**AI Assisted coding**

**Lab Test - 1**

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**Q1. Zero-shot Classification [5M]**  
• Scenario: Classify tweets into “Positive,” “Negative,” or “Neutral.”  
• Task 1: Write a zero-shot prompt to classify sentiment without any examples.  
• Task 2: Create a scenario where an AI assistant needs to help a student solve math problems.

**Task - 1:**

**Prompt:**

“Classify the following tweet as “Positive,” “Negative,” or “Neutral” based on its sentiment using a python Code.”  
Tweet: "I just got a new job and I’m so excited!"”

**Code Generated:**

*def classify\_tweet\_sentiment(tweet):*

*positive\_words = ["excited", "happy", "love", "great", "good", "cool", "amazing", "wonderful", "joy", "awesome", "fantastic", "best", "success"]*

*negative\_words = ["sad", "angry", "bad", "hate", "terrible", "upset", "disappointed", "worst", "fail", "awful", "horrible", "problem"]*

*tweet\_lower = tweet.lower()*

*if any(word in tweet\_lower for word in positive\_words):*

*return "Positive"*

*elif any(word in tweet\_lower for word in negative\_words):*

*return "Negative"*

*else:*

*return "Neutral"*

*tweet = input("Enter a tweet to classify its sentiment: ")*

*sentiment = classify\_tweet\_sentiment(tweet)*

*print(f'Tweet: "{tweet}"\nSentiment: {sentiment}')*

**Code Image:**

*A computer screen shot of text

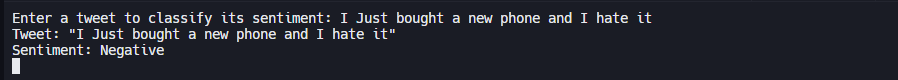
AI-generated content may be incorrect.*

**Output:**

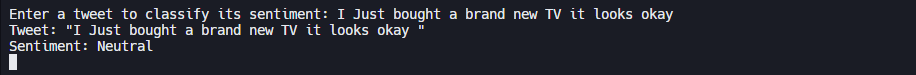
1. **Positive tweet**



1. **Negative tweet**



1. **Neutral tweet**

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**Observation:**

1. The program attempts by checking for keywords related to positive and negative emotions.
2. For the input tweet: "I just got a new job and I’m so excited!"
3. the algorithm finds the word “excited” in the positive word list.
4. Since positive words are detected and no negative words appear, the classifier correctly predicts: Positive

**Task – 2:**

**Prompt Without Context:**

“Help the student solve the following math problem:  
"What is 7 multiplied by 8?" using c programming language”

**Code Generated:**

*#include <stdio.h>*

*int main() {*

*int a, b, result;*

*printf("Enter the first number: ");*

*scanf("%d", &a);*

*printf("Enter the second number: ");*

*scanf("%d", &b);*

*result = a \* b;*

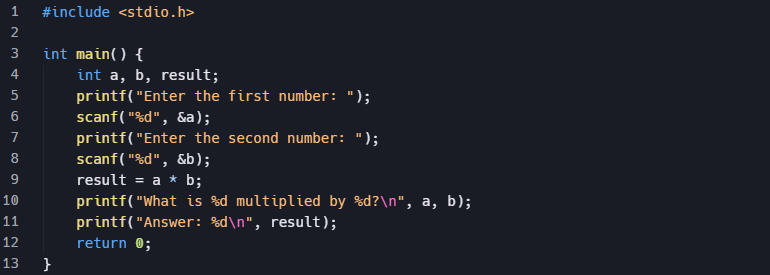
*printf("What is %d multiplied by %d?\n", a, b);*

*printf("Answer: %d\n", result);*

*return 0;*

*}*

**Code Image:**



**Output:**

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**Prompt With detailed Context:**

“You are an AI assistant helping a 6th-grade student with math homework. The topic is multiplication, and the difficulty level is basic.”

**Code Generated:**

*#include <stdio.h>*

*int main() {*

*int a = 7, b = 8, result;*

*printf("You are a 6th-grade student learning multiplication.\n");*

*printf("Let's solve: What is %d multiplied by %d?\n\n", a, b);*

*printf("Step 1: Write the numbers: %d and %d.\n", a, b);*

*printf("Step 2: Multiply them together.\n");*

*printf("%d x %d = ", a, b);*

*result = a \* b;*

*printf("%d\n", result);*

*printf("So, %d multiplied by %d equals %d.\n", a, b, result);*

*printf("Multiplication means adding %d eight times: ", a);*

*for(int i = 1; i <= b; i++) {*

*printf("%d", a);*

*if(i < b) printf(" + ");*

*}*

*printf(" = %d\n", result);*

*printf("Great job!\n");*

*return 0;*

*}*

**Code Image:**

A computer code on a black background

AI-generated content may be incorrect.

