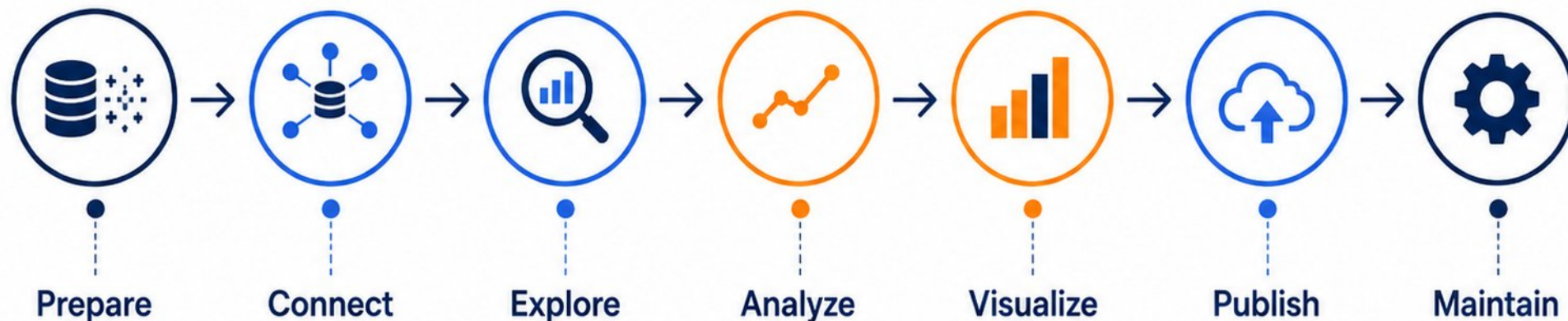


Introduction to Tableau Data Visualization

- Leading BI platform for visual analytics and data exploration
- ~17–18% share of BI market; over 120,000 customer organizations
- Platform: Tableau Desktop, Prep, Cloud, Server, and Tableau Next
- Shifting toward agentic analytics and AI-assisted exploration
- Roadmap: from data connection to governed, repeatable dashboards



Where Tableau Fits in the Analyst Workflow



- End-to-end workflow: prepare, connect, explore, analyze, visualize, publish, maintain
- Exploratory analysis vs. governed reporting: when each approach applies
- Use cases: executive dashboards, operational reports, self-service, embedded BI
- Tableau's edge: visual storytelling, interactivity, large practitioner community

Connecting to Data and Choosing Your Connection Type



Connect to SQL Server, Snowflake, Excel, BigQuery, Salesforce, and published data



