Gen-AI Semester-6

LAB-1 **Date:**23/01/2026

Name: A Shri Karthik	**SRN:** PES2UG23CS003	**Section:** A

Documenting the Gen-AI Handson

Hugging face is like the GitHub for AI, where we can find many open-source models, datasets and projects that demonstrate how they work.

We can use the pre-trained models and datasets as a good starting point instead of creating them from scratch.

The transformers library acts as the bridge between hugging face and our code, it gives us APIs to easily download and use these models in our personal projects, it supports many frameworks too.

The pipeline function is a very powerful tool in the library, it turns the steps of preprocessing, model inference and postprocessing into a single callable function.

In the hands-on, we compared two generative models, distilgpt2, the ‘dumb’ model, which is a smaller, distilled, faster version of gpt2 which requires less memory and runs more efficiently and with less latency, and also the ‘smart’ model the standard gpt2.

We set a seed initially to make this whole process reproducible, which is crucial in experiments, it helps by giving the same random values for a given seed value.

We compare the text generated by the two models for a given prompt and notice the ‘smart’ model gives a more coherent and structurally correct output as compared to the ‘dumb’ model that isn’t too bad but repeats some phrases and loses overall context with time.

Tokenization is an essential step before passing input into the model, since the model can’t understand words, and breaking down the words into the smallest meaningful pieces and encoding them into numbers that are unique IDs helps the model efficiently process them.

The temperature in a model basically controls how likely the model is to pick the next word that isn’t one of the top words to be chosen, basically how far from the ideal words is the model going to go to pick the next word, it helps the model deviate and be more liberal and creative with its outputs.

POS tagging is also an important preprocessing step, where we assign a POS label to words to understand grammar, for example, whether the word ‘will’ is a noun that is a name, or a modal verb, knowing this can dramatically change how the word is used and handled.

Name-Entity recognition is another key step in preprocessing where we extract and label words as names, organizations and places, for example, the word ‘apple’ could mean the fruit or the company.