Data Model

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XML Data Model

- Base or describes hierarchy using which information will be stored in XML documents

- Can be base for other models

- Describes the logical structure of data

```xml
<user ID="1">
  <fname fname="Jo" />
  <lname lname="Brown" />
</user>
<user ID="2">
  <fname fname="Katie" />
  <lname lname="McAskill-White" />
</user>
<user ID="3">
  <fname fname="Mihail" />
  <lname lname="Frintu" />
</user>
<user ID="4">
  <fname fname="Jimmy" />
  <lname lname="Bischoff" />
</user>
<user ID="5">
  <fname fname="Alan" />
  <lname lname="Brewer" />
</user>
```

Querying and transformation Tools - OLTP and OLAP

- OLTP - Online Transection Processing
  - E.g. Online Purchase of product from website
  - Transfer of money from one bank account to another
  - Uses simple queries (may be using joins etc.) for getting data from multiple interconnected database tables
  - Emphasis on transection guarantee
- OLAP – Online Analytical Processing
  - Examples include year-over-year financial performance or marketing lead generation trends
  - Change in preference of buyer about the cars over the number of years
  - Uses complex queries to analyze aggregated historical data from OLTP systems.
  - Emphasis is on processing time of query