# A PROJECT REPORT

# ON

# “REAL TIME TRANSLATION APP”

## Introduction

**Machine Learning Model for Translation**

* The model will translate French words into Tamil, but only if the French word has exactly five letters.
* If the word has more or fewer than five letters, no translation will be performed.

**Background:**

* **Machine Learning:** A branch of AI where models learn from data to make predictions or perform tasks without being explicitly programmed. In this case, the task is to perform language translation.
* **Natural Language Processing (NLP):** A subfield of AI that helps machines understand, interpret, and respond to human language. This project involves NLP to handle French words and translate them into Tamil.
* **Rationale for French-to-Tamil Translation:** Language translation is a vital application of NLP, helping bridge communication gaps. By focusing on five-letter words, the project simplifies the task and allows for targeted learning, showcasing the capability of NLP in practical applications.

## 

## Objective

To enhance coding abilities, gain hands-on experience with machine learning, understand NLP for language processing, and build a user interface for real-world application.

The objective of language translator are:

* + 1. Develop a system which able to do conversion between the languages.
    2. Provide an easy and simple for translation.
    3. Endow good experience to the user.
    4. Translate almost each language.

Scope

Translation is necessary for the spreading of new information, knowledge, and ideas across the world. • It is absolutely necessary to achieve effective communication between different cultures. It is the only medium by which certain people can know different works that will expand their knowledge of the world. • Not everyone speak English ,so Language Translator is helpful for us to translate our native language.

**Activities and Tasks:**

Collected five-letter French words data.

Trained a model to translate them into Tamil.

Developed a GUI for input and translation output.

**Feedback and Evidence**

The project successfully demonstrated effective translation from French to Tamil using a Transformer model. The Streamlit application functioned smoothly, showcasing the model's capabilities. This work enhanced my knowledge of Transformer models and application integration, leading to a successful completion of the project.

**Challenges and Solutions:**

Challenge: Filtering out non-five-letter words efficiently.

Solution: Implemented a word-length check before translation.

Challenge: Designing a user-friendly GUI.

Solution: Simplified the interface for easy input and output display.

**Outcomes and Impact**

The project achieved its goal of creating a reliable French-to-Tamil translator, providing valuable experience in Transformer models and application development. The successful implementation underscores the potential of advanced models in real-time translation.

**Conclusion**

This internship offered valuable experience in developing an end-to-end machine learning solution, from model building to creating a user interface, and has greatly contributed to my technical and professional growth.

.