

Q. Pick 10 diverse fields (like hr, teaching, finance etc...) and write three very useful diverse prompts for each field with test cases.

## 1. Software

- a. Use the below examples as guidance and answer the question that follows:

Q: What is Agile methodology?

A: Agile methodology is an iterative approach to software development that emphasizes flexibility, collaboration, and customer satisfaction.

Q: What's the difference between functional and non-functional requirements?

A: Functional requirements define what a system is supposed to do, while non-functional requirements define how the system performs its functions, like performance, security, and usability.

Q: How does the Model-View-Controller (MVC) design pattern work in software engineering?

- b. Imagine walking a junior developer through the process of setting up a RESTful API. Begin by explaining the importance of APIs in modern web applications. Transition into the core principles behind REST. Then, guide them step-by-step in setting up a basic GET endpoint using Express.js in a Node.js environment. Conclude with best practices to secure this endpoint.
- c. You're at a tech conference, and someone unfamiliar with software engineering asks about the concept of 'Version Control.' Paint a picture of its evolution, starting from manual file backups, progressing through centralized systems like SVN, and culminating with distributed systems like Git. Share why it's indispensable in today's collaborative development environments.

## 2. Finance

- a. Provide a step-by-step breakdown on evaluating the financial health of a publicly-traded company. Begin by explaining the importance of financial statements. Move on to key metrics like the Price-to-Earnings ratio, Debt-to-Equity ratio, and Return on Equity. Conclude with an overview of external factors, such as market conditions and industry trends, that can influence a company's financial standing.
- b. Imagine you're a financial advisor at a seminar, addressing young adults who've just started their professional careers. They're keen to understand the concept of compound interest. Present your explanation in the following format:

- Introduction: A brief overview of the concept of interest and its types.
  - Main Content:
    1. An analogy or story to make compound interest relatable.
    2. The formula for compound interest and its significance.
    3. Real-world examples showcasing the power of compound interest over time.
  - Conclusion: Emphasizing the long-term impact of compound interest on savings and investments and potential pitfalls if ignored.
- c. Given the finance-related text provided, extract and present the crucial information as a bullet point list. Ensure the summary captures the key points without extraneous details.

Text:

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The Federal Reserve, often referred to as the Fed, is the central bank of the United States. Established in 1913, its primary purpose is to regulate the monetary policy of the country. This involves managing interest rates and controlling the money supply to ensure economic stability. The Federal Reserve has several tools at its disposal, such as open market operations, the discount rate, and reserve requirements. These instruments are used to influence lending rates, inflation, and employment levels. Over the years, the role of the Federal Reserve has expanded, and it now also supervises and regulates banks to protect the credit rights of consumers.

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### 3. Health and well-being

- a. You're a nutritionist speaking at a community health fair. A concerned parent approaches you, curious about the buzzword "Superfoods." Tailor your response to this parent, explaining the concept, providing examples of such foods, and discussing their potential benefits and any misconceptions.
- b. Construct a conceptual web connecting various elements that contribute to Holistic Well-being. Begin with Physical Health, and branch out to aspects like Mental Health, Emotional Balance, Social Connections, and Spiritual Growth. Detail the relationships, overlaps, and distinctions among these elements.
- c. Take us on a journey through the Evolution of Physical Fitness. Start from ancient civilizations and their understanding of body fitness, transition through the Renaissance period, touch upon the fitness boom of the 20th century, and conclude with today's tech-driven fitness trends.

#### 4. Trading

- a. Construct a tree detailing the concept of Risk Management in Trading:

Root: Risk Management

- i. Branch 1: Types of Risks
  1. Leaf A: Systematic Risks
  2. Leaf B: Unsystematic Risks
- ii. Branch 2: Risk Mitigation Strategies
  1. Leaf A: Diversification
  2. Leaf B: Hedging
  3. Leaf C: Setting Stop-Loss Orders
- iii. Branch 3: Assessment Tools
  1. Leaf A: Value at Risk (VaR)
  2. Leaf B: Stress Testing

Illuminate the significance of each branch and leaf for a novice trader, detailing how they can be practically applied.

- b. Imagine you are a seasoned trader mentoring a novice at a trading workshop. In layman's terms, explain the basic concept of Stock Trading. Touch upon what stocks are, why companies issue them, how individuals can buy or sell them, and the potential risks and rewards involved.
- c. Explain the concept of "short selling" in stock trading.

Example 1: Short selling is the act of borrowing shares of a stock from a broker and selling them in the open market, with the intention of buying them back later at a lower price. The trader aims to profit from a decline in the stock's price.

Example 2: Imagine you believe the price of a particular stock, say ABC Inc., is going to drop. Through short selling, you can borrow 10 shares of ABC Inc. and sell them for \$100 each (totaling \$1,000). Later, if the price drops to \$90 per share, you can buy them back for a total of \$900, returning the borrowed shares to the broker. The difference of \$100 is your profit.

Given this understanding, can you explain "short squeeze" in the context of short selling?

#### 5. Legal

- a. What are the primary distinctions between civil law and criminal law?
- b. Provide a breakdown of the Habeas Corpus principle:
  - Definition: Start by explaining what Habeas Corpus means.
  - Origins: Briefly discuss the historical background and where the concept originated.

- Purpose: Explain why the principle of Habeas Corpus is crucial in legal systems.
  - Application: Describe in what scenarios or situations Habeas Corpus might be invoked.
  - Limitations: Point out any limitations or exceptions to this principle.
- c. Read the following excerpt from a legal document:

'The party of the first part ("Lessor") agrees to lease the described property to the party of the second part ("Lessee") for a period of 12 months, commencing on the 1st day of January and terminating on the 31st day of December.'