Live connections query data directly, ensuring real-time freshness



Extracts are optimized snapshots that accelerate performance



Choose extracts when queries are slow, sources are unreachable, or work offline

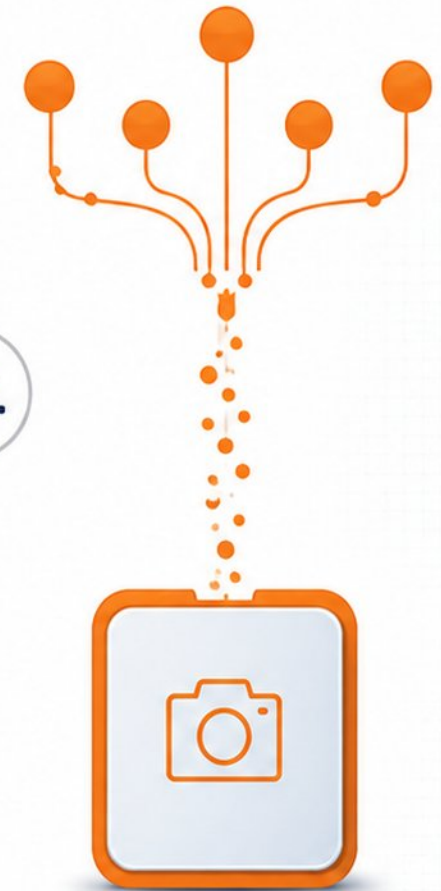


Choose live when real-time data and row-level security are critical

LIVE CONNECTION



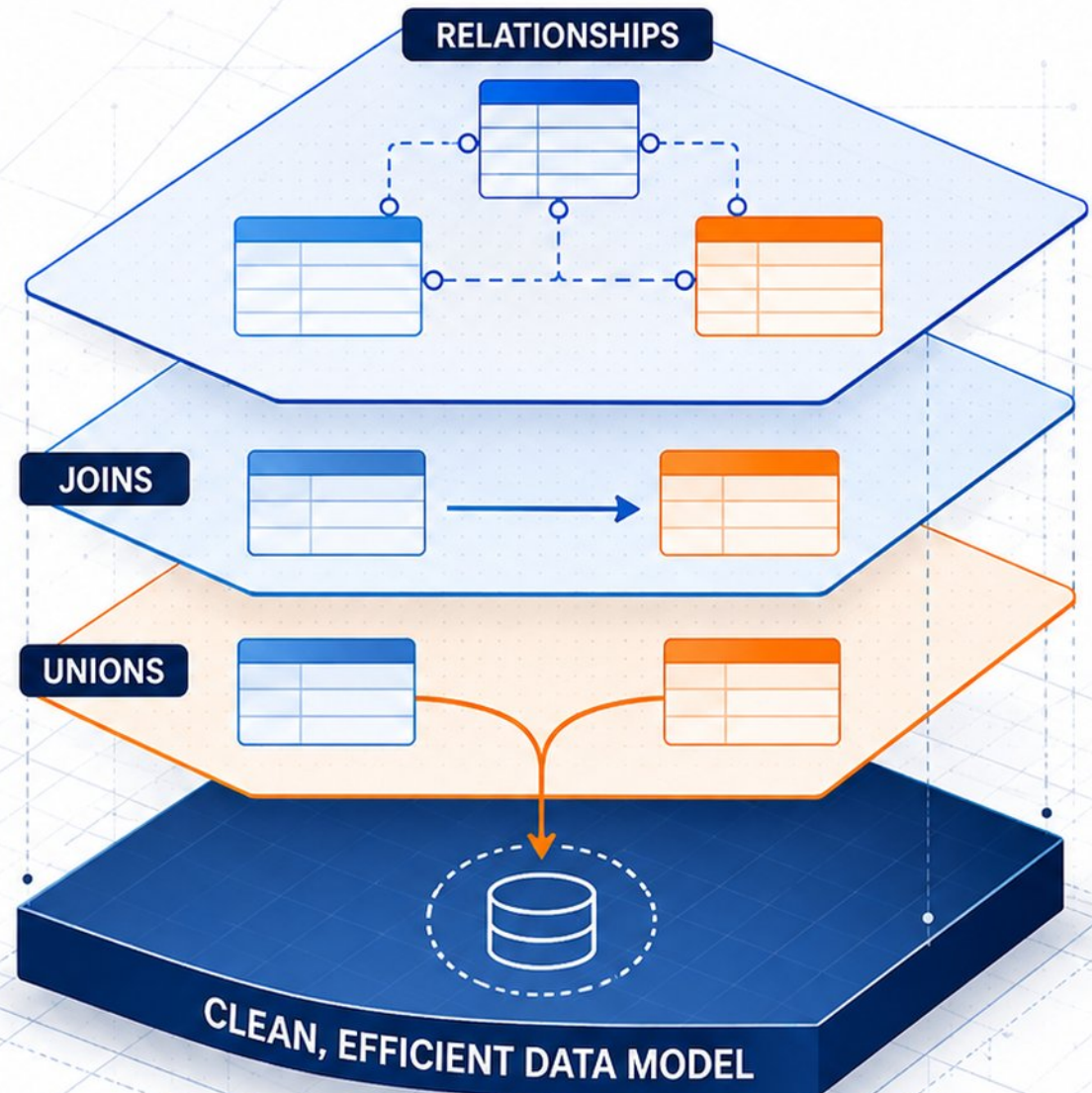
EXTRACT (SNAPSHOT)



VS.

