

Global Sales Data Analytics

A PROJECT REPORT

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Project Report Format

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1. INTRODUCTION

1.1. Project Overview

Sales Analysis is the process of understanding how your business performs in terms of sales. It provides insights into the past, present, and future performance of a business and can be used to help you forecast trends, identify opportunities for growth, and develop a strategic action plan for your company.

1.2. Purpose

The goal of sales analytics is always to simplify the information available to the sales and Marketing teams. It should help them clearly understand the team's performance, sales trends, and opportunities to gain many insights and develop strategies that are better than the previous one.

2. LITERATURE SURVEY

2.1. Existing problem

- The global sales and retail will primarily provide a platform to purchase, sell, distribution of items, product or service through the internet.
- This system is not much user-friendly as one needs to go to the market physically and then select items only from the available list.
- For this type of shopping, one needs to have an ample amount of free time.
- This system will provide the detailed description of the products to users so that they can compare to the different product and will by the one which is more suitable to them.

2.2. References

- [1] Chaiyasoonthorn, W., & Suksa-ngiam, W. (2019). The Diffusion and Adoption of Electronic Payment Systems in Bangkok. *International Journal of E-Business Research (IJEER)*, 15(2), pp.102-115.
- [2] Nanda, N. N. (2019). The Influence of E-Commerce, Product Prices and Product Design on Purchasing Decisions in Souvenir Shop Tauko Medan. *Budapest International Research and Critics Institute (BIRCI-Journal): Humanities and Social Sciences*, 2(3), 388-395

