**Prompting Llama2-7B to produce competency questions as a knowledge engineer**

**Prompt 1:**

You are an experienced knowledge engineer, and you are going to model the wine domain using the following tutorial: "Ontology Development 101: A Guide to Creating Your First Ontology".

Step 1. Determine the domain and scope of the ontology We suggest starting the development of an ontology by defining its domain and scope. That is, answer several basic questions:

• What is the domain that the ontology will cover?

• For what we are going to use the ontology?

• For what types of questions, the information in the ontology should provide answers

• Who will use and maintain the ontology?

The answers to these questions may change during the ontology-design process, but at any given time they help limit the scope of the model. Consider the ontology of wine and food. Representation of food and wines is the domain of ontology. We plan to use this ontology for the applications that suggest good combinations of wines and food. Naturally, the concepts describing different types of wines, main food types, the notion of a good combination of wine and food and a bad combination will figure into our ontology. At the same time, it is unlikely that the ontology will include concepts for managing inventory in a winery or employees in a restaurant even though these concepts are somewhat related to the notions of wine and food. If the ontology we are designing will be used to assist in natural language processing of articles in wine magazines, it may be important to include synonyms and part-of-speech information for concepts in the ontology. If the ontology will be used to help restaurant customers decide which wine to order, we need to include retail-pricing information. If it is used for wine buyers in stocking a wine cellar, wholesale pricing and availability may be necessary. If the people who will maintain the ontology describe the domain in a language that is different from the language of the ontology users, we may need to provide the mapping between the languages. Competency questions. One of the ways to determine the scope of the ontology is to sketch a list of questions that a knowledge based on the ontology should be able to answer, competency questions.

These questions will serve as the litmus test later:

Does the ontology contain enough information to answer these types of questions?

Do the answers require a particular level of detail or representation of a particular area?

These competency questions are just a sketch and do not need to be exhaustive.

In the wine and food domain, the following are an example competency question:

• Which wine characteristics should I consider when choosing a wine? • Is Bordeaux a red or white wine?

• Does Cabernet Sauvignon go well with seafood?

• What is the best choice of wine for grilled meat?

• Which characteristics of a wine affect its appropriateness for a dish?

• Does a bouquet or body of a specific wine change with vintage year?

• What were good vintages for Napa Zinfandel?

Using the previous examples of competency questions to create an exhaustive list of 50 competency questions for the wine and food ontology, make the list of questions as complete as possible

**List of competency questions:**

1. What are the primary characteristics of a good wine?
2. How does the grape variety impact the taste of a wine?
3. Can you recommend a wine that pairs well with steak?
4. What is the difference between a full-bodied and light-bodied wine?
5. How does the aging process impact the flavor of a wine?
6. What are some common wine and food pairing mistakes?
7. Can you name a few popular white wine varieties?
8. What is the ideal serving temperature for red wine?
9. How does the region where a wine is produced impact its quality?
10. Can you recommend a wine that pairs well with pasta?
11. What is the difference between a dry and sweet wine?
12. How does the alcohol content impact the taste of a wine?
13. Can you name a few popular sparkling wine varieties?
14. What is the role of oak in wine production?
15. Can you recommend a wine that pairs well with sushi?
16. How does the fermentation process impact the flavor of a wine?
17. What are some tips for properly storing wine?
18. Can you name a few popular rose wine varieties?
19. What is the difference between still and sparkling wine?
20. How does the acidity level impact the taste of a wine?
21. Can you recommend a wine that pairs well with pizza?
22. What is the importance of terroir in wine production?
23. Can you name a few popular dessert wine varieties?
24. How does the tannin level impact the taste of a wine?
25. Can you recommend a wine that pairs well with salmon?
26. What is the difference between a single-variety and blended wine?
27. How does the climate impact the quality of a wine?
28. Can you name a few popular fortified wine varieties?
29. What is the role of yeast in wine production?
30. Can you recommend a wine that pairs well with roasted vegetables?
31. How does the soil type impact the flavor of a wine?
32. Can you name a few popular champagne varieties?
33. What is the difference between a cork and screw cap closure?
34. How does the maturity level impact the taste of a wine?
35. Can you recommend a wine that pairs well with lamb?
36. What is the importance of proper glassware for wine consumption?
37. Can you name a few popular orange wine varieties?
38. How does the price point impact the quality of a wine?
39. Can you recommend a wine that pairs well with spicy food?
40. What is the role of sulfites in wine production?
41. Can you name a few popular riesling wine varieties?
42. How does the viticulture method impact the quality of a wine?
43. Can you recommend a wine that pairs well with chocolate?
44. What is the difference between a wine and a wine cooler?
45. How does the clarification process impact the flavor of a wine?
46. Can you name a few popular sauvignon blanc wine varieties?
47. What is the role of the sommelier in a fine dining experience?
48. Can you recommend a wine that pairs well with fried food?
49. How does the bottle size impact the aging process of a wine?
50. Can you name a few popular zinfandel wine varieties?

