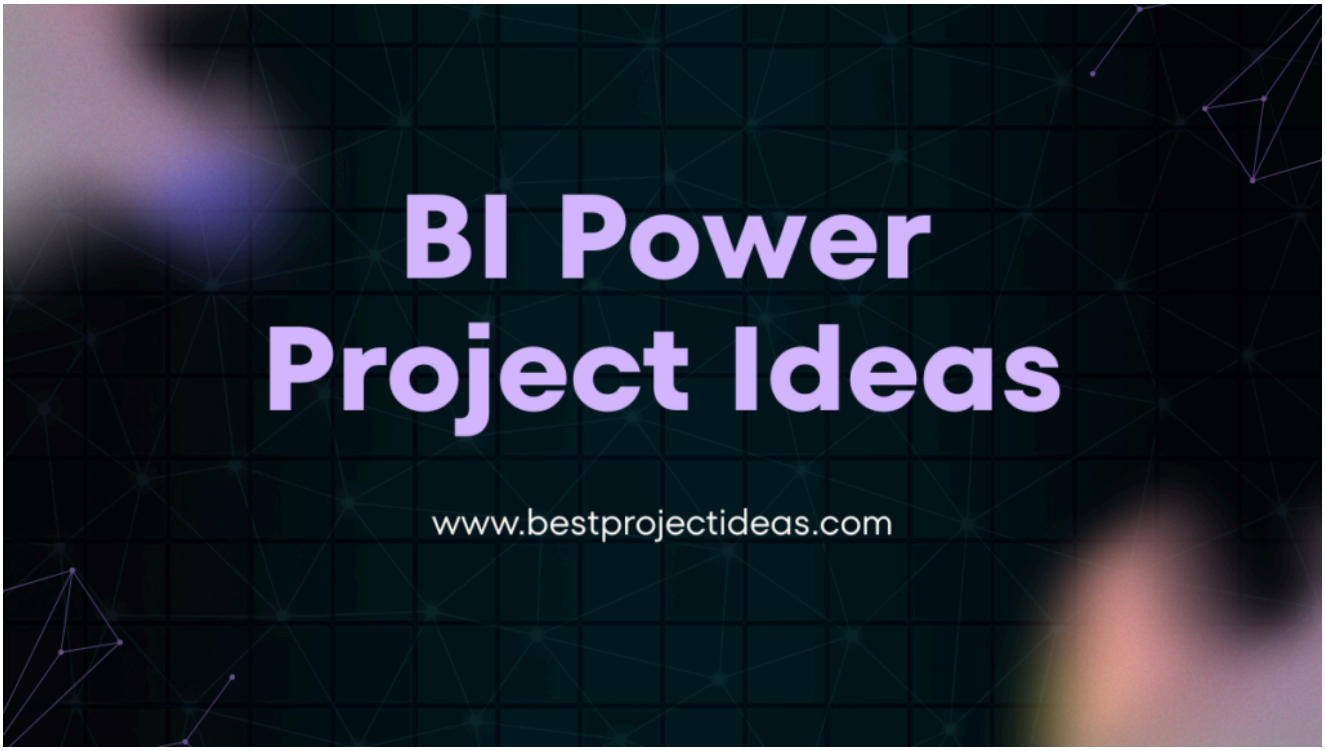
Best Project Ideas

# BI Power Project Ideas — 30 Project Ideas for Students

DECEMBER 18, 2025 | JOHN DEAR




If you are a student learning business intelligence and data visualization, working on hands-on projects is the fastest way to build skills and a portfolio.

This article gives you **30 detailed bi power Project Ideas** (Power BI project ideas) written clearly for students: each idea includes the objective, suggested datasets, skills you'll learn, implementation steps, expected deliverables, difficulty level, and an estimated time to complete.

Use these ideas to practice Power BI (Microsoft's BI tool), prepare for college projects, internships, or to build a showcase that employers and teachers will notice. Power BI helps you transform raw data into interactive dashboards and reports that tell meaningful stories.

Below you'll find practical, achievable projects ranging from beginner to advanced. Where possible I include dataset sources (Kaggle, open government, or simulated CSVs) and concrete steps so you can copy-paste or adapt the plan to your own needs. If you want more project ideas or a template `.pbix` starter file for any project, tell me which project number and I'll prepare a step-by-step starter checklist for you.

