

## Scenario Based Example to Identify Problem Statement 2

### Problem Statement 2:

The XYZ is an E-commerce company. Daily they receive more than 1000 of mails regarding shipment, product delivery, Quality of product and etc. Issue is every customer mail to one mail id but company have different domains to solve these issues for the customer. As an AI Engineer, you are asked to do redirect the mail from customers complaints mail id to respective department mail id, so that respective department will resolve the issues.

Identify the 3 Stages of Problem Domain.

- A) Stage1 - Machine Learning
  - Stage2 - Supervised
  - Stage 3 - Regression
- B) Stage1 - Machine Learning
  - Stage2 - Supervised
  - Stage3 - Classification
- C) Stage1 - NLP
  - Stage2 - Supervised
  - Stage3 - Classification
- D) Stage1 - NLP
  - Stage2 – Unsupervised

### Solution:

1. Problem Statement – Department (shipment, quality, product)
2. Domain Selection
  - a. Dataset is a full text, that talks about the departments shipment, delivery, quality and product, so choose Natural Language Processing (NLP)
  - b. Email is classified(forwarded) to the respective departments
  - b. Solution – Stage I – Natural Language Processing (NLP)
3. Requirement – Department Prediction
  - a. Data with input as text and labeled output
4. Regression or Classification
  - a. The system falls under supervised learning, with the categorical data, hence it belongs to classification – Stage II
5. Answer
  - a. Option C – NLP - Supervised – Classification
  - b. Natural Language Processing (NLP) – Supervised Learning – Classification

### Dataset:

Sl. No	Input (Text)	Output (Label)
1.		Shipment
2.		Delivery
3.		Quality
4.		Shipment

**Requirement:**

Department Prediction

**Call to Action:**

Email forwarded to respective departments (shipment, delivery, quality)