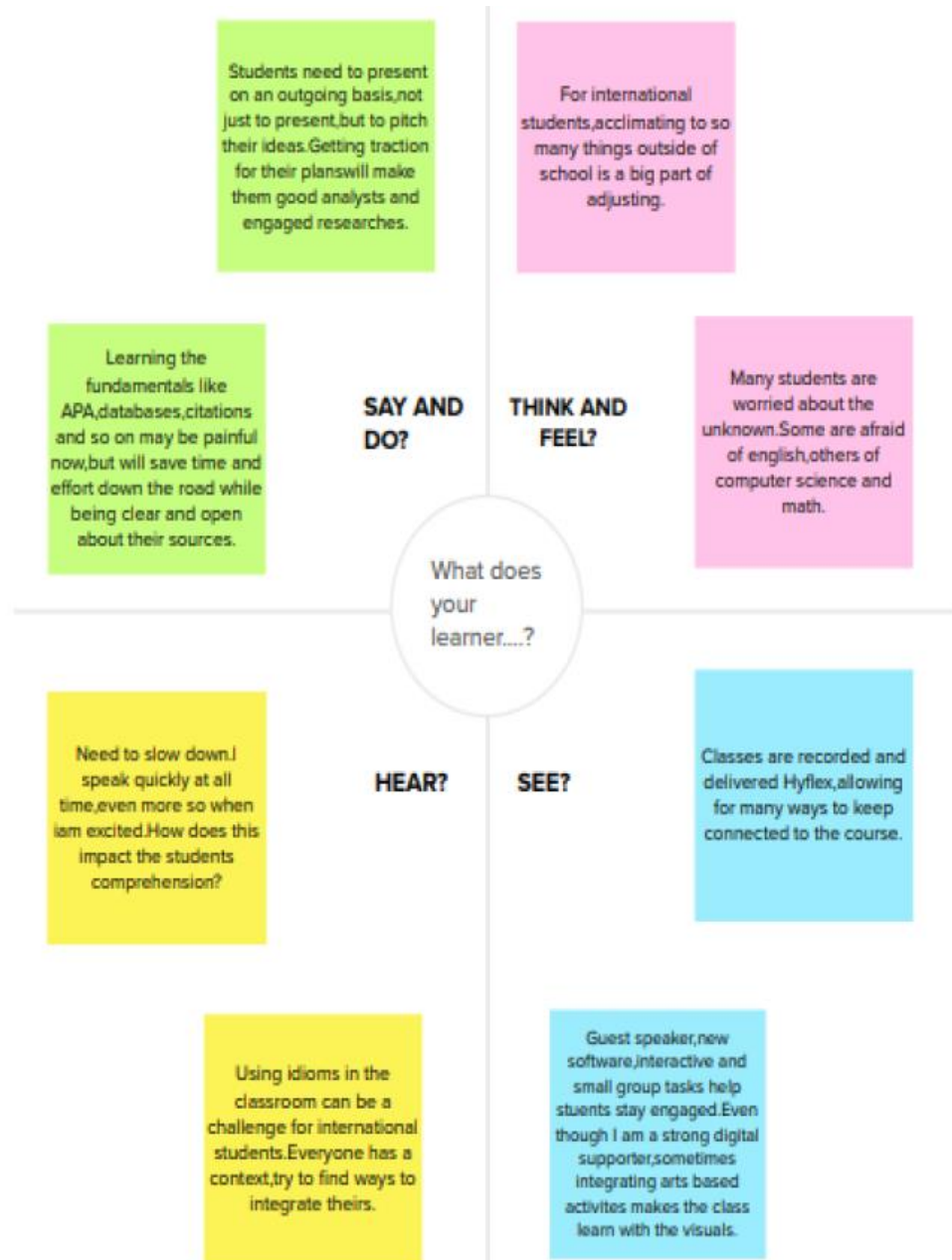
2.3. Problem Statement Definition

- Collection dataset.
- Upload the dataset into cognos.
- Open the properties->data module.
- If null value is present in character field use mode method.
- If the null value is present in continuous field use average or medium.
- Display the data in respective charts.
- Create conclusion using summary.

3. IDEATION & PROPOSED SOLUTION

3.1. Empathy Map Canvas

- An empathy map is a tool which aids in understanding another person's perspective.
- Empathy maps have up until now not been used in a medical education setting.
- Objective: To assess the attitudes towards, applicability and usefulness of empathy maps as part of medical student's communication skills training.



3.2. Ideation & Brainstorming

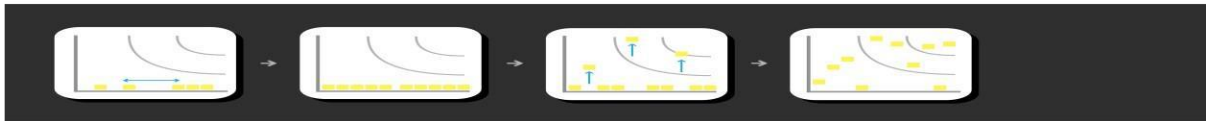
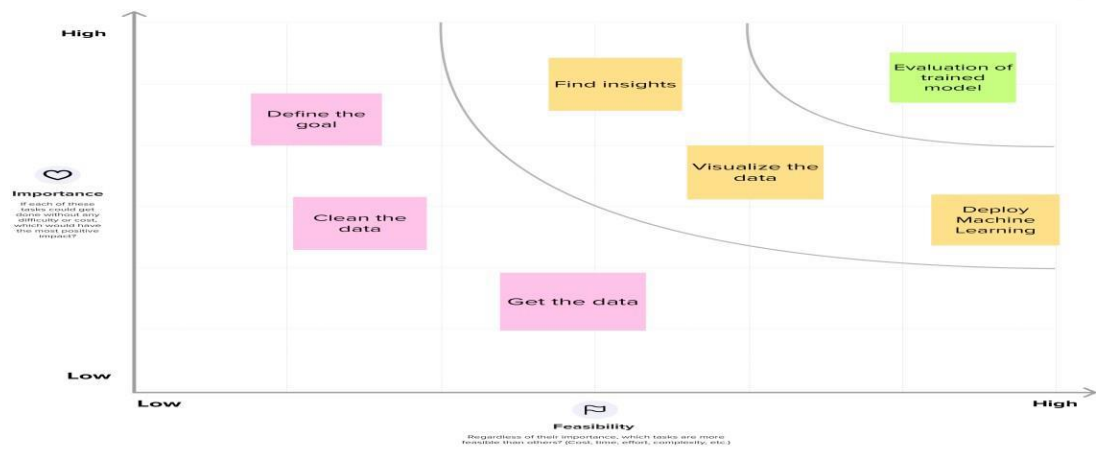
- To try to solve a problem or come up with new ideas by having a discussion that includes all members of a group : to discuss a problem or issue and suggest solutions and ideas.

