Data Analytics	Analyze raw data to get insights or commonality in the information
Descriptive Analytics	Describing historical trends in data. Does not make predictions nor informed decisions, merely summarizes data in a meaningful way
Advanced Analytics	Uses advanced tools to extract data, make predictions, and discover trends.

Significance
- Optimize and grow businesses through better decision making and products.
- Based on patterns found by analyzing data
- Converts raw data into meaningful information to draw conclusions

Application
- Social media stats
- Cellphone bills show pattern of usage
- Weather monitor - report data instantly
- Player statistics for athletes

DESCRIPTIVE ANALYTICS

- Set of techniques that describe what transcribed
- Data queries, reports, data visualization, data-mioning techniques
- Future-prof spreadsheet models

Data Dashboard
- Monitor specific aspects of performance related to decision-making
- Collection of information that is updated as new data is available

Data Mining
- Use of analytical techniques to understand patterns and relationships in big data

PREDICTIVE ANALYTICS
- Techniques that use models from past data to predict future impact of a certain variable
- Linear Regression, Time Series analysis, Data mining, Simulation
- Provides a forecast but not a decision
- Prediction + rule = prescriptive model
- Rule-based models

BIG DATA
- Volume (amount)
- Variety (type)

- Velocity (frequency)
- Veracity (quality)
- Value

TOOLS AVAILABLE FOR DATA ANALYTICS
- NoSQL
- MapReduce
- Storage
- Servers
- Processing

Descriptive Analysis	Considers performance indicators and historical data and compares them to a benchmark
Regression Analysis	Relationship between one or more independent variables and dependent ones
Classification Analysis	Most applied technique. Combined with logistic regression
Time Series Analysis	Used for in-depth observation.

Bar Chart, Column Chart	Both charts are useful for giving numerical differences among categories.
Word Cloud Chart	It is used as the visual representation of text data. This chart needs a large data and the discrimination's degree.
Line Chart	It represents the transformation of data across a continuous time interval.
Gantt Chart	It gives the exact timing and the activity's progress in contrast to the requirements.
Area Chart	It is used to fill the area between the axis and the polyline with color to represent better trend data.
Radar Chart	It describes which data variable has higher values and which has the lower values. Moreover, it uses to compare various quantized charts.
Pie Chart	It represents the proportion of various groups. It is mostly used for only one data series.
Scatter Plot	It presents the variable distribution in points to reveal the correlation among the rectangular coordinate system variables.
Funnel Chart	It is used to represent the proportion of individual stages and reflects the individual module's size. It also supports ranking comparison.
Bubble Chart	It is a scatter plot's variation. Here, the bubble area can be represented as the 3rd value.

Artificial Neural Networks	It is a system that can improve its structure depending on the information that flows within the network. It considers being highly dependable in forecasting applications and business classification.
Decision Trees	A tree-shaped model that describes a regression or classification model. It distributes the data sets into smaller subsets and develops in a similar decision tree simultaneously.
Evolutionary Programming	It is domain-independent data analytics techniques that use to examine extensive search space efficiently.
Fuzzy Logic	Another data analysis technique depends on the probability that helps in handling the difficulties in data mining techniques.

Types of Data

Qualitative	Quantitative
Measurable	Descriptive
Collected through measuring things that have a fixed reality	Collected through observation, interviews, recordings
Close ended	Open ended

Unit	Value	Size
bit (b)	0 or 1	1/8 of a byte
byte (B)	8 bits	1 byte
kilobyte (KB)	1000^1 bytes	1,000 bytes
megabyte (MB)	1000^2 bytes	1,000,000 bytes
gigabyte (GB)	1000^3 bytes	1,000,000.000 bytes
terabyte (TB)	1000^4 bytes	1,000,000,000,000 bytes
petabyte (PB)	1000^5 bytes	1,000,000,000,000,000 bytes
exabyte (EB)	1000^6 bytes	1,000,000,000,000,000,000 bytes
zettabyte (ZB)	1000^7 bytes	1,000,000,000,000,000,000,000 bytes
yottabyte (YB)	1000^8 bytes	1,000,000,000,000,000,000,000,000 bytes

Parameters	Small Data	Big Data
Definition	Small enough to understand	Complex, difficult to process
Technology	Traditional	Modern
Database	SQL	NoSQL
Data Source	Transactions, Enterprises	Social Media, GPS data, Customer Service
Data Condition	Ready for analysis, merging not necessary	Unstructured, merging necessary
Data Size	Spreadsheet is enough	Basta daghan kaayo
Data Purpose	Data collection	No intended purpose
Velocity	Aggregation is slow	Aggregation is fast
Scalability	Vertically	Horizontally
Processing	Batch-oriented	Batch and stream
Security	User privileges, hashing, data encryption	Data encryption, access control protocols, cluster network isolation
Location	Localized, Database	Cloud, offshore, Servers

DATA ANALYST SKILLS	DATA SCIENTIST SKILLS
Data Mining	Data Mining
Data Warehousing	Data Warehousing
Math, Statistics	Math, Statistics, Computer Science
Tableau and Data Visualization	Tableau and Data Visualization/Storytelling
SQL	Python, R, JAVA, Scala, SQL, Matlab, Pig
Business Intelligence	Economics
SAS	Big Data/Hadoop
Advanced Excel skills	Machine Learning