**Output:**

***A group of lights in a row

AI-generated content may be incorrect.***

**Observation:**

The code solves 7 x 8 step by step and gives the correct final answer 56.

**Task – 2:**

**Q2. One-shot vs Few-shot [5M]**

**Task 1:** Write:  
o A one-shot prompt (give 1 example of classification).  
o A few-shot prompt (give 3–4 examples).

**Task 2:** Compare outputs on the same set of tweets and explain the difference.

**One-shot Prompt:**

“Classify the following tweet as “Positive,” “Negative,” or “Neutral.”  
 Example:  
 Tweet: "I love sunny days!"  
 Sentiment: Positive

Now classify this tweet:  
 Tweet: "I just got a new job and I’m so excited!"”

**Code Generated:**

*def classify\_tweet(tweet):*

*# One-shot example*

*example\_tweet = "I love sunny days!"*

*example\_sentiment = "Positive"*

*# Basic keyword-based classification*

*positive\_words = ["excited", "happy", "love", "great", "good", "amazing", "wonderful", "joy", "awesome", "fantastic", "best", "success"]*

*negative\_words = ["sad", "angry", "bad", "hate", "terrible", "upset", "disappointed", "worst", "fail", "awful", "horrible", "problem"]*

*tweet\_lower = tweet.lower()*

*if any(word in tweet\_lower for word in positive\_words):*

*return "Positive"*

*elif any(word in tweet\_lower for word in negative\_words):*

*return "Negative"*

*else:*

*return "Neutral"*

*# Example from prompt*

*print('Tweet: "I love sunny days!"')*

*print('Sentiment:', "Positive")*

*# Now classify the new tweet*

*tweet = "I just got a new job and I’m so excited!"*

*print(f'Tweet: "{tweet}"')*

*print('Sentiment:', classify\_tweet(tweet))*

**Code Image:**

**A screenshot of a computer program

AI-generated content may be incorrect.**

**Output:**

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**Few-shot prompt:**

“Classify the following tweets as “Positive,” “Negative,” or “Neutral.”  
 Examples:  
 Tweet: "I love sunny days!"  
 Sentiment: Positive

Tweet: "I am feeling very sad today."  
 Sentiment: Negative

Tweet: "It might rain later."  
 Sentiment: Neutral

Tweet: "The food was terrible."  
 Sentiment: Negative

Now classify this tweet:  
 Tweet: "I just got a new job and I’m so excited!"  
 give me the code”

**Code Generated:**

*# Few-shot examples*

*examples = [*

*("I love sunny days!", "Positive"),*

*("I am feeling very sad today.", "Negative"),*

*("It might rain later.", "Neutral"),*

*("The food was terrible.", "Negative")*

*]*

*for ex\_tweet, ex\_sentiment in examples:*

*print(f'Tweet: "{ex\_tweet}"')*

*print(f'Sentiment: {ex\_sentiment}\n')*

*# Classification function*

*positive\_words = ["excited", "happy", "love", "great", "good", "amazing", "wonderful", "joy", "awesome", "fantastic", "best", "success"]*

*negative\_words = ["sad", "angry", "bad", "hate", "terrible", "upset", "disappointed", "worst", "fail", "awful", "horrible", "problem", "food was terrible"]*

*def classify\_tweet(tweet):*

*tweet\_lower = tweet.lower()*

*if any(word in tweet\_lower for word in positive\_words):*

*return "Positive"*

*elif any(word in tweet\_lower for word in negative\_words):*

*return "Negative"*

*else:*

*return "Neutral"*

*# Now classify the new tweet*

*new\_tweet = "I just got a new job and I’m so excited!"*

*print(f'Tweet: "{new\_tweet}"')*

*print('Sentiment:', classify\_tweet(new\_tweet))*

**Code Image:**

A screenshot of a computer

AI-generated content may be incorrect.

**Output:**

A screen shot of a computer

AI-generated content may be incorrect.

**Observation:**

One-shot: Limited context, less accurate for varied inputs.  
Few-shot: More examples, better accuracy and generalization.