Must Read: Genius Hour Project Ideas 5th Grade — 30 Creative Projects Students Can Do

Table of Contents

# How to use these bi power Project Ideas (quick guide for students)

Before you start a project, follow these simple steps:

1. Choose a project that matches your current skill level (beginner/intermediate/advanced).
2. Find or create a dataset (Kaggle, government open data, Excel/CSV).
3. Import data to Power BI Desktop and use Power Query to clean and shape it.
4. Build relationships and design a data model; create measures using DAX.
5. Design the report pages, add interactivity (slicers, drillthrough, bookmarks).
6. Publish to Power BI Service if you want to share online and schedule refreshes.
7. Document your working process and write a short summary of findings.

Resources and inspiration are widely available — collections of Power BI projects and templates can help when you're stuck. Use community examples to learn new visuals and DAX patterns.

# 30 BI Power Project Ideas 2026-27

## 1. Sales Performance Dashboard (E-commerce)

**Objective:** Visualize sales by product, region, channel, and time to identify trends and top performers.

**Datasets:** Orders, Products, Customers, Returns, Marketing Campaigns (CSV or Kaggle e-commerce datasets).

**Skills learned:** Data modeling, time intelligence DAX (YTD, MTD), slicers, clustered charts.

**Implementation steps:**

- Import and clean sales and product data in Power Query.
- Create a Date table and mark it as a date table.
- Build relationships between Orders → Products → Customers.
- Create measures: Total Sales, Units Sold, Avg Order Value, Sales Growth.
- Build pages: Overview, Product Analysis, Region Analysis, Returns.

**Deliverables:** Interactive .pbix with filters for date range, product category, region; summary analytics page.

**Difficulty:** Beginner → Intermediate
**Estimated time:** 2–5 days

## 2. Student Performance and Attendance Dashboard (Education)

**Objective:** Track student grades, attendance patterns, subject performance, and identify students needing help.

**Datasets:** Student list, Attendance records, Exam scores per subject (create sample CSVs or use school data).

**Skills learned:** Row-level calculations, conditional formatting, drillthrough to student details.

**Implementation steps:**

- Clean attendance and exam data; calculate attendance rates.
- Normalize scores and compute average and percentile ranks.
- Create conditional visuals highlighting students below thresholds.
- Add drillthrough to view an individual student's history.

**Deliverables:** Report showing class averages, subject weak spots, and at-risk students list.

**Difficulty:** Beginner
**Estimated time:** 3–4 days

## 3. HR Analytics Dashboard (Employee Metrics)

**Objective:** Analyze headcount, turnover, hiring pipeline, gender ratio, and performance distribution.

**Datasets:** Employee master, Hire/Exit records, Performance ratings (synthetic or HR open datasets).

**Skills learned:** Calculated columns/measures, cohort analysis, funnel visuals.

**Implementation steps:**

- Build employee lifecycle tables and calculate tenure.
- Create turnover rate measures and join with department dimension.
- Visualize hiring funnel (applicants → interviews → hires).

**Deliverables:** Dashboard with HR KPIs and filters by department/location.

**Difficulty:** Intermediate
**Estimated time:** 4–6 days

## 4. Inventory Management Dashboard (Retail)

**Objective:** Monitor stock levels, reorder points, SKU velocity, and stock-out risk.

**Datasets:** Inventory logs, Sales history, Supplier lead times.

**Skills learned:** Forecasting basics, moving averages, conditional alerts.

**Implementation steps:**

- Compute days of inventory on hand and stock turnover.
- Design visuals to highlight slow-moving or out-of-stock SKUs.
- Create expected reorder lists using threshold logic.

**Deliverables:** Inventory health dashboard + printable reorder report.

**Difficulty:** Intermediate
**Estimated time:** 4–7 days

## 5. Customer Segmentation and RFM Analysis

**Objective:** Segment customers using Recency, Frequency, Monetary (RFM) scoring to target marketing.

**Datasets:** Transactional sales dataset with customer IDs and timestamps.

**Skills learned:** RFM calculation, segmentation, clustering visualization, cohort tables.

**Implementation steps:**

- Calculate Recency (days since last purchase), Frequency (purchase count), Monetary (total spend).
- Create RFM score bands and map to segments (champions, at-risk, sleepers).
- Visualize segments and suggest tailored actions.

