1. Explain the Snowball concept.

Ans

Debt snowball is **a strategy for paying down debts**, popularized by personal finance author Dave Ramsey. It involves paying off your smallest debts first, then moving on to the next smallest, and so on. A competing strategy is debt avalanche, which calls for paying off debts with the highest interest rates first.

1. Make a distinction between NAT Gateways and NAT Instances.

Ans

When a connection times out, a NAT gateway returns an RST packet to any resources behind the NAT gateway that attempt to continue the connection (it does not send a FIN packet). When a connection times out, a NAT instance sends a FIN packet to resources behind the NAT instance to close the connection.

1. Describe the essential components of Amazon Web Services (AWS).

Ans

The world’s largest cloud service providers (CSPs) offer Intel® Xeon® Scalable processor-powered services, including SaaS, PaaS, IaaS, e-commerce, content distribution, social media, and confidential computing.

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1. When should you utilize a spin-up server? Use examples to demonstrate your point.

Ans

A *server* is a computer that can provide some service to another computer. A common kind of server is a *web server* which *hosts* (stores) the code for a website in its memory and provides a URL where *clients* (the users of the internet) can access that code. When a web server receives a request, it sends the code over the internet to the client’s browser via [**H**yper**t**ext **T**ransfer **P**rotocol (HTTP)](https://en.wikipedia.org/wiki/Hypertext_Transfer_Protocol).

“Spinning up” a server refers to the discs in the hard-drive of a server physically spinning up to speed to serve their contents.

When developing a new web application, it can be useful to test how your website is served via HTTP before hosting publicly. This is where localhost comes in. You can think of localhost as a personal web server URL that can be configured to:

* host content accessible from a particular directory (folder).
* serve content via HTTP (accessible from your computer only).

1. Explain the concept of outlier car scaling.

Ans

The detection of abnormal moving objects over high-volume trajectory streams is critical for real-time applications ranging from military surveillance to transportation management. Yet this outlier detection problem, especially along both the spatial and temporal dimensions, remains largely unexplored. In this work, we propose a rich taxonomy of novel classes of neighbor-based trajectory outlier definitions that model the anomalous behavior of moving objects for a large range of real-time applications. Our theoretical analysis and empirical study on two real-world datasets—the Beijing Taxi trajectory data and the Ground Moving Target Indicator data stream—and one generated Moving Objects dataset demonstrate the effectiveness of our taxonomy in effectively capturing different types of abnormal moving objects. Furthermore, we propose a general strategy for efficiently detecting these new outlier classes called the minimal examination (MEX) framework. The MEX framework features three core optimization principles, which leverage spatiotemporal as well as the predictability properties of the neighbor evidence to minimize the detection costs. Based on this foundation, we design algorithms that detect the outliers based on these classes of new outlier semantics that successfully leverage our optimization principles. Our comprehensive experimental study demonstrates that our proposed MEX strategy drives the detection costs 100-fold down into the practical realm for applications that analyze high-volume trajectory streams in near real time.