





#### **Learning Outcomes**

- O Discover different problems spaces in various industries
- O Understand the problems involved & the key questions
- Explore how data can used to solve problems
- Oet an idea of what a data-driven approach looks like

**Guidelines** 



Listen only mode



Ask questions at the interest of the larger audience



Questions in the O&A Box

Thank you

Kindly utilize the chat box for subject-relevant questions only to maximize your learnings from the session.

#### **Meet Your Speaker**



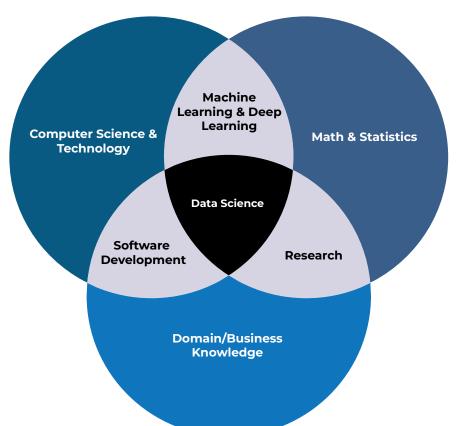


# **Dr. Abhinanda Sarkar Academic Director at Great Learning**

- Alumnus Indian Statistical Institute, Stanford University
- Faculty MIT, Indian Institute of Management, Indian Institute of Science
- Experienced in applying probabilistic models, statistical analysis and machine learning to diverse areas
- Certified Master Black Belt in Lean Six Sigma and Design for Six Sigma in GE

# Let's begin by defining data science...



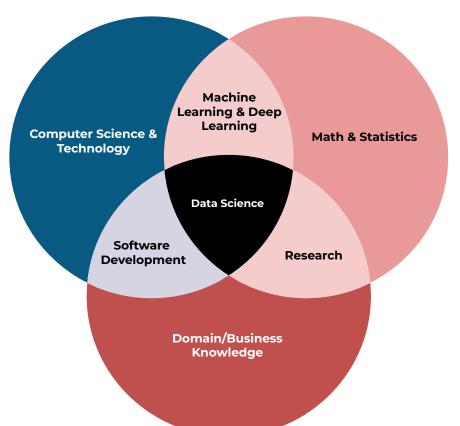


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# Let's begin by defining data science...





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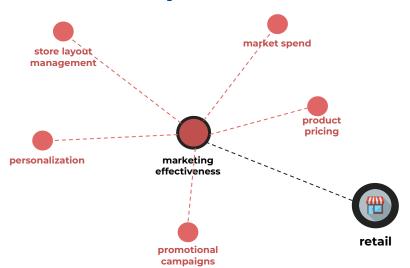
## **Problem Space - Retail Industry**





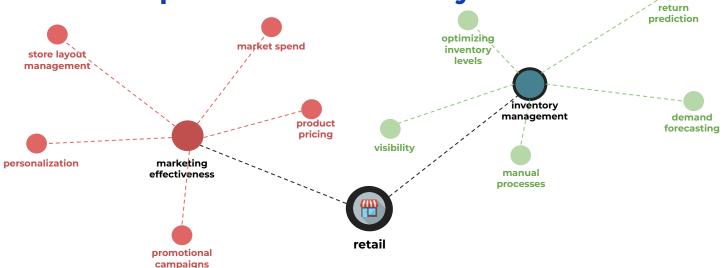
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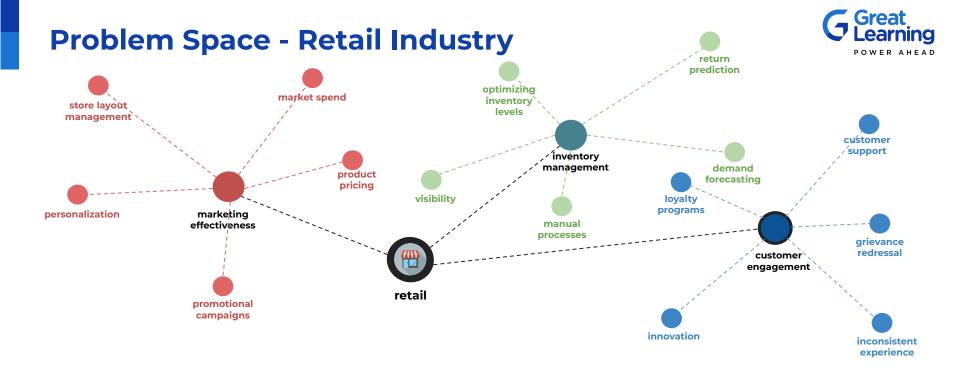