4

Prioritize

Your team should all be on the same page about what's important moving forward. Place your ideas on this grid to determine which ideas are important and which are feasible.

⌚ 20 minutes

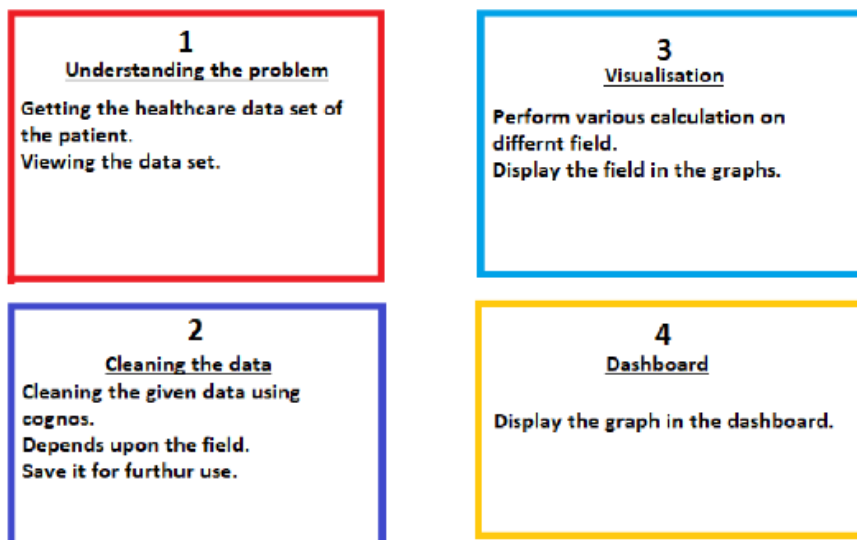
**3.3. Proposed Solution**

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	<ul style="list-style-type: none"> Decision makers of E-commerce companies(User) need a way to comprehend raw data, analyse and make more informed business decisions. E- commerce companies(User) need a way to understand the shift in preferences of customers and the current trend, so that they can satisfy the customers.
2.	Idea / Solution description	A powerful and easy-to-use sales analytics tool that automates and visualizes sales trends to optimize business outcomes.
3.	Novelty / Uniqueness	<ul style="list-style-type: none"> Interactive Dashboard and simple UI Dynamic and real time analytics AI based predictions and forecasting
4.	Social Impact / Customer Satisfaction	<ul style="list-style-type: none"> Visible profits driven by informed decisions Optimize sales and marketing Ability to react to competitor's strategies

5.	Business Model (Revenue Model)	Three tier pricing- Basic, Standard, Enterprise <ul style="list-style-type: none"> • Basic: Limited features targeting startups and individuals. • Standard: Limited premium features. Target customers- Medium Scale businesses. • Enterprise with all premium features targeted at Large corporations.
	Scalability of the Solution	<ul style="list-style-type: none"> • More B2B customer services can be provided alongside • Usable by all customer facing companies and startups of all scale

3.4. Problem Solution fit

Solution Fit



4. REQUIREMENT ANALYSIS

4.1. Functional requirement

S.NO	Functional Requirements	Story
1	Data Gathering	Gathering data From kaagle
2	DB	Upload data in DB2
3	Connect DB with Cognos	Cleaning Data
4	Data Exploration	Explore the data in graphical format
5	Dashboard	Create Dashboard interactively
6	Report	Create report for various field
7	Story	Create story and animation