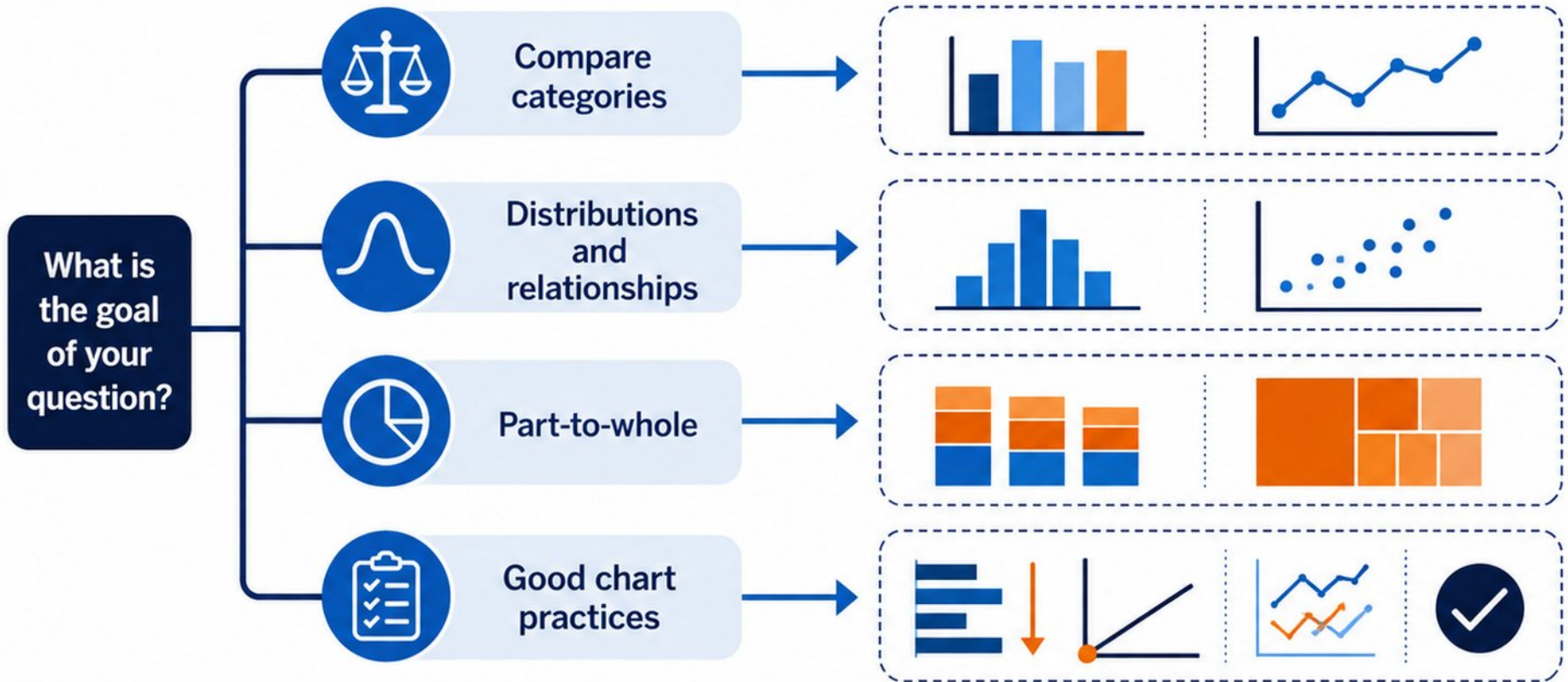
Building a Clean, Efficient Data Model

- Relationships over joins, unions, or blends
- Use Tableau Prep for analytic-ready data
- Cut unused fields, filter and aggregate data
- Skip custom SQL: use native views or Prep





Choosing the Right Chart for the Question



- Compare categories: bar charts; trends over time: line charts
- Distributions: histograms and box plots; relationships: scatter plots
- Part-to-whole: stacked bars or treemaps, not multi-slice pies
- Sort bars, start axes at zero, limit series; match question to chart

