

Week 4 Quiz

1. In the lecture videos, system requirements are described as part of a hierarchy of needs. What is at the top of the hierarchy?

- Functional requirements
- Nonfunctional requirements
- Business goals and objectives
- Stakeholder needs

Correct: At the top of this hierarchy you have the goals and objectives of the business. The next thing down on this hierarchy is stakeholder needs. Below stakeholder needs in this hierarchy you have system requirements.

2. Stakeholders are the individual employees of the business who have specific needs and play a role in delivering on the business objectives. Which of the following best represents an example of "stakeholder needs"?

- The finance team needs to increase the overall profit margins of the business.
- A data analyst needs a robust data system to create monthly sales reports to track trends in monthly sales.
- The marketing director needs to expand the business to new international markets.
- The CEO needs to change the company's mission statement to reflect a new vision.

3. Which of the following are examples of nonfunctional requirements? Select all that apply.

- The system must be able to scale up to handle data from 15,000 users simultaneously.
- The system must be secure and protect the sensitive data that it stores.
- The system notifies users when sales metrics are outside some threshold.
- The data system provides raw data for exploratory purposes.

4. Which of the following are examples of functional requirements? Select all that apply.

- The data system must be able to access the public internet to download patches and updates but must not be accessible from the public internet from any inbound traffic.
- The data system combines sales data from several platforms and transforms it for analytical purposes.
- The data system must be available 99.9% of the time.
- The data system detects potentially fraudulent transactions.

5. According to the video this week on how to think about the tradeoffs between cost, scope, and timeline for your projects, what is the best approach when it comes to simultaneously optimizing for all three of these (i.e., breaking the "iron triangle")?
- Build sufficient buffer into your timelines and budgets so that if the scope of the project expands you'll still have room to maneuver.
 - Spend extra time in the planning phase of the project so that you deeply understand the scope of work before getting started and can better estimate your required timeline and budget.
 - Apply the principles and processes you've learned about this week, namely, build loosely coupled systems, optimize for two-way door decisions, and understand the needs of stakeholders.
6. Which of the following statements is true when comparing AWS Glue ETL and Amazon EMR as batch data processing tools?
- AWS Glue ETL has fewer additional features than Amazon EMR but gives you more control over what you can do with code.
 - AWS Glue ETL can offer a more convenient experience than Amazon EMR, provided your use case fits within the features and capabilities of AWS Glue ETL.
 - AWS Glue ETL can handle big data workloads while Amazon EMR cannot.
 - AWS Glue ETL is serverless whereas Amazon EMR doesn't have a serverless option.
7. Which of the following statements is true when comparing Amazon Kinesis Data Streams and Amazon Managed Streaming for Apache Kafka (MSK) as stream processing tools?
- Amazon Kinesis Data Streams gives you a more convenient experience than MSK.
 - Amazon Kinesis Data Streams gives you a higher degree of flexibility and control over MSK. Amazon Kinesis Data Streams comes with more operational overhead than Amazon Managed Streaming for Apache Kafka.
 - Amazon Kinesis Data Streams is not fully managed whereas MSK is.

Correct: The difference between these two tools comes down to the tradeoffs between control vs convenience. MSK gives you a higher degree of flexibility and more control over what you can do, while Kinesis Data Streams is more user-friendly and reduces operational overhead, providing a more convenient experience.