**Problem Space - Retail Industry** 



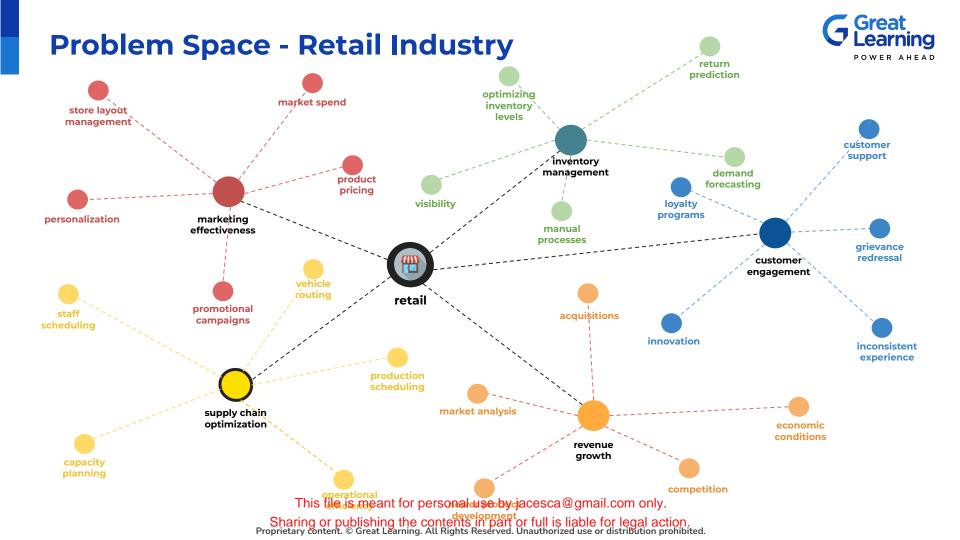






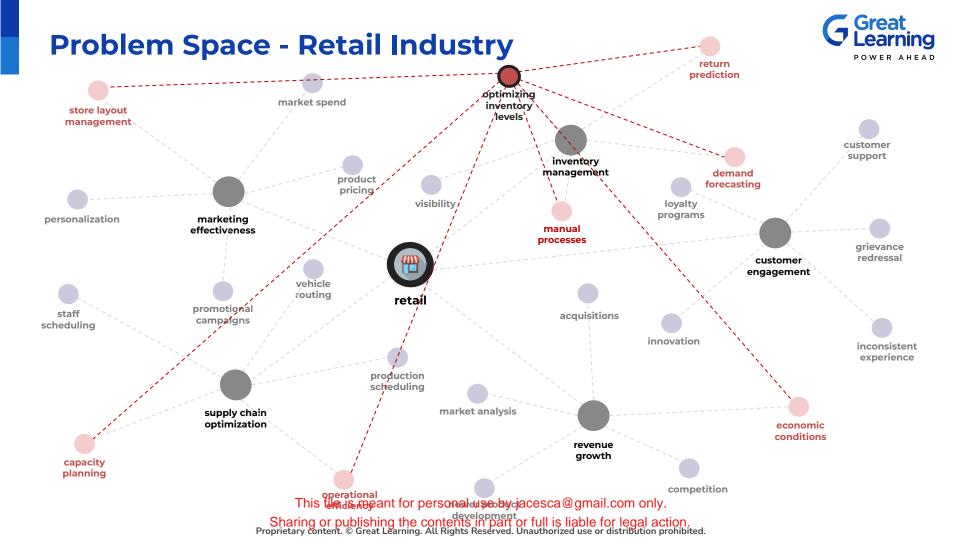
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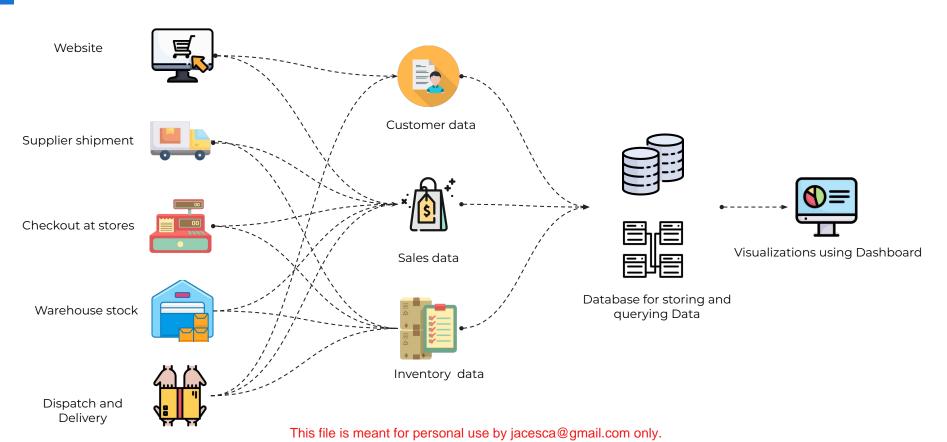