Making Visualizations Clear and Readable

Cluttered and Hard to Read



Clean and Easy to Read



- Place primary view upper-left; limit dashboards to three or four views



- Use marks, colors, sizes, labels, and tooltips to boost readability

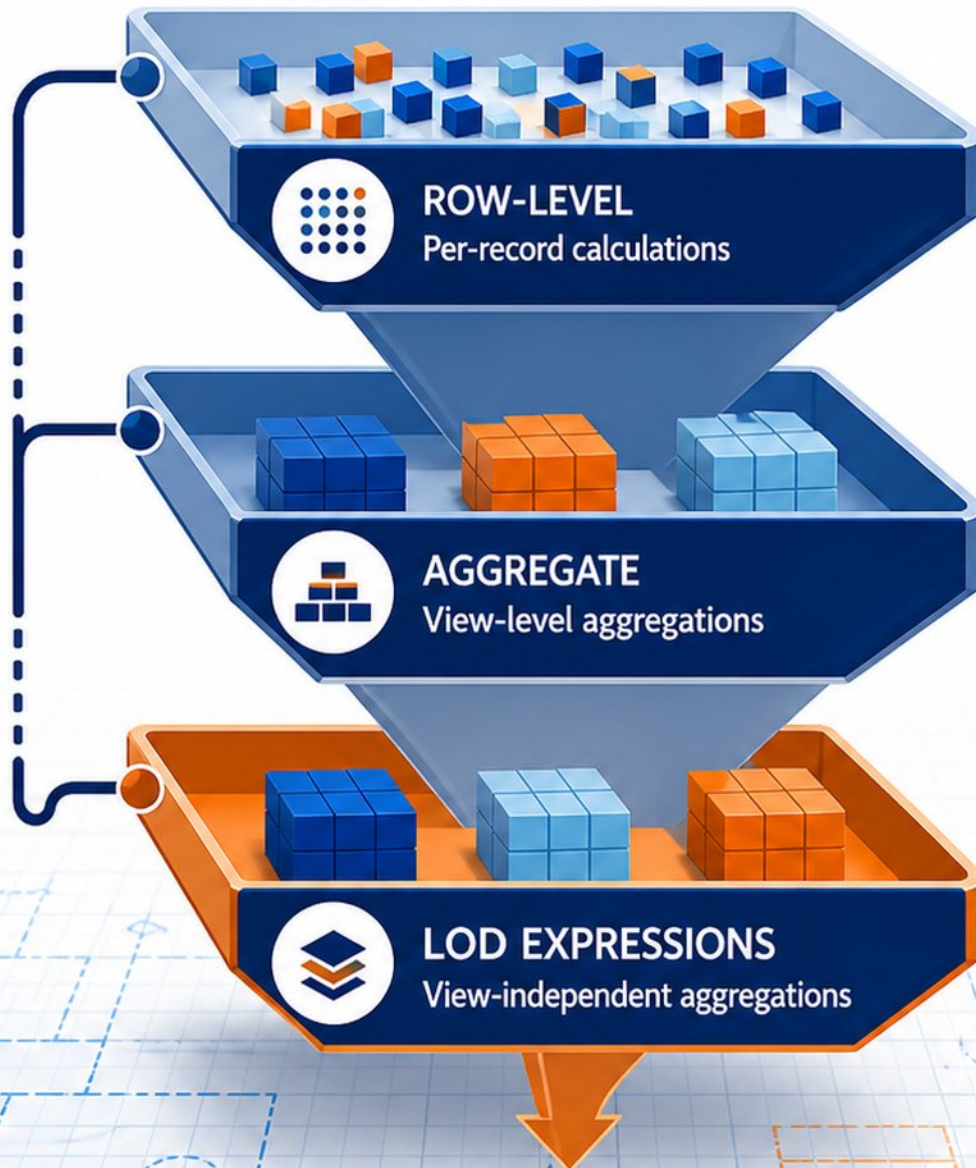


- Apply consistent visual language for metrics across dashboards



- Avoid 3D effects, chart junk, misleading baselines, and dual-axis misuse

Calculations: Row-Level, Aggregate, and LOD



- Row-level calcs execute per record; aggregate calcs run at view level
- LOD expressions offer view-independent aggregations: FIXED, INCLUDE, EXCLUDE
- Use table calcs only for positional logic: running sums, ranks, moving averages
- Apply LOD-first rule for percent of total or category comparisons
- Match calculation type to view layout to avoid performance issues

