



**IIT MADRAS**

**B.Sc. in data science and  
programming**

**Project proposal**

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# TITLE

Resolving issues being faced by a yarn sales and marketing company using data analytics.

## EXECUTIVE SUMMARY

I am going to investigate and try resolving issues being faced by a yarn sales and marketing company, which goes by the name of Avon traders. They exclusively deal in threads. There are a lot of problems this type of business can encounter. These can range from not keeping up with the current trends, and hence missing out on customers' needs and preferences to more serious ones, like inventory management. The company makes profit from selling threads to various factories that manufacture apparels. Hence, earning the goodwill from owners of such factories is also crucial part for healthy growth of such a business.

Working on data can help us come out with inferences that can help the company make more mindful decisions. Customer insights are reflected in the data, and hence that can help the company keep up with customer's needs, and give them a competitive edge while also keeping the risks involved minimum. Once the data is processed the company gets a direction to move in, which can motivate the owner to take calculated risks in order to reach a goal. The ultimate goal is to flourish the business as much as possible.



## **BUSINESS BACKGROUND**

The company in question here is Avon traders. They cater to the factories in and around Delhi and has been running for the past 7+ years.

In simple words, they buy threads, from a factory based in Tronica City, Ghaziabad, which is owned by a partner company of theirs. And then sell those threads to factories which make different types of clothing like Jeans, vests, innerwear, shirts, t shirts etc.

The threads they transport depends on the order of the client.

The company is owned by Mr. Gopal (Name changed). He and his son are in the charge of the company. His son manages deliveries and orders in the warehouse. Quality threads create quality apparels. They are efficient in the service they provide and their goal is to make sure that the factories are supplied with the threads in time, and there are no delays. Delays create a bad impression, which can hamper such a business model, which heavily relies on trust factor.

# **PROBLEM STATEMENT**

Having talked to his son on phone and person multiple times. He was able to shortlist some major problems that they have been facing –

- Inventory management. How can they make sure that they have an inventory that can cater to most of their clients.
- Credit issues. How can they make sure that their clients pay them the amount they owe for the order they placed in time?

## **BACKGROUND OF THE PROBLEMS**

### **Problem 1 – Inventory management**

Their customers, the factories that make apparel can have varying needs. Some factories make shirts, so they would want cotton threads, or if they make denim jeans, they would want polyester sewing threads. Sometimes they must turn down clients because the threads may not be available, or may have been new to the market. They also want to avoid overstocking or understocking of certain threads or yarns. Running out of popular items is the worst nightmare for a business! Sometimes they have found that their report can be a bit inaccurate due to some items being disorganized. That usually happens when a customer cancels their order at the last moment. They own a warehouse, and while they have properly labelled and organized each type of article (the label on the article tells us the count of threads(rolls), and its type with its thickness). Pictures of their warehouse:





## **Problem 2 – Credit issues**

They make sure to tell the factories that they expect payment for their service to them within 50 days of delivery. But some clients take longer than that and that can create problems to them because their business, as long as it has been running, is not large. So, they cater to a few clients only. If the payment gets delayed face problems buying new yarn for other customers, and also face problems in keeping up with their bills, especially if the payment for a large order is being delayed.

## **PROBLEM SOLVING APPROACH**

### **Methods used:**

- We need to create an inventory table, which lists out different types of threads, and data which lists out how many and which types of threads were sold to which client. Doing this can help us pinpoint the threads that are fast moving, and slow moving. Basically, we will go over the ledger of the stock in warehouse.
- Creating diagrams, and plotting graphs can give us an overview of the business. They can help us give more detail on what types of stocks are causing problems in the inventory. We can also look at the trends, which in turn can help us forecast accurately and efficiently.
- Since there are a lot of different types of threads, with different thickness and count, we can use pivot tables to analyze and summarize data from a bigger table. Different types of operations

on the pivot tables can help us point out things that may be causing issues to the business.

- The company can place regulations and ask their customers to follow them in an assertive way to solve credit issues. This also promotes professional behavior, and customers appreciate that.

### **Intended data collection:**

Since this business revolves around buying and selling yarn, we will need data on purchase and sale of the threads.

The data we essentially need:

- ✓ Date of sale/purchase
- ✓ Article(s) (The “thread code”)
- ✓ Quantity of each “thread code” sold/purchased
- ✓ Price
- ✓ Discount (if any)
- ✓ Total (with tax)

I will also take any other data that the business is willing to provide if it can help improve the quality of this project.