## **Optimizing Inventory Levels**



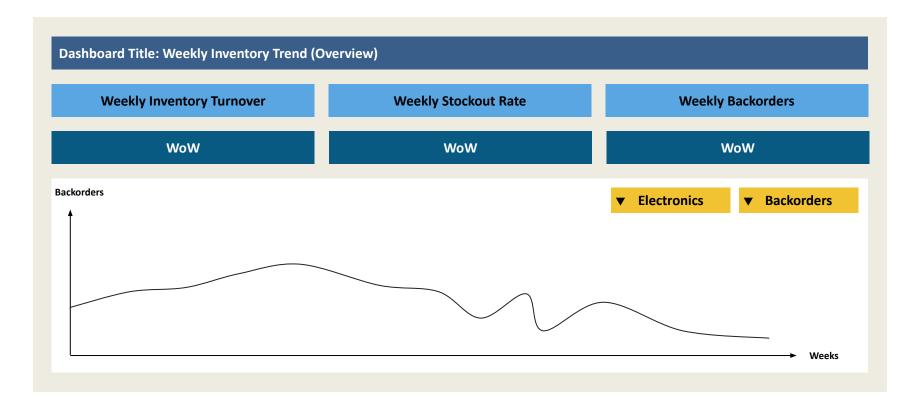
#### **Current State Desired State Gap / Key Questions** What are the factors that affect Identified factors that affect the Retail stores often end up with the sales of a product? sales of products overstocks/understocks products What are the purchase patterns Efficient management of Loss of revenue due to aged goods in a particular store? inventory leading to minimal loss/wastage Customer dissatisfaction due to What is the average movement time of an item? unavailability goods at the right Improved customer satisfaction time and increase in sales