Mastering Table Calculations



- **Partitioning and addressing:**
mental model behind table calcs



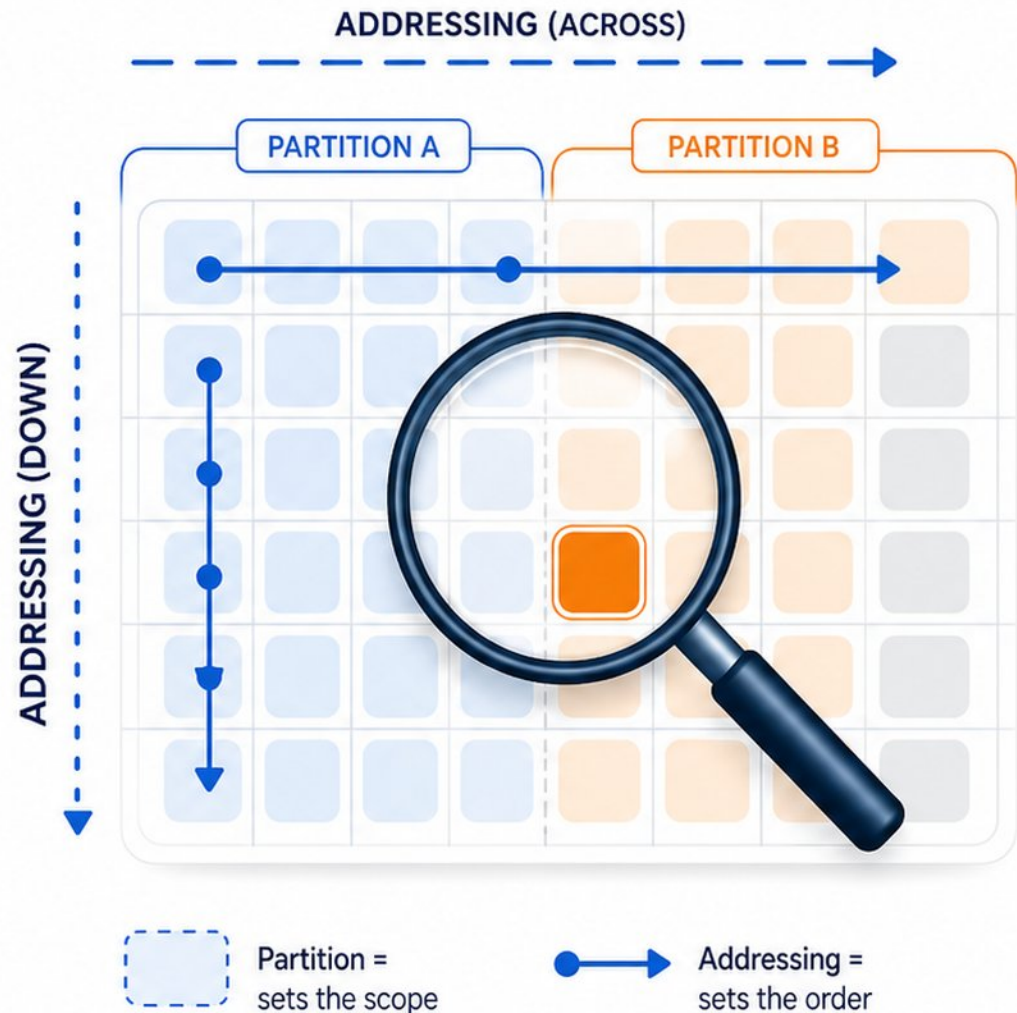
- **Common functions:**
RUNNING_SUM, LOOKUP,
WINDOW_SUM, RANK, INDEX, TOTAL



- **Four bug patterns:**
wrong Compute Using, sort-order
scramble, hidden marks, dimension
changes



- **Best practices:**
use Specific Dimensions,
lock sorts, prefer LODs when
non-positional



Adding Interactivity with Parameters and Analytics



- Parameters enable dynamic thresholds, Top N controls, and what-if analysis



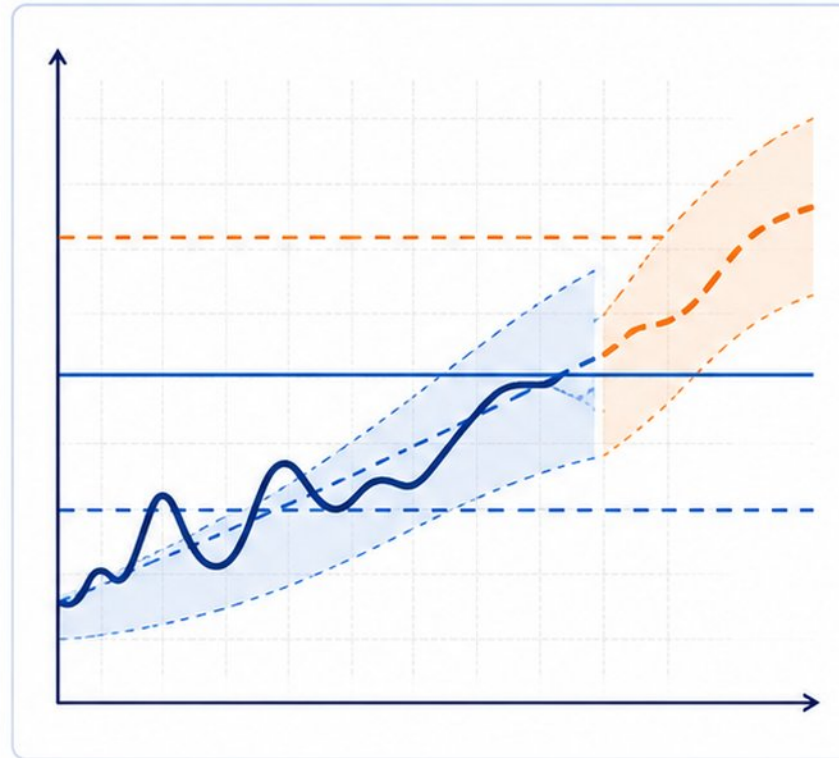
- Add reference lines, trend lines, forecasts, and distribution bands for context