### **Analysis tools:**

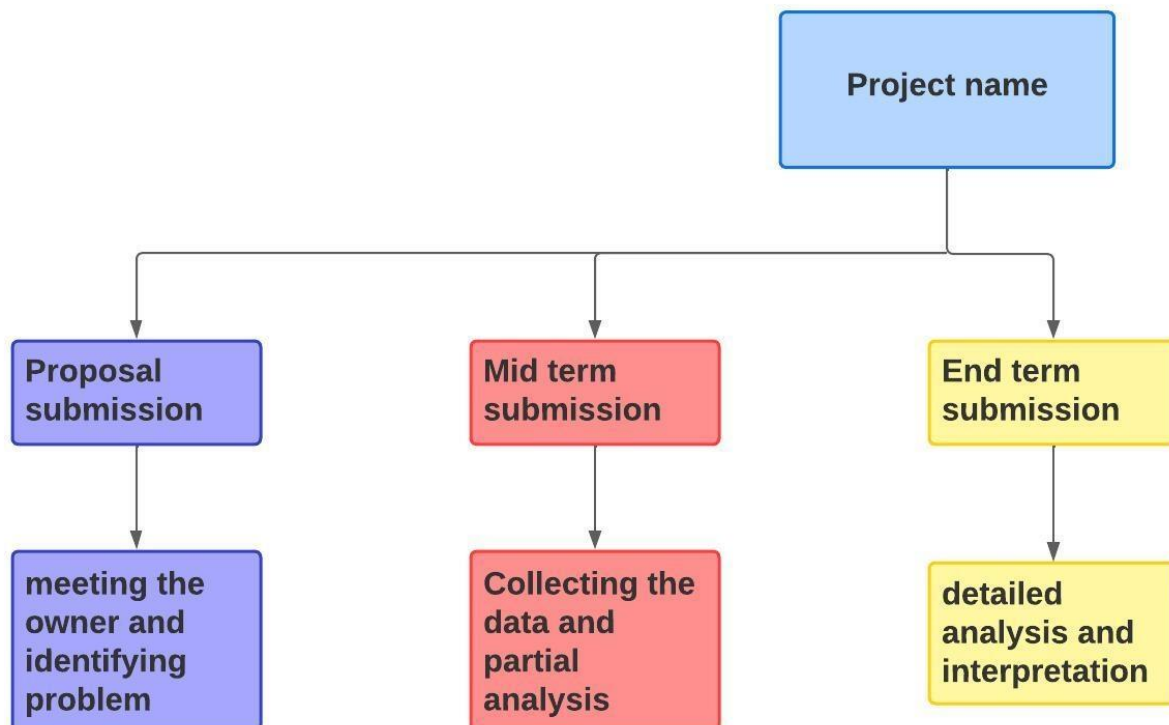
- Python: Python is a high-level, interpreted programming language. Python has a large standard library, which provides developers with pre-built modules for tasks such as file I/O, networking, and web development. Additionally, there is a vast ecosystem of third-party packages available for Python that



extend its functionality. Python's syntax is designed to be easily readable and requires fewer lines of code compared to other programming languages, making it a popular choice for rapid prototyping and development. It is an open-source language, meaning that the source code is freely available, and users can modify and distribute it as needed.

- Excel: It is one of the most popular software applications used for data analysis and manipulation, financial modeling, and other tasks that involve working with data. Excel provides users with a grid of cells arranged in rows and columns, where they can enter, edit, and manipulate data.

## EXPECTED TIMELINE





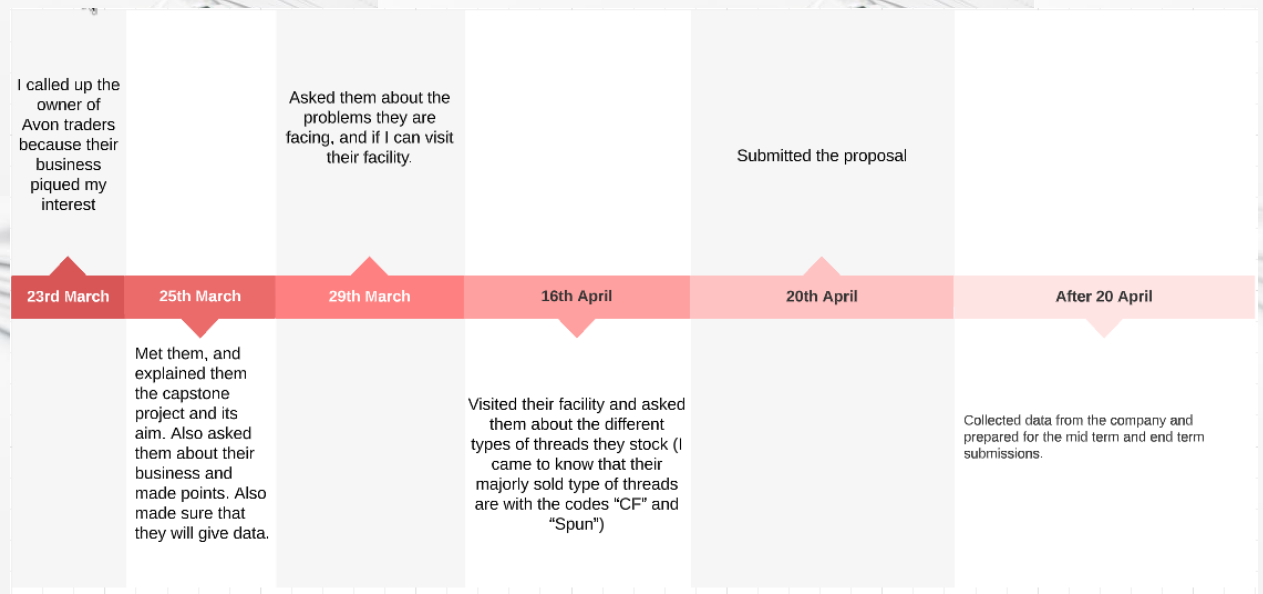
*23<sup>rd</sup> March* – I called up the owner of Avon traders because their business piqued my interest

*25<sup>th</sup> March* – Met them, and explained them the capstone project and its aim. Also asked them about their business and made points. Also made sure that they will give data.

*29<sup>th</sup> March* – Asked them about the problems they are facing, and if I can visit their facility.

*16<sup>th</sup> April* – Visited their facility and asked them about the different types of threads they stock (I came to know that their majorly sold type of threads are with the codes “CF” and “Spun”)

*20<sup>th</sup> April* – Submitted the proposal.



## EXPECTED OUTCOMES

Problem 1 – An organized inventory with proper labels. Keeping up the trend and deriving inferences from data can help avoid inventory management issues

Problem 2 – Keeping a strict professional behavior with clients can help mitigate credit issues

Thank you