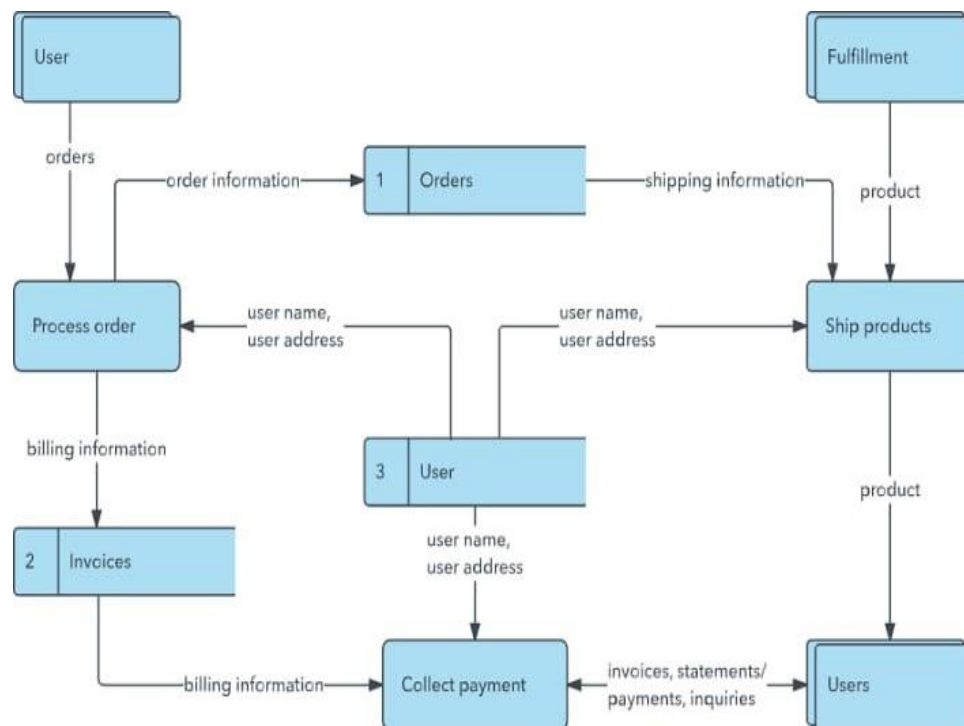
4.2. Non-Functional requirements

Working with open source platform	GitHub
Prepare Step by Step process Doc	Project Documents

5. PROJECT DESIGN

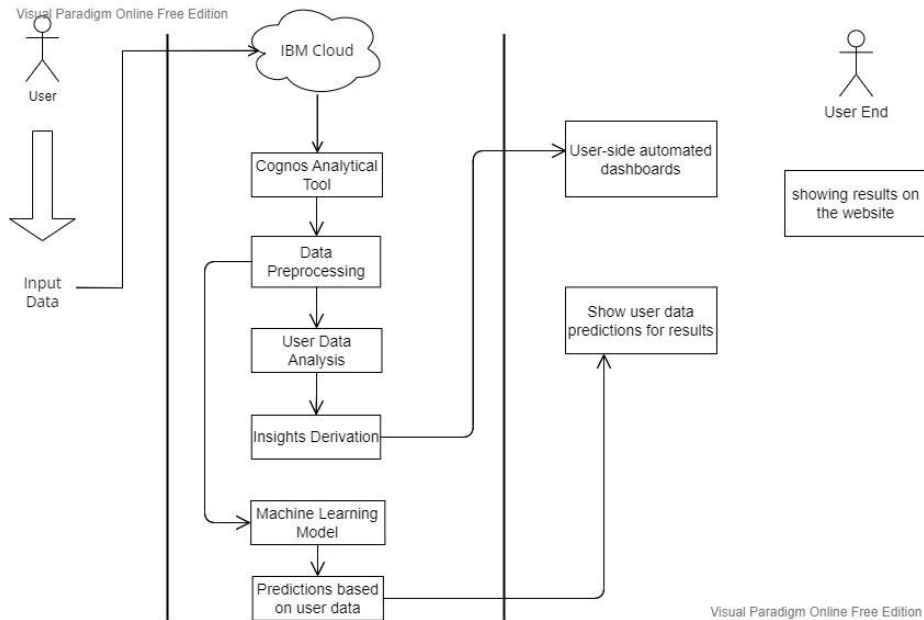
5.1. Data Flow Diagrams

A data flow diagram shows the way information flows through a process or system. It includes data inputs and outputs, data stores, and the various subprocesses the data moves through. DFDs are built using standardized symbols and notation to describe various entities and their relationships.



5.2. Solution & Technical Architecture

- Solution Architects are most similar to project managers, ensuring that all parties, including stakeholders, are on the same page and moving in the right direction at all stages.
- Technical architects manage all activities leading to the successful implementation of a new application.