- Use cases: dynamic alerts, target comparisons, live operational dashboards



- Forecasts are best for steady trends; use other methods for volatile data



Parameters

Threshold



Top N



Forecast Horizon

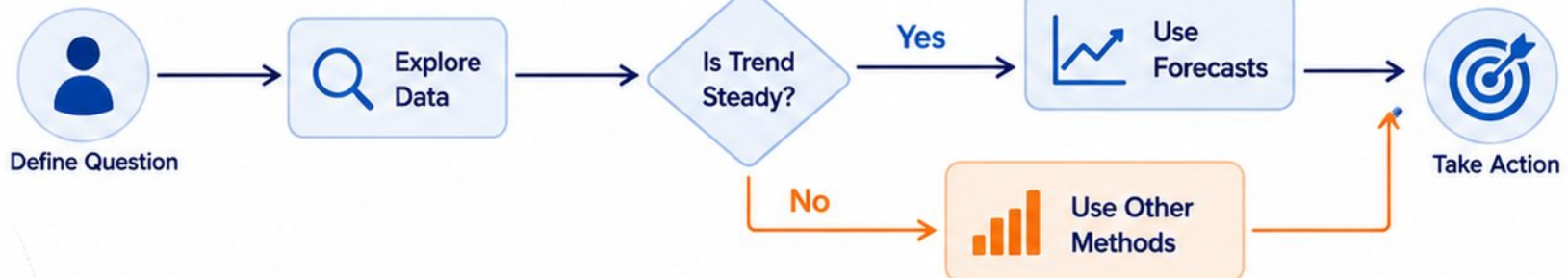


Sensitivity



Adjust parameters to explore scenarios and guide decisions.

