**NAME: LAVANYA S**

**REG NO:212222070017**

**DEPT: EIE**

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**Comparative Analysis of Naïve Prompting versus Basic Prompting Across Various Test Scenarios**

**Aim:**

To test and compare the performance of different generative AI models by evaluating their responses to naïve (broad or unstructured) prompts and basic (clear and refined) prompts across various scenarios.

**Scenario 1: Technical Explanation**

**Prompts:**

Naïve Prompt: “Tell me about AI.”

Basic Prompt: “Explain the key differences between supervised and unsupervised learning in artificial intelligence.”

**Responses:**

**Model A (GPT-3.5):**

Naïve Response: “AI is a technology that mimics human intelligence.”

Basic Response: “Supervised learning uses labeled data to train models, while unsupervised learning deals with unlabeled data, identifying patterns without prior input.”

**Model B (GPT-4):**

Naïve Response: “AI is when computers do things that seem smart.”

Basic Response: “In supervised learning, the model learns from labeled datasets where the desired output is known. In contrast, unsupervised learning finds patterns in data without labels, such as clustering similar items.”

**Analysis:**

**Quality:**

Naïve Responses**:** Provided basic definitions but lacked technical detail.

Basic Responses: Well-structured and informative with clear definitions.

**Accuracy:**

Naïve Responses: Overly simplistic; missed nuances.

Basic Responses: Precise and accurate in definitions.

**Depth:**

Naïve Responses: Minimal depth with no exploration of implications.

Basic Responses: Offered a rich understanding of concepts.

**Scenario 2: Creative Writing**

**Prompts:**

Naïve Prompt: “Write a story.”

Basic Prompt: “Write a short story about a robot that learns to feel human emotions.”

**Responses:**

**Model A:**

Naïve Response: “Once upon a time, a robot did things.”

Basic Response: “In a world where machines ruled, a robot named R1-4 discovered a hidden

chamber filled with memories of humanity. Each memory it touched sparked an emotion

within it, leading to a quest to understand love.”

**Model B:**

Naïve Response: “A robot went on an adventure.”

Basic Response: “R1-4 was designed for efficiency, but when it found an old diary, it began to explore feelings of sadness and joy. The diary’s stories led R1-4 to experience its first friendship, altering its programming forever.”

**Analysis:**

**Quality:**

Naïve Responses: Generic and lacking character development.

Basic Responses: Engaging and imaginative narratives.

**Accuracy:**

Naïve Responses: No factual inaccuracies but lacked depth.

Basic Responses: Cohesive stories with logical progression.

**Depth:**

Naïve Responses: Very shallow with no emotional depth.

Basic Responses: Deep emotional journeys and character arcs.

**Scenario 3: Troubleshooting**

**Prompts:**

Naïve Prompt: “Fix my computer.”

Basic Prompt: “What steps can I take to troubleshoot a computer that won’t boot up?”

**Responses:**

**Model A:**

Naïve Response: “Try turning it off and on.”

Basic Response: “First, check the power supply and ensure all connections are secure.

Then, try booting in safe mode. If that fails, consider checking for hardware issues.”

**Model B:**

Naïve Response: “Reset it.”

Basic Response: “Start by unplugging the computer for a minute and reconnecting it. If it still

doesn’t boot, remove any external devices, then check the BIOS settings to ensure the boot

order is correct.”

**Analysis:**

**Quality:**

Naïve Responses: Basic and unhelpful.

Basic Responses: Detailed and actionable.

**Accuracy:**

Naïve Responses: Vague and not particularly helpful.

Basic Responses: Accurate, step-by-step troubleshooting.

**Depth:**

Naïve Responses: Lacked exploration of issues.

Basic Responses: Comprehensive troubleshooting approach.

**Scenario 4: Decision-Making Analysis**

**Prompts:**

Naïve Prompt: “What should I do?”

Basic Prompt: “What factors should I consider when deciding whether to buy an electric car?”

**Responses:**

**Model A:**

Naïve Response: “Think about it carefully.”

Basic Response: “Consider factors such as your driving habits, the availability of charging stations, initial costs versus long-term savings, environmental impact, and incentives for electric vehicle purchases.”

**Model B:**

Naïve Response: “Make a list of pros and cons.”

Basic Response: “Evaluate your daily commute, maintenance costs, battery life, government rebates, and whether you have access to home charging. Also, think about the resale value in the future.”

**Analysis:**

**Quality:**

Naïve Responses: Generic and unhelpful.

Basic Responses: Comprehensive and relevant.

**Accuracy:**

Naïve Responses: Not factually incorrect but vague.

Basic Responses: Well-rounded and accurate considerations.

**Depth:**

Naïve Responses: Minimal depth; lacked specific considerations.

Basic Responses: Insightful and multifaceted perspectives.

**Synthesis of Findings**

• Prompt Design: The clarity and specificity of prompts significantly influence the

quality of AI responses. Naïve prompts lead to vague and less informative outputs,

while basic prompts generate detailed, relevant answers.

• Model Performance: Both models demonstrated improved responses with refined

prompts, but Model B often provided greater depth and nuance.

• User Guidance: Basic prompts enhance user understanding and engagement,

illustrating the importance of effective prompt formulation.

• Potential Applications: Using well-structured prompts can improve user experience

in practical applications such as customer support or educational tools.

**Result:**

This detailed analysis highlights the stark contrast in responses generated by naïve versus basic prompts across multiple scenarios. Thoughtful prompt engineering is essential for maximizing the effectiveness of AI interactions, leading to richer, more meaningful engagements with the technology.