Lillian Lei

**Difference between ETL and ELT**

|  |  |  |
| --- | --- | --- |
|  | ETL | ELT |
| Process | Process: extract, transform, and load | Process: extract, load, and transform |
| Transformation process | Data moves from the data source to staging then into the data warehouse | Transformation happens inside the data system. No need for data staging. |
| Data size vs complexity of transformation | Best for smaller datasets that require complex transformation | Best for massive amounts of unstructured and structured data |
| Transformation time | Longer transformation time | Quick transformation since you can transform data only required for a particular need |
| Analysis Time | Thanks to the pre-structured nature of the OLAP data warehouse, ETL allows speedier and more stable data analysis | may be slower and inaccurate |
| Loading time | Slower loading | Quicker loading |
| Compatibility with data lake | No | Can work with data lake which can contain unstructured data |
| Compliance | Help with data privacy and compliance by cleaning sensitive data before loading into the data warehouse | Must upload sensitive data to the data warehouse first, which violates GDPR, HIPPA, and CCPA standards |
| Maintenance | Automated and cloud based ETL solutions require little maintenance. But an onsite ETL solution requires frequent maintenance | Low maintenance since ELT utilizes automated solutions |
| Adoption of the technology and availability of tools and experts | More ETL tools due to longer existence | New technology, so limited source |
| Cost | Enterprise-level ETL can be expensive | More cost effective |