3 A paragraph on what PaaS, SaaS and IaaS are and the differences between them.

The three main categories of cloud computing are software as a service(SaaS), infrastructure as a service(IaaS), and platform as a service(PaaS)

Software as a service is the most commonly used option for businesses in the cloud market. The application software is uniformly deployed on the SaaS platform provider's server. Customers can order the necessary application software services from the manufacturer via the Internet based on the actual needs of the job, and pay the manufacturer based on the number of services ordered and the length of time. And through the Internet Access to services provided by Saas platform providers

Platform as a Service provides users with the ability to create, develop, and deploy applications on the associated infrastructure. Using programming languages, libraries, services, and development tools supported by cloud service providers. Users do not have to manage the underlying infrastructure. They can only control the application deployed on the operating system in the infrastructure and configure configurable parameters for the environment that the application hosts. Common PaaS services are database services, web applications, and container services

Infrastructure as a Service is businesses renting or leasing servers in the cloud for computing and storage. Users can deploy and run any software, including operating systems and application software, on the infrastructure provided by cloud service providers. Users do not have the right to manage and access the underlying infrastructure, but they have the right to manage the operating system, store content, install management applications, and even manage network components. The common IaaS services include virtual machines, virtual networks, and storage.

The primary difference between IaaS and PaaS is that IaaS provides administrators with more direct control over operating systems, whereas PaaS provides users with greater flexibility and ease of use. IaaS is responsible for the infrastructure of cloud-based technology. PaaS enables developers to create custom apps that can be delivered over the cloud using an API. Furthermore, SaaS is cloud-based software that businesses can sell and use. SaaS products, from applications to data servers, are fully managed by another company, whereas PaaS products can be used as the foundation for building new products on top of the platform's network.

4 A paragraph on the differences between ETL and ELT. Also, list the pros and cons of each in a chart. And specify when you'll use which.

ETL is best suited for on-premise data that requires structuring before being uploaded to a relational data warehouse. When datasets are small, this method is typically used. ELT is best suited for large volumes of data and is best implemented in cloud environments, the data lake's large storage and computing power allows it to quickly store and transform data. ELT is also more flexible in terms of data format, but it takes longer to process data for queries. The key

differences between ELT and ETL are the order of operations between the two processes. It makes them uniquely suited to various situations.

	ETL	ELT
Pros	♦ Can be implemented in on-premise or cloud-based environments ♦ Can deal with complex transformation ♦ Maintain data security and integrity throughout its existence ♦ Can redact and remove sensitive information before putting it into the data warehouse, easier to satisfy compliance standards.	♦ Can deal with massive amounts of structured and unstructured data. ♦ The transformation only happens when the analysis is needed, having greater efficiency of resources ♦ All data has been loaded into a data lake, so the data is widely available. ♦ Can be applied to new data sources to rapidly capture information in the data lake
Cons	♦ Slow loading speed ♦ Cannot handle large-scale, high-volume data. ♦ Only requires a relational or structured data format	♦ Regulations may forbid businesses from storing sensitive information. ♦ Slow speeds of insight for inspecting large volumes of unstructured data. ♦ The true advantage of ELT cannot implement in an on-premise environment.