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**17C048**

**Exercise 2**

**Durability:**

durability can be defined as the probability that the object will remain intact and accessible after a period of time.

Amazon S3 Standard, S3 Standard–IA, S3 One Zone-IA, and S3 Glacier are all designed to provide 99.999999999% durability of objects over a given year. This durability level corresponds to an average annual expected loss of 0.000000001% of objects. For example, if 10,000,000 objects are stored in Amazon S3, it is expected to incur a loss of a single object once every 10,000 years. In addition, Amazon S3 Standard, S3 Standard-IA, and S3 Glacier are all designed to sustain data in the event of an entire S3 Availability Zone loss.

**Availability:**

Availability is how much time the service provider guarantees that your data and services are available. This is typically documented as a percent of time per year, e.g. 99.999% (or five nines) uptime means you will be unable to access resources for no more than about five minutes per year.

No system can be 100 percent fool proof or efficient in real world, the same goes for AWS. 100 percent durability means there is no way for an object to get lost, what if all the regions in which the object is stored gets destroyed by a natural disaster or by some other reason. So AWS does not provide 100 percent durability or availability.

99.999999999% durability is actually very high. According to AWS not every application actually needs this much durability. In some cases, the object stored in S3 is simply a cloud-based copy of an object that actually lives somewhere else. In other cases, the object can be regenerated or re-derived from other information.