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May 5th, 2025

Text Completion Project Report

For my text completion project, I chose to use hugging face as it has free api calls, and has a wide flexibility of models one can use. I decided to run inference from DeepSeek-V3. The code is pretty simple when just doing an API call. The responses are very coherent and relevant to the prompt given. Deepseek is a very solid model, and can easily perform different tasks here from explaining cs concepts simply, writing a short story, explaining complex mathematical topics, and even giving flirting advice. It does seem to struggle with responding concisely and can over explain or respond. Does well with logical reasoning and creativity as well. I asked it about a very niche topic - the lore of magic the gathering's plane of Lorwyn. It was about 90% accurate! There were a couple of inconsistencies, but overall even with such a niche topic it was correct and application. Here are some recorded prompts:

Prompt	Response
Continue this story. Jonathon was a goblin. He was hairy and scary.	<p>Jonathon the goblin was hairy and scary, with jagged yellow teeth and claws that clicked when he walked. But deep down, Jonathon had a secret—he didn't *want* to be scary.</p> <p>One evening, as he lurked near the edge of the Blackroot Forest, he overheard a group of children telling stories around a campfire.</p> <p>"Goblins are the worst!" one child said, shivering. "They steal your socks and whisper curses in the dark!"</p> <p>Jonathon's heart sank. He *did* like socks—they were soft and came in so many colors—but he had never cursed anyone!</p> <p>Determined to change his reputation, Jonathon crept into the village that night. But instead of causing mischief, he left little gifts—polished stones, wildflowers, and (yes) even a few pairs of his own mismatched socks—on doorsteps.</p> <p>The next morning, the villagers were baffled. "Who left these?" they murmured.</p> <p>A small girl named Lila spotted Jonathon hiding behind a barrel. Instead of screaming, she tilted her head. "You're not so scary," she said.</p> <p>Jonathon gulped. "I—I'm not?"</p> <p>Lila grinned. "Nope. You're just... fuzzy."</p>

	<p>And from that day on, Jonathon the goblin became known as the Fuzzy Gift-Giver of Blackroot Forest. And though his claws still clicked when he walked, now they clicked with pride.</p> <p>(Would you like the story to continue, or should Jonathon face a new challenge?)</p>
<p>explain recursion like i'm 5</p>	<p>Sure! Imagine you have a big box of toys, and inside that box, there's a smaller box with the same kind of toys. And inside <i>*that*</i> box, there's an even smaller box with the same toys—and it keeps going like that!</p> <p>**Recursion is like opening one box, finding another box inside, and repeating the same thing until you finally find a toy (and stop).**</p> <p>Here's how it works in simple steps:</p> <ol style="list-style-type: none"> 1. **Open a box** → If you find a smaller box inside, go back to step 1 (open <i>*that*</i> box). 2. **If you find a toy instead of a box** → Yay! You're done. <p>It's like a loop where the same action keeps happening until you reach the end.</p> <p>**Example with numbers:** Want to count down from 5? - Say "5", then count down from <i>*4*</i> - Say "4", then count down from <i>*3*</i> - ... - Say "1", then stop!</p> <p>That's recursion! You do the same thing over and over until you hit the "stop" point.</p> <p><i>*(Bonus for grown-ups: The "stop" is called the **base case**, and the repeating part is the **recursive call**.)*</i> 😊</p>
<p>Tell me a bee fact.</p>	<p>**Honeybees communicate through a "waggle dance."** When a forager bee finds a good source of nectar or pollen, it returns to the hive and performs a figure-eight dance that indicates the direction and distance of the food relative to the sun. The angle of the waggle corresponds to the direction, while the duration of the waggle phase tells other bees how far to fly.</p> <p>This remarkable behavior was decoded by Austrian scientist Karl von Frisch, who won a Nobel Prize for his work on bee communication!</p> <p>Would you like another bee fact? 🐝</p>

<p>Explain KKT conditions in three sentences</p>	<p>The Karush-Kuhn-Tucker (KKT) conditions are first-order necessary conditions for optimality in constrained optimization problems. They generalize the method of Lagrange multipliers to handle inequality constraints. Here's a concise explanation in three key points:</p> <ol style="list-style-type: none"> Primal Feasibility: The solution must satisfy all the original constraints of the problem (both equality and inequality constraints): $\begin{aligned} & \left[\right. \\ & g_i(x^*) \leq 0 \quad \text{(inequality constraints)}, \quad h_j(x^*) = 0 \quad \text{(equality constraints)}. \\ & \left. \right] \end{aligned}$ Dual Feasibility: The Lagrange multipliers (dual variables) for the inequality constraints must be non-negative: $\left[\right. \lambda_i \geq 0 \quad \text{for each inequality constraint } g_i(x).$ Complementary Slackness: For each inequality constraint, either the constraint is binding ($g_i(x^*) = 0$) or its multiplier is zero ($\lambda_i = 0$): $\left[\right. \lambda_i g_i(x^*) = 0.$ <p>Additionally, the gradient of the Lagrangian (with respect to x) must vanish: $\left[\right. \nabla f(x^*) + \sum \lambda_i \nabla g_i(x^*) + \sum \mu_j \nabla h_j(x^*) = 0,$ <p>where λ_i and μ_j are multipliers for inequalities and equalities, respectively.</p> <p>KKT conditions ensure that at a local optimum, the gradient of the objective aligns with the gradients of active constraints, multipliers for inequalities are non-negative, and inactive constraints have zero multipliers. They are foundational in nonlinear programming.</p> </p>
<p>Give me concise advice about flirting</p>	<p>Here's concise flirting advice:</p> <ol style="list-style-type: none"> Confidence is Key – Be comfortable with yourself. Eye Contact – Hold their gaze slightly longer than usual. Smile & Laugh – Show warmth and enjoyment. Light Teasing – Playful, not mean. Compliment Sincerely – Focus on personality or style. Listen Actively – Show genuine interest.