**Deliverables:** Segmentation report with recommended marketing actions.

**Difficulty:** Intermediate
**Estimated time:** 3–6 days

## 6. Website Traffic & SEO Dashboard

**Objective:** Analyze web traffic sources, user behavior, top landing pages, and SEO performance.

**Datasets:** Google Analytics export or sample web logs (CSV).

**Skills learned:** Time series line charts, channel grouping, bounce rate calculations.

**Implementation steps:**

- Import GA data; create page and source dimensions.
- Compute metrics: sessions, users, bounce rate, session duration.
- Add trend analysis and top page reports with UTM breakdown.

**Deliverables:** Traffic overview and actionable SEO recommendations.

**Difficulty:** Intermediate
**Estimated time:** 3–5 days

## 7. Financial Statements & Ratio Analysis Dashboard

**Objective:** Build interactive financial statements (income, balance sheet) and compute financial ratios.

**Datasets:** Company income statement, balance sheet, cash flows (sample or public filings).

**Skills learned:** Aggregation, year-over-year comparison, waterfall charts.

**Implementation steps:**

- Map chart of accounts to report categories.
- Create measures for gross margin, operating margin, current ratio.
- Build P&L and KPI pages with trend and variance analysis.

**Deliverables:** Interactive financial report and ratio summary.

**Difficulty:** Intermediate → Advanced
**Estimated time:** 5–8 days

## 8. Supply Chain & Logistics Dashboard

**Objective:** Monitor deliveries, transit times, supplier performance, and shipping costs.

**Datasets:** Shipments, Carrier logs, Warehouse inventory levels.

**Skills learned:** Geospatial visuals (map visualizations), route performance, KPI tracking.

**Implementation steps:**

- Clean shipment timestamp data; calculate transit time metrics.
- Visualize shipments on maps and analyze delivery time distributions.
- Score suppliers on on-time delivery and quality.

**Deliverables:** Logistics dashboard and supplier ranking sheet.

**Difficulty:** Advanced
**Estimated time:** 6–10 days

## 9. Healthcare Patient Management Dashboard

**Objective:** Track patient visits, bed occupancy, doctor utilization, and common diagnoses.

**Datasets:** Patient visits, staff rosters, bed occupancy logs (privacy-safe/simulated data).

**Skills learned:** Handling sensitive data (anonymization), advanced filtering, KPI alerts.

**Implementation steps:**

- Anonymize patient IDs; aggregate visits by department and diagnosis.
- Build occupancy trends and clinician workload visuals.
- Add drillthrough for department or physician detail.

**Deliverables:** Hospital operations dashboard and patient flow analysis.

**Difficulty:** Advanced
**Estimated time:** 7–10 days

## 10. Social Media Analytics Dashboard

**Objective:** Analyze engagement across platforms (likes, shares, comments), post performance, and sentiment.

**Datasets:** Social API exports, CSVs with post metrics; optional sentiment scores.

**Skills learned:** API data handling, custom visuals for social KPIs, sentiment interpretation.

**Implementation steps:**

- Import social metrics and normalize across platforms.
- Create engagement rate measures and top post analysis.
- Add time-series and campaign comparison pages.

**Deliverables:** Social media performance report + top content recommendations.

**Difficulty:** Intermediate
**Estimated time:** 4–7 days

## 11. Energy Consumption & Analysis Dashboard

**Objective:** Visualize household or building energy usage and identify peak consumption and savings opportunities.

**Datasets:** Meter readings, timestamps, tariff rates (open energy data or simulated).

**Skills learned:** Time series decomposition, peak/off-peak comparisons, calculated columns for cost.

**Implementation steps:**

- Aggregate meter readings to hourly/daily.
- Calculate cost with tariff mapping and spot peaks.
- Suggest energy saving visualizations (peak shaving).

**Deliverables:** Energy report with actionable reduction steps.

**Difficulty:** Intermediate
**Estimated time:** 4–6 days

## 12. Movie/Streaming Analytics Dashboard

**Objective:** Explore show popularity, user ratings, genre trends, and watch time distribution.

**Datasets:** Movie datasets (IMDb, Kaggle), streaming metrics (simulated).

**Skills learned:** Text parsing (genres), rating averages, ranking visuals.

**Implementation steps:**

- Clean genre lists into normalized table.

- Create top-N visualizations and filter by year/genre.
- Add sentiment or review count insights.