➤ **Components & Technologies:**

S.No.	Component	Description	Technology
1	User Interface	User uploads the csv or excel format files into the web pages	HTML, CSS, JavaScript
2	Application Logic-1	The user data will pass into the IBM cloud for storing and acts as a data source	IBM cloud
3	Application Logic-2	In cloud, data will be fetched by the Cognos analytical tool for data analysis	IBM Cognos analytical tool
4	Application Logic-3	The pre-trained Dashboards will be present to perform analysis on the incoming data	IBM Cognos analytical tool
5	Database	Data will be retrieved from cloud	MySQL
6	Cloud Database	Database Service on cloud	IBM DB2, IBM Cloud
7	File Storage	Customer sales data is uploaded in cloud through interface	IBM Block Storage or Other Storage Service or Local Filesystem
8	External API-1	To perform data analysis on the user data	IBM Cognos Tool
9	External API-2	To build the machine learning model for classification	Jupyter Notebook
10	Machine	To do the predictive analysis on the	Predictive analysis model,

	Learning Model	input data	etc.
11	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration: Using the flaskCloud Server Configuration: IBM cloud	Local, Cloud Foundry

➤ **Application Characteristics:**

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Google Collaboratory, Jupyter notebook	Google
2.	Security Implementations	To protect data from the unauthorized access	256-bit AES algorithm
3.	Scalable Architecture	Supports various data sizes	IBM Cloud

5.3 User Stories

S.NO	Functional Requirements	User Story Number	Tasks	Acceptance Criteria	Priority	Release
1	Data Gathering	1	Gathering Data	Using API	High	Sprint1
2	Pre-processing	2	Cleaning the data in proper format	Cleaned Data	High	Sprint 1
3	Data Exploration	3	Explore the data	Display data in graph	High	Sprint1
4	Dashboard	4	Creating various chart	Intractive Dashboard	High	Sprint 2
5	Reports	5	Creating report for various field	Intractive Report	High	Sprint 3
6	Story	6	Creating Animation Using picture	Various animation and slides	High	Sprint 4
7	Web Application	7	Cognos Embeded Web application	Intractive Web Application	High	Sprint 4

6 PROJECT PLANNING & SCHEDULING

6.1 Sprint Delivery Schedule

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	Registration	1	Customers can register by entering the basic personal details through website	2	High	Hemadharshin K
	Login	2	As an authenticated user using their login credentials user can view the entire website and various options	2	High	Haritha M
	Working with the Dataset	3	Initially Data Preprocessing like filtering, formatting and data cleansing have to be done.	2	High	Abinayashri KBS
		4	Load the dataset in the cloud platform and analyse the data points by Visualization techniques.	10	High	Aarthi BG

6.2 Sprint Planning & Estimation

Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on Planned End Date)	Sprint Release Date (Actual)
Sprint-1	20	6 Days	24 Oct 2022	29 Oct 2022	20	29 Oct 2022
Sprint-2	20	6 Days	31 Oct 2022	05 Nov 2022	20	05 Nov 2022
Sprint-3	20	6 Days	07 Nov 2022	12 Nov 2022	20	12 Nov 2022
Sprint-4	20	6 Days	14 Nov 2022	19 Nov 2022	20	19 Nov 2022

7. Testing

7.1 Test Cases

- Verify user is able to see Home page.
- Verify user is able to see Dashboard page.
- Verify user is able to navigate to Report page.
- Verify user is able to navigate to story page.
- Verify filters are working

7.2 User Acceptance Testing

1. Purpose of Document

The purpose of this document is to briefly explain the test coverage and open issues of the [ProductName] project at the time of the release to User Acceptance Testing (UAT).

