Data analytics roles vary depending on specialization, in general it involves collecting, processing, analyzing, and interpreting data to drive decision-making. Below is a breakdown of common roles and their responsibilities in data analytics, based on industry-standard practices:

1. Data Analyst
   - Responsibilities:
     - Collect and clean data from various sources (databases, APIs, spreadsheets).
     - Perform exploratory data analysis (EDA) to identify trends, patterns, and anomalies.
     - Create visualizations (e.g., dashboards, charts) using tools like Tableau, Power BI, or Python (Matplotlib, Seaborn).
     - Write SQL queries to extract and manipulate data from databases.
     - Develop reports and presentations to communicate insights to stakeholders.
     - Collaborate with business teams to understand requirements and provide actionable insights.
     - Monitor key performance indicators (KPIs) and metrics to track business performance.
   - Tools: SQL, Excel, Python, R, Tableau, Power BI, Google Analytics.
   - Skills: Statistical analysis, data visualization, problem-solving, communication.

2. Business Intelligence (BI) Analyst
   - Responsibilities:
     - Design and maintain BI dashboards and reporting systems.
     - Translate business needs into technical specifications for data models and reports.
     - Analyze data to support strategic business decisions and optimize processes.
     - Work with data engineers to ensure data pipelines support BI needs.
     - Provide insights into market trends, customer behavior, and operational efficiency.
     - Ensure data accuracy and consistency in BI tools.
   - Tools: Power BI, Tableau, QlikView, Looker, SQL, ETL tools.
   - Skills: Data modeling, business acumen, stakeholder management, dashboard design.

3. Data Scientist
   - Responsibilities:
     - Build and deploy machine learning models to predict outcomes or identify patterns.
     - Perform advanced statistical analysis and hypothesis testing.
     - Clean and preprocess large datasets for modeling.
     - Develop algorithms and predictive models using Python, R, or similar tools.
     - Collaborate with product teams to integrate data-driven solutions into applications.
     - Communicate complex findings to non-technical stakeholders.
     - Experiment with new techniques (e.g., deep learning, NLP) to solve business problems.
   - Tools: Python, R, TensorFlow, PyTorch, SQL, Jupyter Notebook, Spark.
   - Skills: Machine learning, programming, statistics, data wrangling, storytelling.

4. Data Engineer
   - Responsibilities:
     - Design and build data pipelines to extract, transform, and load (ETL) data.
     - Maintain and optimize databases and data warehouses (e.g., Snowflake, Redshift, BigQuery).
     - Ensure data quality, integrity, and security across systems.
     - Automate data workflows and ensure scalability of data infrastructure.
     - Collaborate with data analysts and scientists to provide clean, accessible data.
     - Implement data governance and compliance policies.
   - Tools: SQL, Python, Apache Spark, Airflow, Kafka, AWS/GCP/Azure, Hadoop.
   - Skills: Database management, cloud computing, ETL processes, programming.

5. Data Visualization Specialist
   - Responsibilities:
     - Create compelling and interactive visualizations to represent complex data.
     - Design dashboards that are user-friendly and tailored to stakeholder needs.

- Work with analysts and scientists to translate raw data into visual stories.
- Ensure visualizations adhere to design best practices and accessibility standards.
- Test and optimize visualizations for performance and clarity.
- Tools: Tableau, Power BI, D3.js, Looker, Google Data Studio.
- Skills: Data visualization, graphic design, UX/UI principles, storytelling.

6. Machine Learning Engineer
- Responsibilities:
- Develop and deploy machine learning models into production environments.
- Optimize models for performance, scalability, and efficiency.
- Collaborate with data scientists to refine algorithms and improve model accuracy.
- Build APIs and microservices to integrate models into applications.
- Monitor and maintain models to ensure they perform well over time.
- Experiment with new ML frameworks and techniques.
- Tools: Python, TensorFlow, PyTorch, Docker, Kubernetes, AWS/GCP/Azure.
- Skills: Software engineering, machine learning, DevOps, model deployment.

7. Data Analytics Manager
- Responsibilities:
- Oversee a team of analysts, scientists, or engineers to deliver data projects.
- Define analytics strategies aligned with business goals.
- Manage stakeholder relationships and prioritize data initiatives.
- Ensure the quality and timeliness of analytics deliverables.
- Mentor team members and foster a data-driven culture.
- Stay updated on industry trends and emerging tools/technologies.
- Tools: Project management tools (Jira, Trello), BI tools, SQL.
- Skills: Leadership, strategic planning, communication, project management.

8. Chief Data Officer (CDO) / Head of Analytics
- Responsibilities:
- Develop and implement the organization's data strategy.
- Oversee data governance, compliance, and security policies.
- Align analytics initiatives with business objectives and ROI.
- Lead cross-functional teams to drive data-driven decision-making.
- Advocate for data literacy and adoption across the organization.
- Manage budgets and resources for data analytics programs.
- Tools: Varies (strategic focus, less hands-on with tools).
- Skills: Leadership, business strategy, data governance, stakeholder management.