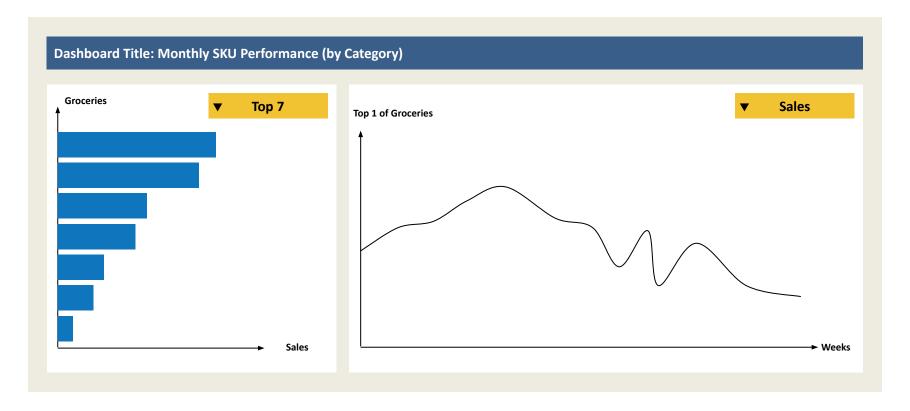


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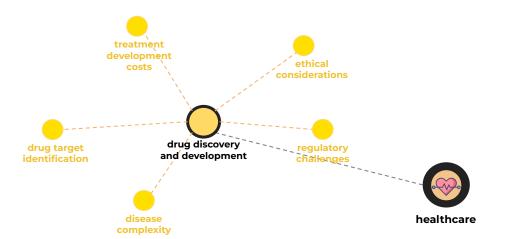


