# NLP MINI PROJECT
# AUTOMATIC ASSIGNMENT OF INCIDENT TICKETS

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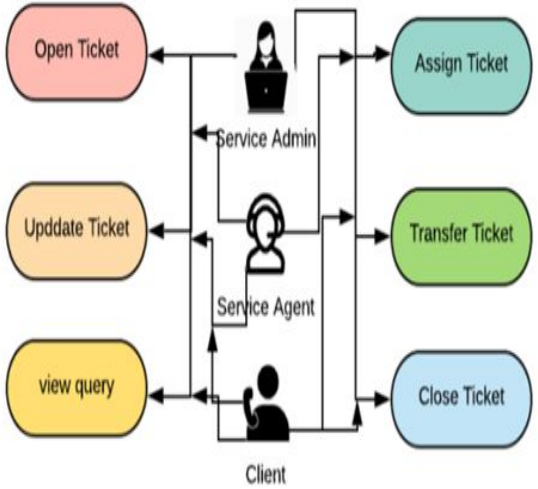
# INTRODUCTION

- ★ Incidents are **issues** or **unplanned interrupts** to IT services.
- ★ Incidents are processed using a ticketing system
- ★ Traditional methods have resulted in **human error** (assigning tickets to wrong time) which led to high waiting time, customer dissatisfaction.
- ★ **Ticket assigning system** will lead to better resource allocation and cost savings.
- ★ Incoming issues are analyzed and assessed by organizations support team to fulfil the request.



# OBJECTIVES

- ★ To automate the process of assigning tickets to reduce human error and faster the process.

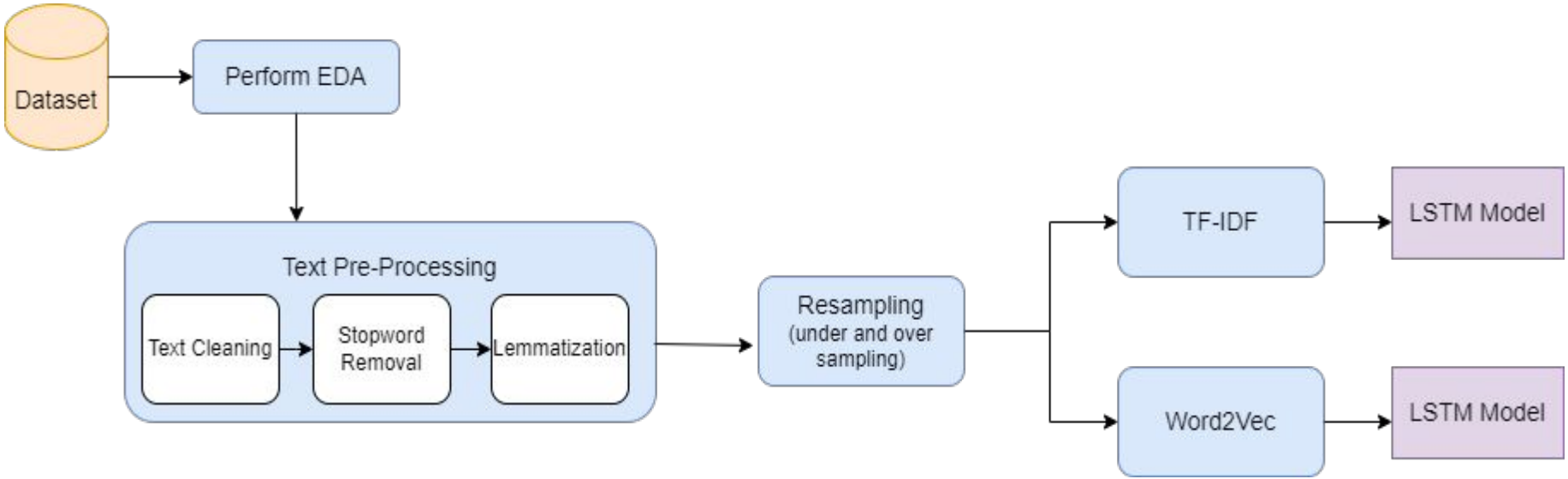
Objectives are as follows:

I. Understand the data
   A. Perform EDA.
   B. Plot graphs and visualize.
II. Pre-process the data.
III. Try Different embeddings:
   A. Tf-Idf.
   B. Word2Vec.
IV. Try for different models and different epochs.

# DATASET

- ★ The dataset consists of 4 columns:
  - Short Description
  - Description
  - Caller id
  - Assignment group
- ★ Each group addresses different set of problems arised by the customers.

# Methodology diagram



# PERFORMANCE

| MODEL | LOSS | ACCURACY |
|---|---|---|
| LSTM with Tf-Idf | Train - 1.2311<br>Val - 3.6114 | Train - 0.6303<br>Val - 0.3397 |
| LSTM with Word2Vec (without sampling) | Train - 1.0529<br>Val - 1.5651 | Train - 0.6940<br>Val - 0.6188 |
| | Train - 0.8825<br>Val - 1.6644 | Train - 0.7397<br>Val - 0.6082 |
| LSTM with Word2Vec (with sampling) | Train - 0.3832<br>Val - 0.5105 | Train - 0.8729<br>Val - 0.8479 |
| | Train - 0.2327<br>Val - 0.4576 | Train - 0.9120<br>Val - 0.8842 |