**Deliverables:** Interactive entertainment dashboard with trending titles.

**Difficulty:** Beginner → Intermediate
**Estimated time:** 3–5 days

## 13. Hospital Waiting Time and Queue Analysis

**Objective:** Analyze waiting times by department and patient type to recommend process improvements.

**Datasets:** Appointment logs, arrival and served timestamps.

**Skills learned:** Calculating durations, percentiles, heatmaps, Pareto analysis.

**Implementation steps:**

- Calculate waiting time metrics and percentiles by department.
- Visualize distribution and bottleneck analysis.
- Suggest staffing or scheduling improvements.

**Deliverables:** Waiting-time report and prioritized improvement list.

**Difficulty:** Intermediate
**Estimated time:** 4–6 days

## 14. Real Estate Market Dashboard

**Objective:** Map property prices, compare neighborhoods, analyze price per sq. ft., and time on market.

**Datasets:** Real estate listings (public portals or Kaggle housing datasets).

**Skills learned:** Geospatial clustering, price normalization, trend forecasting basics.

**Implementation steps:**

- Normalize price and area; compute price/sqft.
- Create maps with cluster layers and filters by property type.
- Add trend lines for price growth.

**Deliverables:** Market snapshot and neighborhood comparison tool.

**Difficulty:** Intermediate
**Estimated time:** 4–7 days

## 15. Transportation & Public Transit Dashboard

**Objective:** Analyze ridership, route performance, delays and peak load times for a transit network.

**Datasets:** Transit logs, GPS traces, schedule vs actual arrival times (open transit datasets).

**Skills learned:** Time matching, route analytics, map visualizations.

**Implementation steps:**

- Compute on-time performance and delay distributions.
- Build route heatmaps and peak ridership charts.
- Create filterable views by line or station.

**Deliverables:** Transit operations dashboard with recommended adjustments.

**Difficulty:** Advanced
**Estimated time:** 6–9 days

## 16. Crime Statistics and Safety Dashboard

**Objective:** Visualize crime patterns by type, location, and time to identify hotspots.

**Datasets:** Police open data portals (crime incidents) or simulated data.

**Skills learned:** Heatmaps, temporal patterns, choropleth maps.

**Implementation steps:**

- Geocode incident locations; bucket by crime type.
- Visualize hotspots and time-of-day trends.
- Add filters for severity and year.

**Deliverables:** Safety dashboard and hotspot reports.

**Difficulty:** Intermediate
**Estimated time:** 4–7 days

## 17. Retail Basket / Market Basket Analysis

**Objective:** Find product associations (which items are bought together) to inform cross-sell and placement.

**Datasets:** Transaction line items (orderID, productID).

**Skills learned:** Market basket logic, basic association rules (externally compute apriori then visualize), cross-sell dashboards.

**Implementation steps:**

- Precompute association rules (in Python/R or external tool).
- Import results and highlight top pairs/triples in Power BI.
- Build recommendations view for store managers.

**Deliverables:** Cross-sell insights and recommended product pairings.

**Difficulty:** Advanced (requires external association mining)
**Estimated time:** 6–10 days

## 18. Customer Churn Prediction (dashboard + explanation)

**Objective:** Visualize churn drivers and show predicted churn risk segments (combine ML outputs with Power BI).

**Datasets:** Customer usage history, subscription logs, support tickets.

**Skills learned:** Integrating ML model outputs, risk scoring, explanation visuals.

**Implementation steps:**

- Build dataset and compute historical churn labels.
- Train simple model externally (Python) and import predictions into Power BI.
- Visualize churn risk and key contributing features.

**Deliverables:** Churn dashboard with recommended retention actions.

**Difficulty:** Advanced (requires ML outside Power BI)
**Estimated time:** 7–12 days

## 19. COVID-19 / Public Health Tracker (or any epidemic)

**Objective:** Track cases, recoveries, and vaccination rates over time and geography.

**Datasets:** Public health open datasets (Johns Hopkins, government portals).

**Skills learned:** Time series, map visuals, per-capita rates.

**Implementation steps:**

- Clean country/region data and compute per 100k metrics.
- Visualize rolling averages and growth rates.
- Add comparison views and forecasts if desired.

**Deliverables:** Public health monitoring dashboard.

**Difficulty:** Intermediate
**Estimated time:** 4–7 days

## 20. Marketing Campaign ROI Dashboard

**Objective:** Measure campaign cost, conversions, cost per acquisition, and ROI by channel.

**Datasets:** Ad spend, leads, conversions, sales attributed to campaigns.

**Skills learned:** Attribution basics, ROI calculations, funnel visuals.

**Implementation steps:**

- Map campaign spend to conversions and revenue.
- Compute CPA, ROAS, and ROI measures.
- Create comparison views across channels.