## **Questions?**

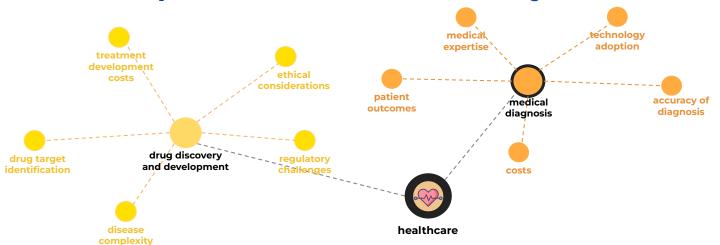




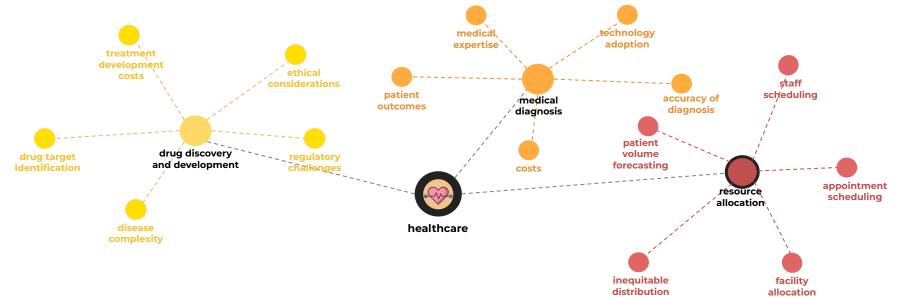




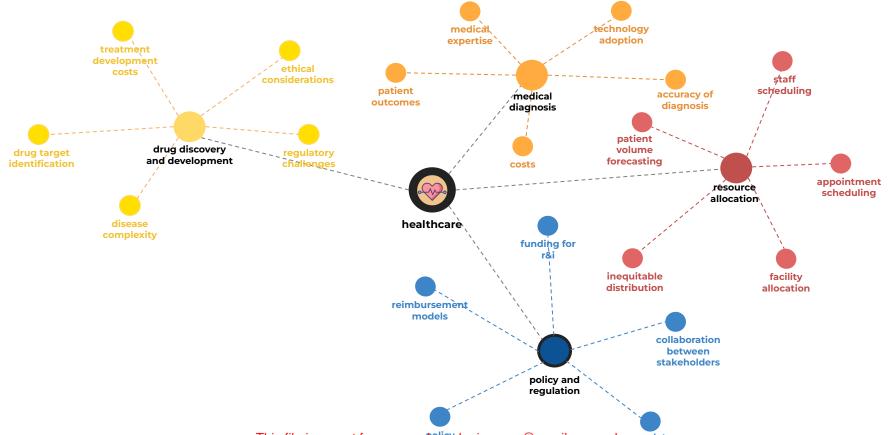








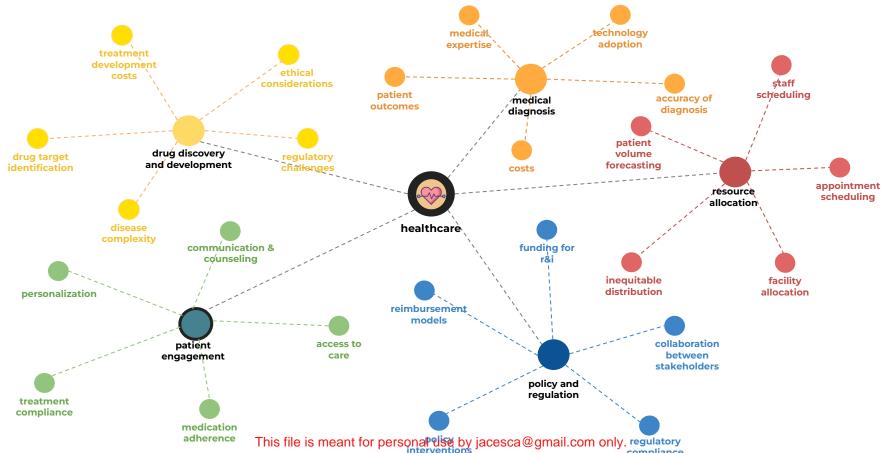




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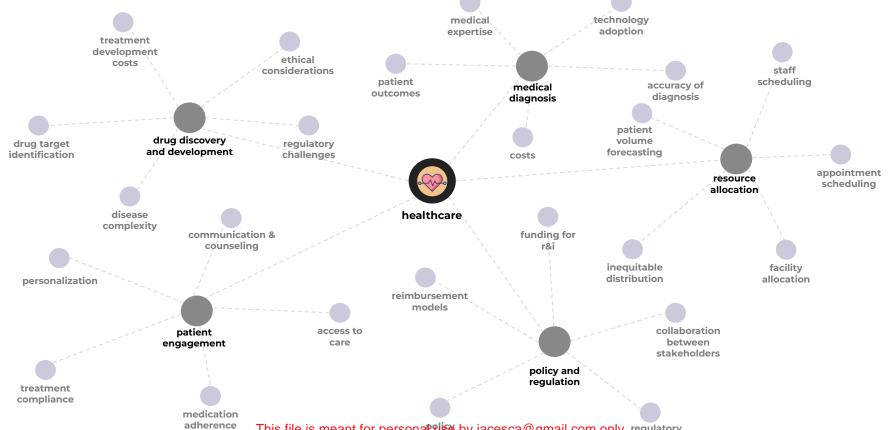




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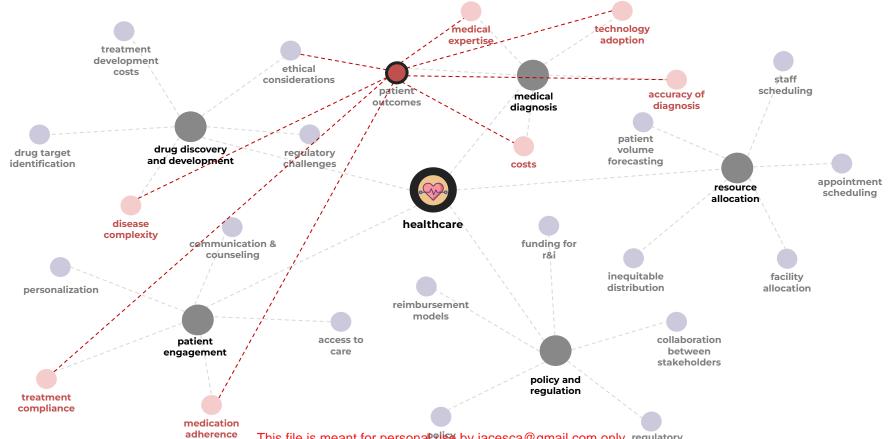


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## **Predicting the onset of Diabetes**



#### Current State Desired State

Absence of screening mechanism to identify patients with high risk of developing

Type 2 Diabetes

Decreased quality of life due to development of more complications

#### Gap / Key Questions

What are the factors that influence development of Type 2 Diabetes?

What are the patterns among healthy vs affected patients?

