**Summary:**

**Analytical Skills:**

*Some types of thinking might not come to you as easily as others but you* ***can absolutely grow and develop these thinking types.***

*This way you can become a* ***versatile thinker*** *which is an important aspect of Data Analysis.*

*The* ***more ways the easier*** *it is to think* ***outside the box*** *and come up with* ***new ideas***

*Why is it important to be able to think in many ways?*

*:- Almost* ***never*** *the solution to our problems will be in front of us, so we need to be able to think in many ways* ***to reach the solution****.*

*We need to think* ***critically*** *to find out the right questions to ask and* ***creatively*** *to get new and unexpected answers.*

**Questions that Data Analysts ask oftenly:->**

1. *What is the root cause of the problem?*
2. *Where are the gaps in our process?*
3. *What did we not consider before?*

**Root cause :** The reason why the problem occurs

To find out the root cause we use the “Five WHYs”

Example : *Let's say you wanted to make a blueberry pie but couldn't find any blueberries.*

1. *Why can't I make a blueberry pie?:The answer will be, there are no blueberries at the store.*
2. *Why were there no blueberries at the store? Then you discover that the blueberry bushes don't have enough fruit this season.*
3. *Why was there not enough fruit? This would lead to the fact that birds were eating all the berries.*
4. *Why were birds eating blueberries? Although the birds normally prefer mulberries and don't eat blueberries, the mulberry bush didn't produce fruit this season, so the birds are eating blueberries instead.*
5. *Why didn't mulberries yield this season? A late frost damaged the mulberry bushes, so it didn't produce any fruit.*

*With the last why we know why we’re not able to make any blueberry pie!*

*To answer the second most common question, “Where are the gaps in our process?”, we need to use* ***Gap Analysis***

***Gap Analysis :*** *A method for examining and evaluating how a process works currently in order to get where you want to be in future.*

*Simply put, Gap Analysis is where you are now V/s where you want to be in future*

*Now the third most common question, “What did we not consider before?”*

*It’s a great way to think about what information or procedure might be missing from the process to make better decisions and strategies moving forward.*

*The way DA asks and answers questions affect business decisions.*

**Keeping the flash cards because below Learning Log**

**Flash Cards:** *Gives better understanding of the five essential analytical skills*

**The qualities and characteristics associated with solving problems using facts :**

**Analytical skills**

**The analytical skill that involves breaking processes down into smaller steps and working with them in an orderly, logical way :**

**A technical mindset**

**The analytical skill that involves how you organize information :**

**Data design**

**The analytical skill that has to do with how you group things into categories :**

**Understanding context**

**The analytical skill that involves managing the processes and tools used in data analysis :**

**Data strategy**

***People don’t think about thinking, thinking is second nature to us, it just happens automatically!***

**There are many different ways of thinking:-**

* *Creative Thinking*
* *Critical Thinking*
* *Analytical Thinking*
* *Abstract Thinking*

**Analytical Thinking :** *Identifying and defining a problem and then solving it by using data in an organized, step-by-step manner.*

**5 Key aspects to Analytical Thinking:**

1. **Visualization :** *Graphical representation of information*
2. **Strategy  *:*** *Strategic mindset is key to staying focused and on track*
3. **Problem-Orientation** *: Identify, describe and solve problem*
4. **Correlation :** *Reln between 2 or more pieces of data*
5. **Big-Picture and Detail-Oriented Thinking**

***Correlation does not equal causation****, two pieces of data trending in the same direction does not necessarily mean that they are all related*

*QA) Data Visualization involves using* ***graphs, maps and charts*** *for representing the present data.*

*QA) To execute a plan using detail-oriented thinking a DA considers the* ***specifics****.*

**Learning Log: Reflect on your skills and expectations**

**Instructions**You can use this document as a template for the learning log activity: Reflect on your skills and expectations. Type your answers in this document, and save it on your computer or Google Drive.

We recommend that you save every learning log in one folder and include a date in the file name to help you stay organized. Important information like course number, title, and activity name are already included. After you finish your learning log entry, you can come back and reread your responses later to understand how your opinions on different topics may have changed throughout the courses.

To review detailed instructions on how to complete this activity, please return to Coursera: [Learning Log: Reflect on your skills and expectations](https://www.coursera.org/learn/foundations-data/supplement/qjFsG/learning-log-reflect-on-your-skills-and-expectations).

| **Date:** <enter date> | **Course/topic:** Course 1: Foundations: Data, Data Everywhere | | |
| --- | --- | --- | --- |
| **Learning Log:** Reflect on your skills and expectations | | |
| **Complete the Analytical Skills Table:** | Here is the Analytical Skills Table for you to fill in. Put an “‘X”’ in the column that you think best describes your current level with each aspect.   | **Analytical Skill** | **Strength** | **Developing** | **Emerging** | **Comments/ Plans/ Goals** | | --- | --- | --- | --- | --- | | Curiosity | X |  |  | I plan to complete this professional course and learn more about data analytics | | Context | X |  |  | I’m developing my correlation skills through problem solving | | Technical mindset | X |  |  | It's literally my strong suit! I can make plans like no one else can | | Data Design |  | X |  | I feel the need to keep my things organized however i still have a long way to go technology wise | | Data Strategy |  |  | X | I’m still new and my mind is fresh about the technological aspect of analytics, I wish to learn more and grow as a good Data Analyst | | | |