Analyst Decision Tree



Designing Interactive Dashboards for Reporting



- Use containers, tiled layouts, and device previews for flexible design



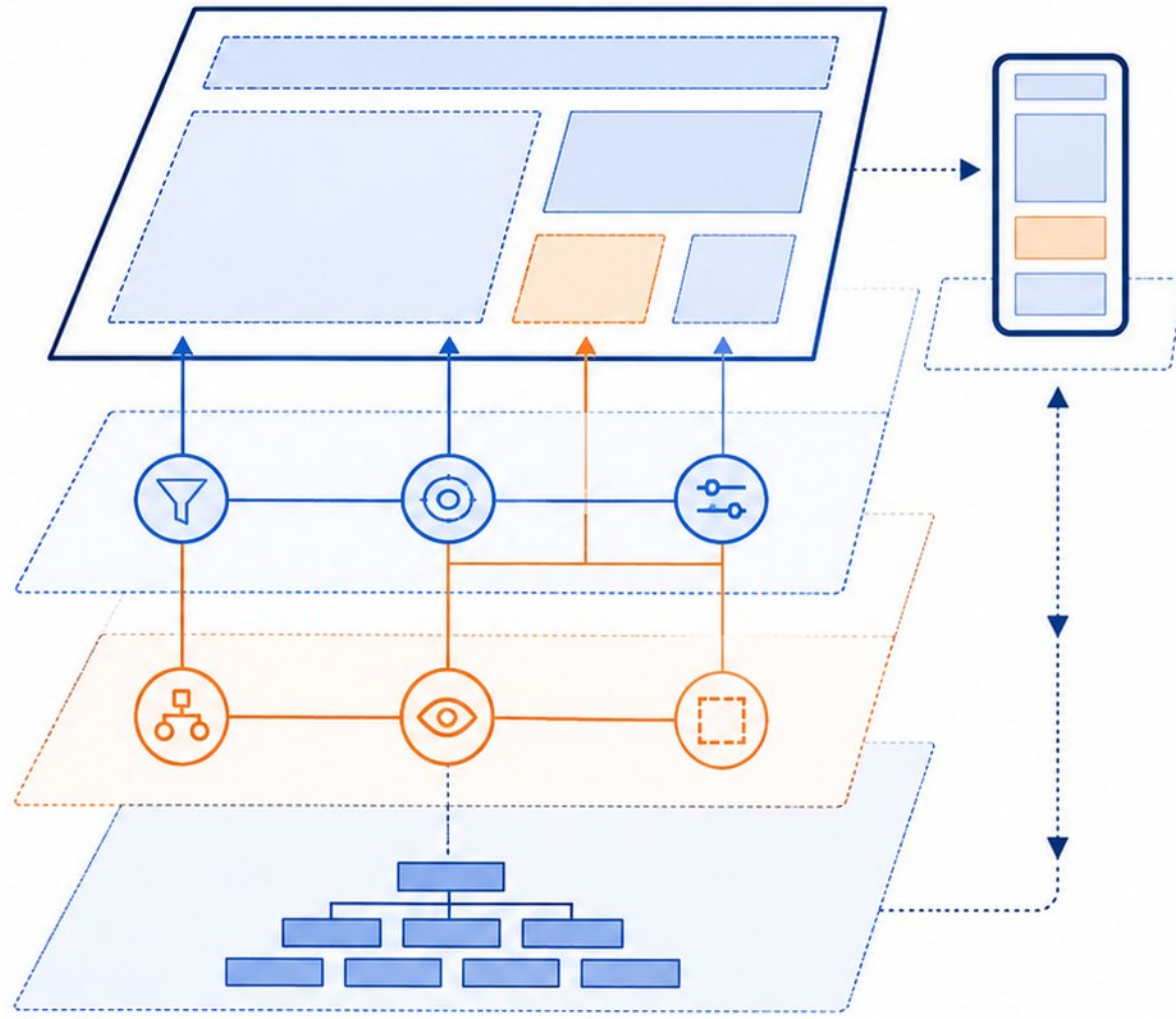
- Filter, highlight, and parameter actions enable guided analytics



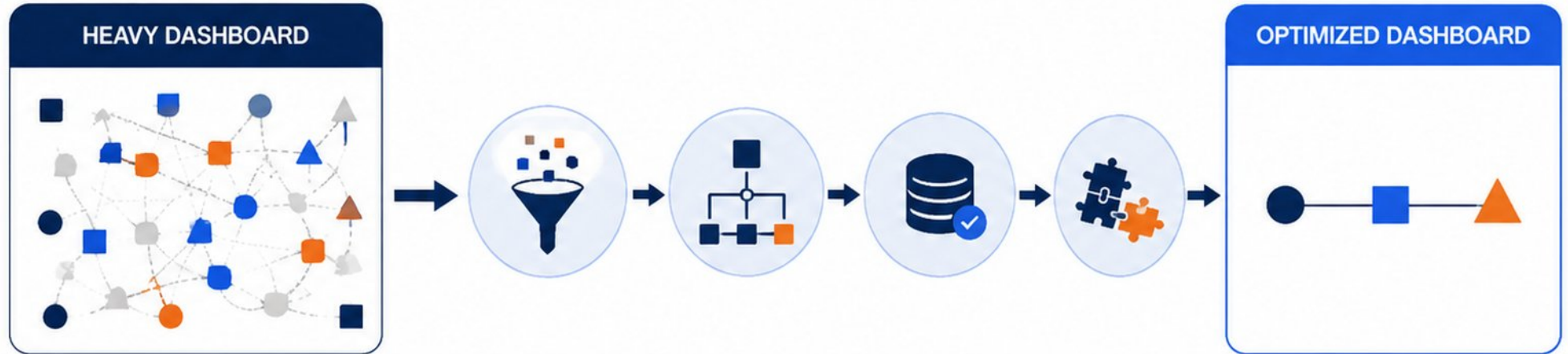
- Set actions and dynamic zone visibility deepen user exploration



- Guide stakeholders from summary to detail with clear layout hierarchy



Performance-Conscious Dashboard Design



-  - Reduce marks, filters, and data volume for faster rendering
-  - Guide analytics with drill-downs rather than showing everything
-  - Use Booleans/integers over strings/dates; MIN/MAX over AVG; avoid COUNTD
-  - Set fixed dashboard sizes and simplify containers and worksheets