Identified patterns in patients that can signal likelihood/ early onset of Type 2 Diabetes

Personalized and immediate intervention to prevent further development of the disease

Improved patient outcomes and reduced healthcare costs

## **Predicting the onset of Diabetes - Approach**





The model groups similar data points together by learning the patterns within the

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## **Questions?**

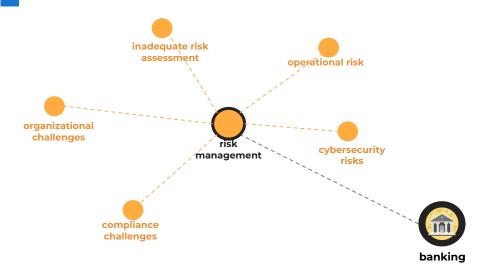
## **Problem Space - Banking Industry**





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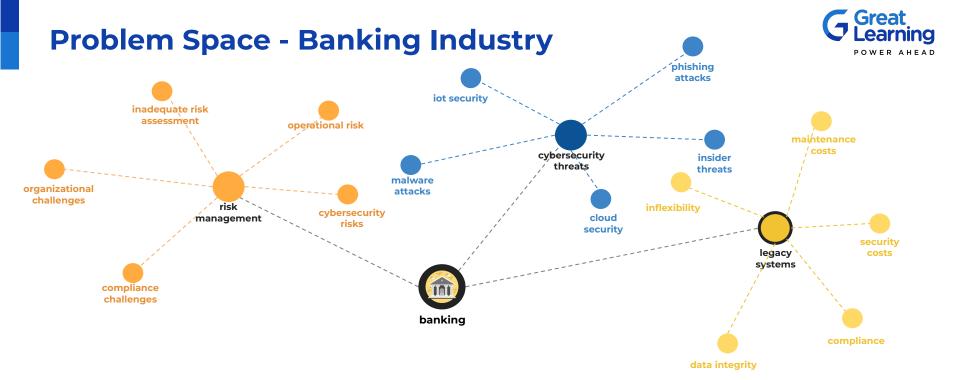