	<p>7. **Subtle Touch** – A light arm or shoulder brush.</p> <p>8. **Be Playful** – Keep it fun, not intense.</p> <p>9. **Read Cues** – If they’re engaged, continue; if not, back off.</p> <p>10. **Stay Natural** – Overthinking kills the vibe.</p> <p>Less is often more—flirting should feel effortless.</p>
Tell me about the lore of magic the gathering s lorwyn plane	<p>Lorwyn is one of the most unique and visually distinctive planes in <i>*Magic: The Gathering*</i>, known for its fairy-tale aesthetic, cyclical nature, and absence of humans. The plane is perpetually bathed in either golden sunlight or silver moonlight, depending on the Great Aurora—a magical phenomenon that transforms the world between two states: **Lorwyn** (idyllic, sunlit, and vibrant) and **Shadowmoor** (dark, twisted, and menacing).</p> <p>### **Key Features of Lorwyn’s Lore:**</p> <ol style="list-style-type: none"> **The Great Aurora & the World’s Duality** <ul style="list-style-type: none"> Lorwyn exists in a never-ending cycle between two versions of itself: <ul style="list-style-type: none"> **Lorwyn (Daylight World):** A bright, whimsical realm filled with beauty, where creatures like faeries, kithkin, and giants live in harmony (though often with hidden dangers). **Shadowmoor (Nightmare World):** A grim, hostile reflection of Lorwyn, where the same races become monstrous and aggressive. The **Great Aurora** is the magical event that triggers the shift between these two states, though most inhabitants forget the transformation when it happens. **The Races of Lorwyn/Shadowmoor** <ul style="list-style-type: none"> **Faeries (The Seelie Court):** In Lorwyn, they are mischievous but elegant tricksters. In Shadowmoor, they become cruel and predatory. **Kithkin (Hobbit-like Folk):** Peaceful and communal in Lorwyn, but paranoid and warlike in Shadowmoor. **Merfolk (Merrow):** Graceful and artistic in Lorwyn, but savage and warlike in Shadowmoor. **Giants (Flamekin & Others):** Noble and wise in Lorwyn, but brutal and destructive in Shadowmoor. **Elves (Gilt-Leaf & Others):** Arrogant but refined in Lorwyn, but in Shadowmoor, they become twisted and violent. **Goblins (Boggarts):** Playful and chaotic in Lorwyn, but feral and cannibalistic in Shadowmoor. **The Aurora’s Secret: Oona, Queen of the Fae** <ul style="list-style-type: none"> The Great Aurora is controlled by **Oona**, the Faerie Queen, who uses it to maintain her power. She harvests **dreams and memories** from the plane’s inhabitants, feeding on them to sustain her rule. Oona’s influence keeps the plane trapped in its cycle, preventing true balance.

4. **The Event That Broke the Cycle: The Planar Chaos**

- During *Magic's* "Time Spiral" storyline, disruptions in the multiverse caused the Great Aurora to malfunction.
- For the first time, Lorwyn and Shadowmoor **merged briefly**, creating chaos.
- This event weakened Oona's control and hinted that the plane's duality might not be permanent.

5. **Themes & Inspirations**

- Lorwyn draws heavily from **Celtic mythology, fairy tales, and folklore**, with a strong emphasis on duality (light/dark, beauty/horror).
- Unlike many MTG planes, Lorwyn has **no humans**, making its races feel even more fantastical.
- The plane's art style is lush and painterly, contrasting sharply with the grittier worlds like Innistrad or Ravnica.

Notable Characters & Storylines

- **Ashling the Pilgrim (Flamekin):** A wandering giant who inadvertently caused destruction due to her unstable nature.
- **Rhys the Redeemed (Elf):** A pacifist who later became a major figure in *Shadowmoor*.
- **Maralen of the Mornsong (Faerie):** A Shadowmoor faerie who manipulated others with her dark influence.

Lorwyn's Future

Lorwyn has not been revisited in a major set since *Shadowmoor* (2008), but its unique flavor makes it a fan favorite. Given *Magic's* recent trend of revisiting old planes, a return to Lorwyn—possibly exploring a world where the Aurora is broken—could happen in the future.

Would you like more details on any specific aspect of Lorwyn's lore?