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| **SCHOOL OF COMPUTER SCIENCE AND ARTIFICIAL INTELLIGENCE** | | | | | **DEPARTMENT OF COMPUTER SCIENCE ENGINEERING** | | | | |
| **Program Name:** B. Tech | | | | **Assignment Type: Lab** | | | **Academic Year:**2025-2026 | | |
| **Course Coordinator Name** | | | | Dr. Rishabh Mittal | | | | | |
| **Instructor(s) Name** | | | | |  | | --- | | Mr. S Naresh Kumar | | Ms. B. Swathi | | Dr. Sasanko Shekhar Gantayat | | Mr. Md Sallauddin | | Dr. Mathivanan | | Mr. Y Srikanth | | Ms. N Shilpa | | Dr. Rishabh Mittal (Coordinator) | | Dr. R. Prashant Kumar | | Mr. Ankushavali MD | | Mr. B Viswanath | | Ms. Sujitha Reddy | | Ms. A. Anitha | | Ms. M.Madhuri | | Ms. Katherashala Swetha | | Ms. Velpula sumalatha | | Mr. Bingi Raju | | | | | | |
| **CourseCode** | | | 23CS002PC304 | **Course Title** | | AI Assisted Coding | | | |
| **Year/Sem** | | | III/II | **Regulation** | | R23 | | | |
| **Date and Day**  **of Assignment** | | | **Week2 –** | **Time(s)** | | 23CSBTB01 To 23CSBTB52 | | | |
| **Duration** | | | 2 Hours | **Applicable to**  **Batches** | | All batches | | | |
| **Assignment Number: 4.5**(Present assignment number)/**24**(Total number of assignments) | | | | | | | | | |
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|  | **Q.No.** | **Question** | | | | | | ***Expected Time***  ***to complete*** |  |
|  | 1 | **Lab 4: Advanced Prompt Engineering: Zero-shot, one-shot, and few-shot techniques**  Objective: To explore and compare Zero-shot, One-shot, and Few-shot prompting techniques for classifying emails into predefined categories using a large language model (LLM).   1. Suppose that you work for a company that receives hundreds of customer emails daily. Management wants to automatically classify emails into categories like "Billing", "Technical Support", "Feedback", and "Others" before assigning them to appropriate departments. Instead of training a new model, your task is to use prompt engineering techniques with an existing LLM to handle the classification.   Tasks to be completed are as below   1. Prepare Sample Data:  * Create or collect 10 short email samples, each belonging to one of the 4 categories.  1. Zero-shot Prompting:  * Design a prompt that asks the LLM to classify a single email without providing any examples. * Example prompt: *“Classify the following email into one of the following categories: Billing, Technical Support, Feedback, Others. Email: ‘I have not received my invoice for last month.’”*  1. One-shot Prompting:  * Add one labeled example before asking the model to classify a new email.  1. Few-shot Prompting:  * Use 3–5 labeled examples in your prompt before asking the model to classify a new email.  1. Evaluation:  * Run all three techniques on the same set of 5 test emails. * Compare and document the accuracy and clarity of responses.   **2. Travel Query Classification**  **Scenario:** A travel assistant must classify queries into **Flight Booking, Hotel Booking, Cancellation, or General Travel Info**.  **Tasks:**   1. Prepare labeled travel queries. 2. Apply Zero-shot prompting. 3. Apply One-shot prompting. 4. Apply Few-shot prompting. 5. Compare response consistency.   **3. Programming Question Type Identification**  **Scenario:** A coding help chatbot must classify queries into Syntax Error, Logic Error, Optimization, or Conceptual Question.  Tasks:   1. Prepare coding-related user queries. 2. Perform Zero-shot classification. 3. Perform One-shot classification. 4. Perform Few-shot classification. 5. Analyze improvements in technical accuracy.   **4. Social Media Post Categorization**  **Scenario:** A social media analytics tool must classify posts into **Promotion, Complaint, Appreciation, or Inquiry**.  **Tasks:**   1. Prepare sample social media posts. 2. Use Zero-shot prompting. 3. Use One-shot prompting. 4. Use Few-shot prompting. 5. Analyze informal language handling. | | | | | | Week2 - |  |