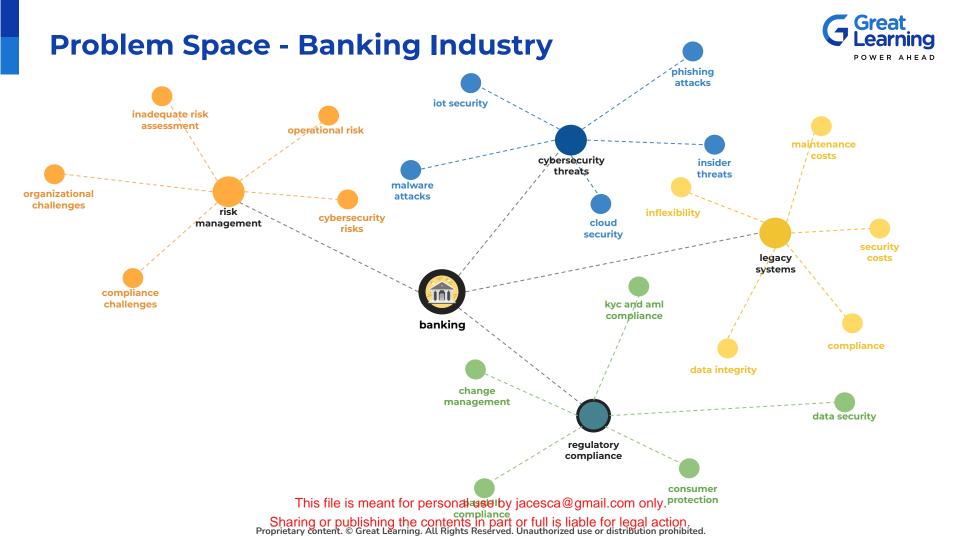


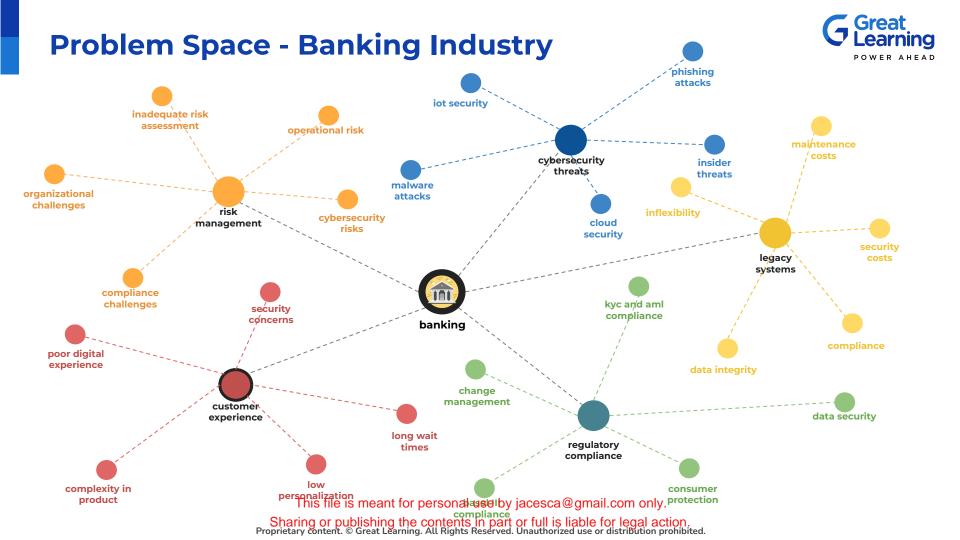


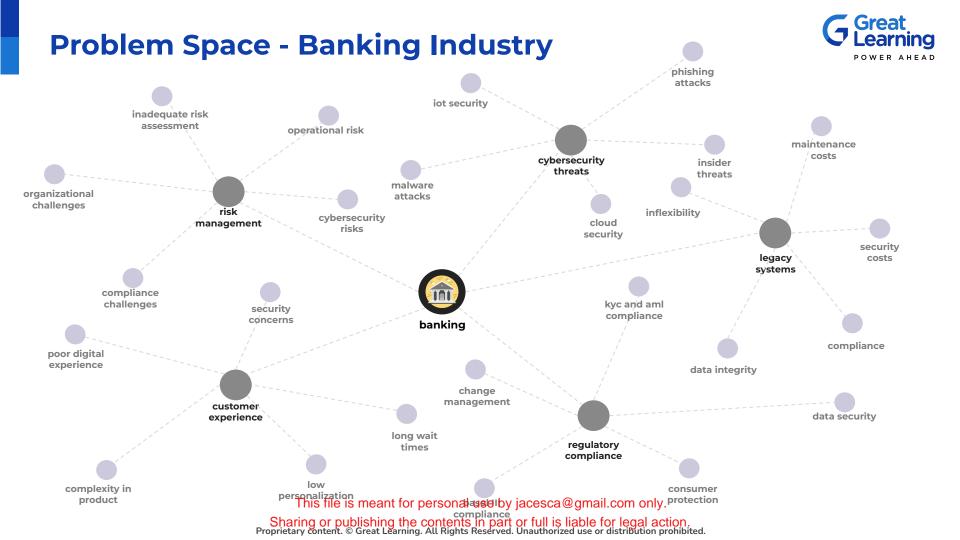


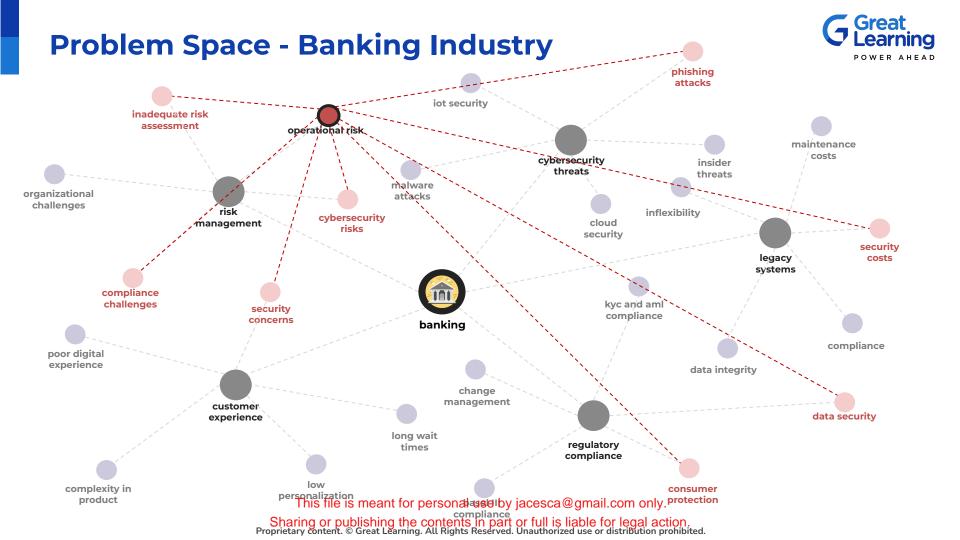






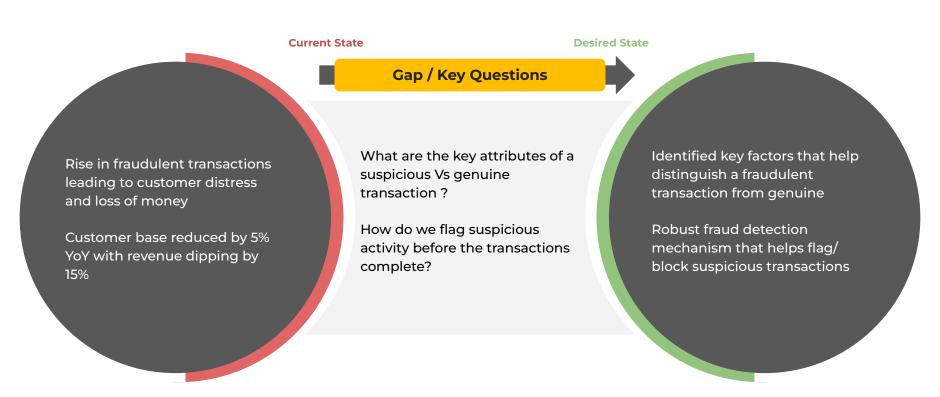






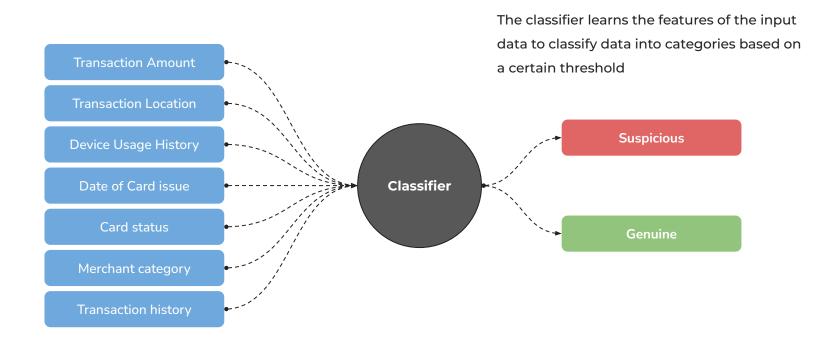
