

Q3. Paragraph on what PaaS, SaaS, IaaS are and the difference between them.

**IaaS (Infrastructure as a Service)** is a means of providing computing infrastructure as a service on demand. It allows for scaling and resources to be delivered as a service. IaaS primarily caters to companies that require on-demand infrastructure. IaaS is completely self-service for accessing and monitoring computers, networks, storage, and other services. IaaS allows businesses to purchase resources on-demand and as-needed rather than having to purchase hardware outright.

Who will use IaaS?

- Startups and small companies can use IaaS to avoid spending time and money on hardware and software investments.
- Larger companies want to retain complete control over their applications and infrastructure, but want to keep costs down, paying only for what they actually consume or need.
- Companies are experiencing rapid growth as the scalability of IaaS, and they can change specific hardware and software easily as their needs evolve.

**PaaS (Platform as a Service)** provides certain cloud components for developers to build applications according to their requirements. PaaS provides a framework that they can build and use to create custom applications. Computing resources are managed by a third party or enterprise, and application management is handled by developers. The platform is delivered over the web, giving devs the freedom to focus on building software without worrying about operating systems, software updates, storage, or infrastructure. PaaS allows businesses to design and create applications that are pre-integrated in PaaS with special software components. These applications are sometimes referred to as middleware, which are scalable and highly available because they have certain cloud characteristics.

**SaaS (Software as a Service)** also known as cloud application service, is the most popular service for businesses in the cloud market. Many of these applications can be run directly through web browser and therefore do not require any download or installation. SaaS offers many advantages for employees as well as businesses by significantly reducing the time and money spent on tedious tasks like installing, managing, and upgrading software.

Q4. Between ETL and ELT

**ELT** is another way to approach data mobility. Instead of converting data before writing, ELT allows the “target system” to convert first. The data is first copied to the “destination” and then transformed there. ELT is often used with No-SQL databases like Hadoop, Data Appliance or Cloud Installation.

**ETL** stands for Extract, Transform and Load. In this process, an ETL engine extracts data from different RDBMS source systems then transforms the data like applying data transformations and then loads the data into data warehouse system. ETL are streams from “source” to “destination”. During ETL, the conversion engine handles any data changes.

	ETL	ELT
Pros	<ul style="list-style-type: none"> <li>-Best use on premise</li> <li>-Fast analysis</li> <li>-Flexibility of enviroment</li> <li>-Compliance</li> <li>-Maturity</li> <li>-Hadoop, NoSQL databas</li> </ul>	<ul style="list-style-type: none"> <li>-Best suited for large data and implemented in cloud environments</li> <li>-More flexible</li> <li>-Loading speed</li> <li>-Data volume</li> <li>-Database Warehouse</li> <li>-Lower cost of ownership</li> <li>-Open source</li> </ul>
Cons	<ul style="list-style-type: none"> <li>-Require more time to process and parameters</li> <li>-Rigidity of workflow</li> <li>- Hard to handle large files</li> </ul>	<ul style="list-style-type: none"> <li>-Require more time to process data for queries</li> <li>-Security gaps</li> <li>-Resource bloat</li> <li>-Absent data governance</li> </ul>

Depends on what purpose of the business, but I personally chose ELT like economical process as it requires less resources than ETL and take smaller amount of time. However, with ETL, business can analyze sensitive data with less upkeep and time to fuel data driven innovation.

Source:

<https://www.astera.com/type/blog/etl-vs-elt-whats-the-difference/>  
<https://blog.hubspot.com/website/etl-vs-elt>