Given the context, answer the following:

- i. Who is agreeing to lease out the property?
- ii. Who is receiving the property on lease?
- iii. What is the duration of the lease?
- iv. On which date does the lease agreement start and end?

## 6. Teaching

- a. How do technological advancements, such as the integration of Artificial Intelligence and Virtual Reality, stand to revolutionize the Future of Classroom Teaching? Explore the potential benefits, challenges, and the role of the teacher in such technologically augmented environments.
- b. Imagine you're explaining the concept of Differentiated Instruction to someone who has never taught before but is an expert chef. Using the analogy of preparing a meal to cater to various dietary preferences, elucidate how differentiated instruction caters to the diverse learning needs of students in a classroom.
- c. You're a seasoned chemistry teacher, and a fellow educator from the history department approaches you. They're curious about the Periodic Table after overhearing a lesson but admit they have limited background in chemistry.
  - Background: Start with a brief history of the development of the Periodic Table.
  - Core Concept: Explain the fundamental organizational principles behind the table, highlighting the significance of atomic number, groups, and periods.
  - Real-world Relevance: Share why the Periodic Table is not just an academic tool but also essential for understanding chemical reactions and the nature of elements in practical applications.
  - Teaching Tip: Offer a suggestion or method you've found effective when introducing this concept to students who might find it intimidating at first glance.

## 7. Physics

- a. Imagine you are a time traveler from the Renaissance period, and you've just encountered a modern physicist. Using analogies and concepts familiar to a person from the Renaissance, explain the theory of Quantum Mechanics. Consider using metaphors that might resonate with someone from that era to bridge the gap between classical and quantum views of the world.
- b. Consider the concept of General Relativity. Paint a vivid picture using a visualization exercise:
  - Space-Time Fabric: Describe the fabric of space-time as if it were a trampoline or a stretched sheet.
  - Gravity's Effect: Illustrate how massive objects, like planets or stars, distort this fabric.
  - Motion of Objects: Convey how objects move within these distortions and the resulting paths or trajectories they might take.
  - Significance: Highlight why this visualization is essential to grasp the non-intuitive aspects of General Relativity.
- c. Contrast Classical Mechanics with Quantum Mechanics:
  - i. Foundational Differences: Begin by identifying the fundamental distinctions in how each theory views particles and waves.
  - ii. Scale of Applicability: Discuss at which scales (macroscopic vs. microscopic) each theory is most applicable and where they break down.
  - iii. Key Experiments: Point out some pivotal experiments that highlighted the limitations of Classical Mechanics and ushered in Quantum Mechanics.
  - iv. Implications: Reflect on how these two different views of physics have influenced technological advancements and our understanding of the universe.

## 8. Aerodynamics

- a. Picture yourself standing on the tarmac of a busy international airport, with various aircraft taking off and landing. Using this setting as your backdrop: Explain the significance of an airplane wing's shape, focusing on terms like airfoil, camber, and chord.
- b. Contemplate the idea of Supersonic Flight:
  - Speed Ranges: Define subsonic, transonic, supersonic, and hypersonic speeds. At which speeds does the sound barrier get broken?
  - Challenges: Discuss the aerodynamic challenges faced when an aircraft goes supersonic. What is a shockwave, and why is it significant?

- c. Dive into the realm of Boundary Layer Theory in aerodynamics giving an introduction, types, effects on aircrafts, control techniques and real-world scenarios.

## 9. Space

- a. Discuss lunar water ice and its future impact on space endeavors.

Additional Info:

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The lunar surface has more to offer than just dust and craters. Recent missions have revealed traces of water ice, a finding that could revolutionize space travel and colonization. Dive into the ramifications of this discovery. Ponder on how astronauts might tap into this resource for sustenance, derive oxygen, or extract hydrogen for propulsion. Extend your thought process to the grander scheme: How might a consistent water source influence the blueprints of a lunar outpost or the trajectory of interstellar exploration?

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- b. Traditional rockets vs. Ion propulsion: A tale as old as modern space travel.

First, shed light on how ion propulsion operates differently from its chemical cousins. Next, while charting out its strengths like fuel efficiency and potential speeds, don't lose sight of its weaker thrust and slower acceleration. Wrap up with the trade-offs space agencies might consider when choosing between the two for deep space voyages.

- c. In the realm of space exploration, atmospheres play a pivotal role in determining a planet's viability for missions or colonization. Given the wealth of data from missions to Venus, Earth, and Mars:
  - Enumerate their primary chemical components.
  - Describe the relative atmospheric pressures.
  - Point out unique characteristics.
  - Finally, theorize on the implications these attributes might have on manned expedition

## 10. Media

- a. Complete the following template on the concept of Content Marketing:

Definition: [Provide a concise definition of Content Marketing.]

Types:

- [List the first type and provide a brief description.]
- [List the second type and provide a brief description.]

Benefits:

- [State a primary advantage of using content marketing.]
- [Highlight another significant benefit.]

Challenges:

- [Identify a major challenge faced in content marketing.]
- [Mention another obstacle or difficulty.]

- b. Embark on a journey through the History of Advertising. Begin with traditional mediums like newspapers and radio. Transition into television commercials of the 20th century. Then, explore the digital revolution, touching on search engine ads, social media campaigns, and programmatic advertising. Conclude by forecasting the next potential trend in the advertising domain.
- c. You're a digital marketing strategist at a conference, approached by a local business owner unfamiliar with the term Search Engine Optimization (SEO). The owner runs a bakery and wants to increase its online visibility. Craft a relatable pitch that explains SEO in the context of her bakery, the benefits, and a basic roadmap she could consider.