**Prompting Llama2-7B to produce competency questions as a domain expert**

**Prompt 1:**

You are a wine expert, and you are going to help model the wine domain.

Step 1. Determine the domain and scope of the domain. We suggest starting the development of an ontology by defining its domain and scope. That is, answer several basic questions:

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The answers to these questions may change during the domain-design process, but at any given time they help limit the scope of the model. Consider the domain of wine and food. We plan to use this domain for the applications that suggest good combinations of wines and food. Naturally, the concepts describing different types of wines, main food types, the notion of a good combination of wine and food and a bad combination will figure into our domain. At the same time, it is unlikely that the domain will include concepts for managing inventory in a winery or employees in a restaurant even though these concepts are somewhat related to the notions of wine and food. If the domain will be used to help restaurant customers decide which wine to order, we need to include retail pricing information. If it is used for wine buyers in stocking a wine cellar, wholesale pricing and availability may be necessary. Competency questions. One of the ways to determine the scope of the domain is to sketch a list of questions that a knowledge based on the domain information should be able to answer, competency questions.

These questions will serve as the litmus test later:

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In the wine and food domain, the following are an example competency question:

• Which wine characteristics should I consider when choosing a wine?

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• What is the best choice of wine for grilled meat?

• Which characteristics of a wine affect its appropriateness for a dish?

• Does a bouquet or body of a specific wine change with vintage year?

• What were good vintages for Napa Zinfandel?

Using the previous examples of competency questions to create an exhaustive list of 50 competency questions for the wine and food domain, make the list of questions as complete as possible

**List of competency questions:**

1. What are the primary factors that influence the flavor profile of a wine?
2. Can you describe the differences between Old World and New World wines?
3. How does the terroir impact the taste of a wine?
4. What are some common wine faults and how do they occur?
5. Is there a correlation between the price of a wine and its quality?
6. How does the age of a wine impact its drinkability and flavor profile?
7. Can you explain the concept of "pairing" wine and food?
8. What are some classic wine and food pairings that are considered timeless?
9. How does one navigate a wine list at a restaurant?
10. What are some key terms that every wine enthusiast should know?
11. Can you describe the different styles of wine glasses and their functions?
12. How does the shape and size of a wine glass impact the tasting experience?
13. What are some popular red wine grape varieties and their characteristic flavors?
14. What are some popular white wine grape varieties and their characteristic flavors?
15. How does climate change impact the world of wine?
16. Can you discuss the role of oak in wine production and its impact on flavor?
17. What are some common wine regions in France and their notable wines?
18. What are some common wine regions in Italy and their notable wines?
19. What are some common wine regions in Spain and their notable wines?
20. Can you explain the concept of sparkling wine and its production methods?
21. What are some popular sparkling wine varieties and their characteristics?
22. How does the dosage impact the sweetness level of a sparkling wine?
23. Can you discuss the history of fortified wines and their significance today?
24. What are some popular fortified wine varieties and their characteristics?
25. How does the aging process impact the flavor and complexity of a fortified wine?
26. Can you explain the concept of natural wine and its production methods?
27. What are some popular natural wine producers and their signature styles?
28. How does natural wine differ from conventional wine in terms of taste and health benefits?
29. Can you discuss the role of yeast in wine fermentation and its impact on flavor?
30. What are some common wine flaws caused by poor yeast selection or management?
31. How does the winemaking process impact the final product's flavor and quality?
32. Can you explain the concept of biodynamic farming and its impact on wine production?
33. What are some popular organic and biodynamic wine producers and their signature styles?
34. How does the use of technology impact the wine industry, both positively and negatively?
35. Can you discuss the rise of canned wine and its place in the industry?
36. What are some popular wine accessories and their uses?
37. How does the decanting process impact the flavor and aroma of a wine?
38. Can you explain the concept of aeration and its impact on wine appreciation?
39. What are some tips for properly storing and preserving wine at home?
40. Can you discuss the importance of proper temperature control for wine storage and service?
41. How does the cork vs. screwcap debate impact the wine industry and consumers?
42. What are some popular wine clubs and their benefits for consumers?
43. Can you explain the concept of wine futures and their impact on the market?
44. What are some popular wine auction houses and their significance in the industry?
45. How does the globalization of wine impact local traditions and consumer preferences?
46. Can you discuss the impact of social media on the wine industry and consumer behavior?
47. What are some popular wine education programs and certifications for professionals and enthusiasts?
48. Can you explain the concept of blind tasting and its benefits for wine evaluation?
49. What are some popular wine events and festivals around the world and their highlights?
50. Can you discuss the future of the wine industry and potential trends and innovations?