cryptocurrencies. If the project is focused on analyzing healthcare data, the targeted user or audience could be healthcare providers or patients.

* **What** can the application do? What does the visualization show?

Based on the provided dataset, a cryptocurrency application/visualization could potentially show the trends and fluctuations in the value of Bitcoin (BTC) over time. It could allow users to view the high, low, open, and close prices of Bitcoin on a given date, as well as the volume and market cap. The visualization could potentially include graphs, charts, or other visual representations of the data to help users better understand the trends and patterns in the cryptocurrency market. Users could potentially use this information to make informed decisions about buying, selling, or trading Bitcoin.

* **When** can the user use the application/visualization?

In the case of the cryptocurrency trends and insights, the user can use the application/visualization at any time they need to access information about the current state and trends in the cryptocurrency market. The visualization can be updated in real-time or on a regular basis to reflect the latest market data and trends. The user may also choose to use the application/visualization at specific times, such as before making a cryptocurrency investment decision or when tracking the performance of their existing investments.

* **Where** will the visualization and applications be deployed, for example, mobile phones, the web etc.?

Regarding the deployment of the visualization and application for the cryptocurrency analysis, it depends on the specific application or platform being used. The visualization and application can be deployed on various platforms, such as web-based platforms or mobile applications. It is up to the developers to decide which platform is most suitable for their application and target aud

* **Why** is the visualization or application useful to the user?

In the context of cryptocurrency trends and insights, the visualization or application can be useful to the user in several ways:

Understanding trends: The visualization can help the user to understand trends in cryptocurrency prices and volumes over time, which can be useful for making informed investment decisions.

Identifying opportunities: By analyzing the data presented in the visualization, the user can identify potential investment opportunities or areas of the market that may be undervalued or overvalued.

Tracking portfolios: If the application includes a feature for tracking cryptocurrency portfolios, the user can use it to monitor their investments and make adjustments as needed.

Staying informed: The application can provide up-to-date information and news about the cryptocurrency market, helping the user to stay informed about new developments and trends.

Overall, the visualization or application can be a valuable tool for the user to stay informed and make data-driven decisions in the complex and fast-changing world of cryptocurrency.

* **How** will the people/the community use this application or visualization to make changes?
* It depends on the specific application or visualization and the problem it is addressing. In general, the goal is for the user to gain insights from the data and use those insights to inform decisions or actions that can lead to positive change. For example, in the case of a cryptocurrency trend analysis tool, users may use the insights gained to inform investment decisions or to adjust their business strategies. The key is to ensure that the application or visualization is user-friendly and provides clear and actionable insights that can lead to real-world impact.