

Anallogical Reasoning Scenario 1

Your friend is an zoologist studying the "society" of monkeys. The social behaviors of monkeys are complex and in a lot of ways similar to those of humans. You have no clue about the society of monkeys and would like to learn more about it. To get a more concrete idea about the monkey society, you ask your friend a question so that she draws an analogy between monkey society and human society.

Sources of inspiration:

[1] TED. Frans de Wall: The surprising science of alpha males | TED Talk. Retrieved from https://www.ted.com/talks/frans_de_waal_the_surprising_science_of_alpha_males.

[2] Shutterstock. Monkeys Are Just Like Us: 9 ways Monkeys Reflect Human Behavior - The Shutterstock Blog. Retrieved from <https://www.shutterstock.com/blog/9-ways-monkeys-reflect-human-behavior>.

Analogical Reasoning Scenario 2

Imagine that you have a friend who stayed for a year in a city named Rovaniemi in Finland. After seeing some pictures your friend taken in Rovaniemi, you are really interested in this place and want to know more about it. Think about the US cities that you know (e.g., New York, Los Angeles, Chicago, etc) and the properties of these cities (e.g., culture, population, demographics, weather, etc). You would like to get a more concrete sense of how Rovaniemi is like by asking your friend to compare Rovaniemi with the US cities that you are familiar with.

Your task is to come up with a question to ask your friend. To get your submission approved, your question should help you get a more concrete idea about the Rovaniemi city by asking about the similarities and differences between Rovaniemi and the US cities you know.

Sources of inspiration:

[1] Codeminders. Weather Similarity. Retrieved from http://www.codeminders.com/weather_similarity/.

[2] Reddit. What city would you consider the most similar to Atlanta?. Retrieved from https://www.reddit.com/r/Atlanta/comments/2skaxw/what_city_would_you_consider_most_similar_to/.

Decision Making Scenario 1

Imagine that you bought a mobile phone a month ago. You were not so satisfied with your phone and have been thinking about whether you should replace it. Before you make the final decision, you want to know what is good and bad about your current phone in comparison with the other options in the market. You gathered the detailed attributes of your current phone as well as some other phones you have been considering (visualized in the following figure).



Assume that you are now analyzing the data of the phones. Your task is to come up with a question to ask while you are examining the data so as to enable you to understand the good and bad aspects of your current phone in comparison with the other models and brands.

Sources of inspiration:

[1] USA Today. Repair or replace your old phone? How to decide. Retrieved from <https://www.usatoday.com/story/tech/columnist/2014/09/06/deciding-to-repair-or-replace-old-phone/15122363/>.

[2] Gadgets Now. Compare Mobile Phones - Latest Mobile Comparison by Price, Specification, Features, Performance & Reviews | Gadgets Now. Retrieved from <https://www.gadgetsnow.com/compare-mobile-phones>.

Decision Making Scenario 2

As an international student in the US, mailing something back home can be a painful experience - it is too difficult to choose among different mail services!

Imagine that you are an international student in the US who wants to mail something back home and you know nothing about different mail services (e.g., priority mail express, priority mail, first-class mail, media mail, etc). The postal worker at the front desk says that priority mail is good for your case but you want to know whether other options are better than priority mail. What would you ask the postal worker?

To get your submission approved, your question should help you understand the trade-offs between using priority mail and the other options.

Source of inspiration:

[1] USPS. Compare Postage Options | USPS. Retrieved from <https://www.usps.com/business/postage-options-compare.htm>.

Knowledge Discovery Scenario 1

Imagine that you are a space and astronomy fan. As an astronomy fan, you are very interested in the similarities and differences between the Mars and the Earth. You are exploring a dataset about different aspects of them (e.g., their gravity, the composition of their atmospheres, their sizes, their distances from the sun, etc).

Your task is to come up with a question to ask while you are exploring this dataset to help you gain an understanding of the similarities and differences between the planets.

Source of inspiration:

[1] Space.com. Earth vs. Mars. Retrieved from <https://www.space.com/1582-earth-mars.html>.

Knowledge Discovery Scenario 2

Imagine that you are exploring a dataset about cities in the United States (US) and the United Kingdom (UK). In your dataset, there are 100 US cities and 100 UK cities. Each city has a number of attributes such as prevalence of crime, quality of healthcare, quality of education, and quality of public transport and so on.

Your task is to come up with a question to ask while you are exploring this dataset. To get your submission approved, your question should help you understand the similarities and differences between the US and the UK.

Sources of inspiration:

[1] City-Data Forum. US cities and their UK equivalents? (houses, to live, vs.) - World - City-Data Forum. Retrieved from <http://www.city-data.com/forum/world/1659199-us-cities-their-uk-equivalents.html>.

[2] Business Insider. UK vs. US compared: the biggest difference when I moved to America - Business Insider. Retrieved from <https://www.businessinsider.com/uk-and-us-compared-biggest-cultural-work-difference-2018-4>.

[3] Business Insider. British cities compared to American cities with the same name - Business Insider. Retrieved from <https://www.businessinsider.com/british-cities-compared-to-american-cities-with-the-same-name#but-birmingham-alabama-has-the-jazz-hall-of-fame-seen-here-on-the-right-population-213000-8>.

[4] Brilliant Maps. UK Regions Compared to US States With Similar Population - Brilliant Maps. Retrieved from <https://brilliantmaps.com/uk-region-us-state/>.

Social Comparison Scenario 1

Imagine that you plan to run a marathon next year and want to finish the marathon in 3 hours. You are curious about how your fitness level compares with those who were able to finish the marathon in 3 hours so you obtain a dataset of the runners who participated in last year's marathon.

Your data contains 200 runners who were able to finish last year's marathon in 3 hours. You know the runners' body mass index (BMI), resting heart rate, diet, how many miles they ran daily for training, how long they had trained before the race, and so on. If you want to compare your fitness level with these runners, what question would you ask?

Sources of Inspiration:

[1] Barry Smyth. 2017. Using Artificial Intelligence to Run your Best Marathon. (Jun 2017). Retrieved August 26, 2018 from <https://medium.com/running-with-data/using-artificial-intelligence-to-run-your-best-marathon-97fcea09ba44>.

[2] Chevron Houston Marathon. Chevron Houston Marathon | Results 2018. Retrieved from <http://results.houstonmarathon.com/2018/?pid=search>.

Social Comparison Scenario 2

Imagine that you are the owner of a soccer team in a soccer league. To assess your team's chance of winning the championship in the coming soccer season, you would like to compare the statistics of your players with those of the other soccer teams in the league.

You obtain a dataset with the statistics of your players as well as the players in the other teams. There are 480 players in the datasets. Each player belongs to one of the 32 soccer teams and 15 out of 480 players are your players. From the dataset, you know how much time does each player spend on training, each player's age, salary, number of shots per game, number of goals per game, number of assists per game and so on.

Your task is to come up with a question to ask while you are exploring the data. To get your submission approved, your question should help you understand how your team compares with the other soccer teams.

Source of Inspiration:

[1] Forbes. Want to Invest In Your Favorite Sports Team?. Retrieved from <https://www.forbes.com/sites/daviddomzalski/2018/02/13/invest-in-your-favorite-sports-team/2/#74d36e0293d6>.