2. Defect Analysis

This report shows the number of resolved or closed bugs at each severity level, and how they were resolved

Resolution	Severity 1	Severity 2	Severity 3	Severity 4	Subtotal
By Design	8	5	0	3	16
Duplicate	1	0	5	0	6
External	0	3	2	1	6
Fixed	13	4	3	16	36
Not Reproduced	0	1	0	0	1
Skipped	0	1	0	1	2
Won't Fix	1	4	2	1	8
Totals	23	18	12	22	75

3. Test Case Analysis

This report shows the number of test cases that have passed, failed, and untested



Section	Total Cases	Not Tested	Fail	Pass
Print Engine	9	0	0	9
Client Application	43	0	0	43
Security	1	0	0	1
Outsource Shipping	1	0	0	1


Exception Reporting	9	0	0	9
Final Report Output	10	0	0	10
Version Control	1	0	0	1

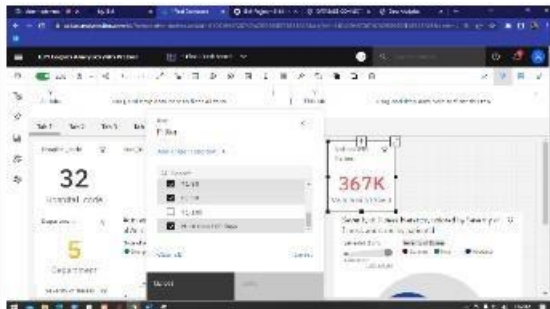

8. Results
8.1 Performance Metrics

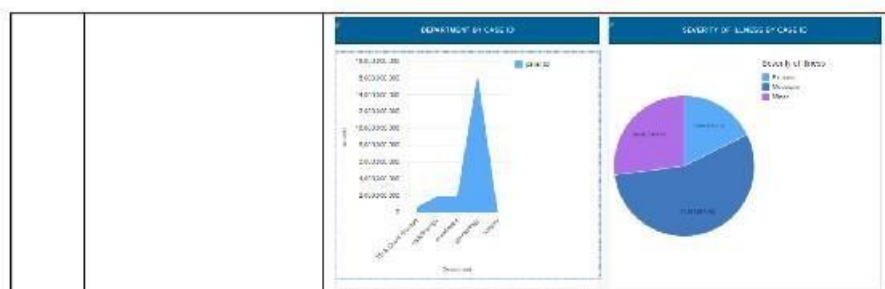
Model Performance Testing:

Project team shall fill the following information in model performance testing template.

S.No.	Parameter	Screenshot/Values
1.	Dashboard design	<p>Number of Visualizations / Graphs – 22</p> <p>Number of tabs – 8</p> 
2.	Data Responsiveness	<p>Data's will dynamically changed and graph also changed.</p> 

3.	Amount Data to Rendered (DB2 Metrics)	<p>Number of rows read – 318438</p> <p>Number of rows loaded – 318438</p> <p>Number of rows rejected – 0</p> 
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4.	Utilization of Data Filters	<p>We created filters for Dashboards which is perfectly working.</p> 
5.	Effective User Story	<p>Number of Scene Added – 7 Animations are perfectly displayed. Images are perfectly rendered.</p> 
6.	Descriptive Reports	Number of Visualizations / Graphs – 6



9. ADVANTAGES

- User friendly user-interface to access the website.
- Enable Deals, Bargains, Coupons, and Group Buying
- Affordable advertising and marketing.
- Flexibility for customers & No reach limitations.
- Virtual Assistant plays major role of Data Owner for time consumption process.
- Several payment modes.

DISADVANTAGES

- Privacy
- Replacing Doctors
- Frustration with poor implementation.Cybersecurity risks
- Healthcare Regulatory Changes.
- Healthcare Staffing Shortages

10. FUTURE SCOPE

- Online websites now provide detailed descriptions of their products so that the customers have a clear idea. Many websites also provide feedbacks that other users have given. This helps in assuring other prospective customers.
- A huge plus point while doing business online is the lack of need for an infrastructure with which the customer could judge the business. Any online business can sell their products from their own rooms, garages, or even the back of their car.

12. Conclusion

- From the design, this design has fulfilled the basic requirement of a comfortable design and practicability based on various statement of the experts.
- Therefore, this design can be used because it ful fill the standard qualification for e-commerce website that is easy to use and visually comfortable.

GITHUB LINK:

<https://github.com/IBM-EPBL/IBM-Project-7922-1658902945>

Demo Video:

<https://drive.google.com/file/d/114taTIKEWuq2Oa572r3RWdGAyBLtOOm/view?usp=sharing>