#### **Credit Card Fraud detection**





### **Credit Card Fraud detection - Approach**

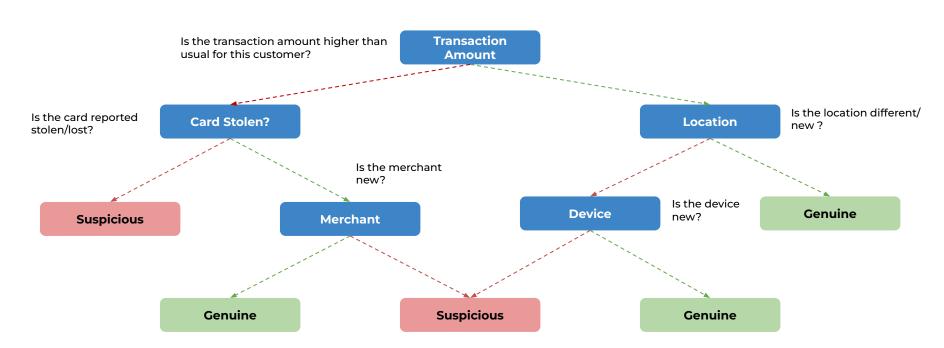




## **Credit Card Fraud detection - Approach**



#### A simple decision tree



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## **Questions?**



**Happy Learning!** 