Publishing, Sharing, and Governance



- Publish workbooks and data sources to Tableau Cloud or Server



- Organize projects, groups, and permissions for secure access



- Certify data sources to support governed self-service analytics



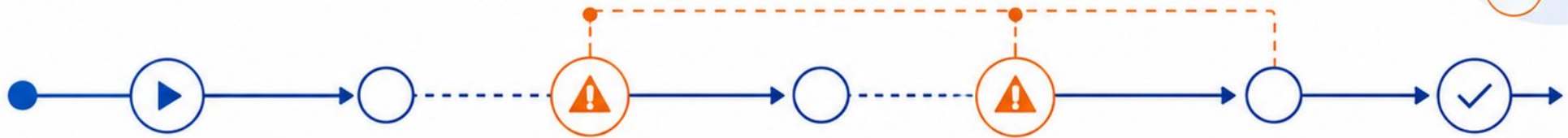
- Schedule extract refreshes; set up subscriptions and alerts



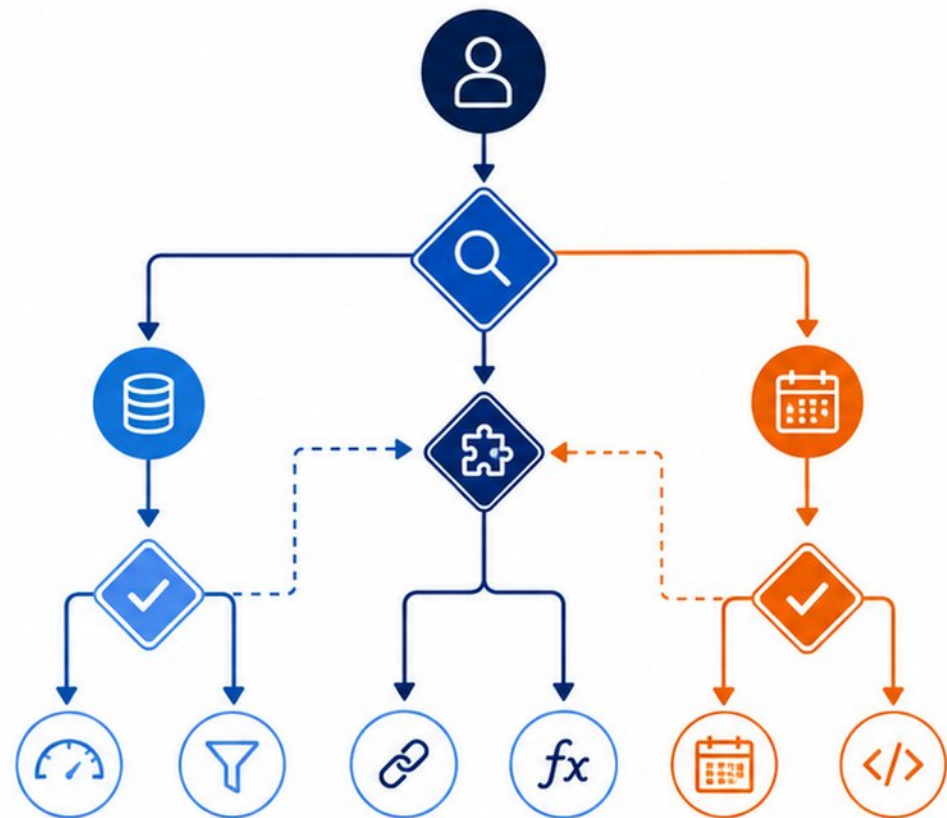
- Use locked projects and clear naming conventions for consistency



Troubleshooting Common Problems



- Debug slow workbooks with the Performance Recorder: identify long queries and slow calculations.
- Optimize with extracts, fewer marks, and guided analytics.
- Prefer extracted, filtered, and simplified views.
- Fix join, blend, and LOD errors; verify table calculation logic.
- Resolve data type and date handling issues with MAKEDATE and DATEPARSE.



Building a Repeatable Analyst Workflow

- ✓ Transition from exploration to governed, repeatable reporting
- ✓ Create reusable templates and style guides for consistency
- ✓ Certification-ready workbooks support skill validation
- ✓ Follow role-based paths and pursue Tableau Data Analyst certification
- ✓ Team next steps: adopt certification workflow, track progress



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