**Deliverables:** Campaign performance report and channel recommendations.

**Difficulty:** Intermediate
**Estimated time:** 4–6 days

## 21. Hotel Booking & Occupancy Dashboard

**Objective:** Analyze occupancy rates, ADR (average daily rate), RevPAR, and seasonal trends.

**Datasets:** Bookings, room inventory, rate data.

**Skills learned:** Hospitality KPIs, seasonal analysis, forecasting basics.

**Implementation steps:**

- Calculate occupancy by date and room type.
- Compute ADR and RevPAR measures.

- Visualize seasonality and compare year-over-year.

**Deliverables:** Hotel performance dashboard and revenue opportunities.

**Difficulty:** Intermediate
**Estimated time:** 4–7 days

## 22. Retail Price Elasticity and Promotion Analysis

**Objective:** Understand how price changes and promotions affect sales volumes.

**Datasets:** Historical price, promotional flags, sales units.

**Skills learned:** Elasticity concepts, price vs volume charts, promotion uplift calculations.

**Implementation steps:**

- Align price history with sales by date and SKU.
- Compute percent changes and estimate elasticity.
- Highlight promotions that drove net incremental revenue.

**Deliverables:** Price strategy insights and promo effectiveness charts.

**Difficulty:** Advanced
**Estimated time:** 6–9 days

## 23. Agriculture Yield & Weather Impact Dashboard

**Objective:** Correlate crop yields with weather conditions and inputs (fertilizer, irrigation).

**Datasets:** Crop yield records, weather station data, input usage.

**Skills learned:** Correlation visuals, joining time series from different sources, scatter plots.

**Implementation steps:**

- Merge weather and yield data by region and season.
- Analyze correlations and build simple regression insights externally if needed.
- Visualize areas with highest yield variability.

**Deliverables:** Farming insights dashboard and improvement suggestions.

**Difficulty:** Advanced
**Estimated time:** 6–10 days

## 24. Banking – Loan Portfolio & NPL Dashboard

**Objective:** Monitor loan performance, non-performing loans (NPL), and exposure across sectors.

**Datasets:** Loan book, repayment history, borrower segments.

**Skills learned:** Risk KPIs, cohort analysis, recovery rate calculations.

**Implementation steps:**

- Compute days past due and NPL ratios.
- Build sectoral exposure visuals and vintage analysis.
- Add early warning indicators for portfolio deterioration.

**Deliverables:** Loan portfolio health dashboard.

**Difficulty:** Advanced
**Estimated time:** 7–12 days

## 25. Retail Store Heatmap (In-store analytics)

**Objective:** Visualize in-store metrics (sales by aisle, footfall by zone) to optimize store layout.

**Datasets:** POS sales with location tags, footfall sensor data (simulated).

**Skills learned:** Custom visuals, heatmap mapping, spatial density.

**Implementation steps:**

- Convert store layout coordinates and map sales to zones.
- Build heatmap showing high and low performing areas.
- Recommend layout changes based on data.

**Deliverables:** Store layout heatmap and action plan.

**Difficulty:** Intermediate → Advanced
**Estimated time:** 5–8 days

## 26. Airline Operational Dashboard

**Objective:** Track flight punctuality, delays, cancellations, and route profitability.

**Datasets:** Flight schedule vs actual logs, passenger load factor, fare classes.

**Skills learned:** Time difference calculations, on-time performance, route analytics.

**Implementation steps:**

- Compute delay distributions and average arrival/departure delay.
- Rank routes by profitability and punctuality.
- Visualize airport/airline performance metrics.

**Deliverables:** Airline ops dashboard and improvement list.

**Difficulty:** Advanced
**Estimated time:** 6–10 days

## 27. Product Review & Sentiment Dashboard

**Objective:** Combine product review text with ratings to analyze sentiment and product issues.

**Datasets:** Product reviews (text), ratings, product metadata.

**Skills learned:** Sentiment scores (precompute externally), text aggregation, tag clouds.

**Implementation steps:**

- Preprocess reviews and compute sentiment scores using Python/R.
- Import sentiment results and aggregate by product/category.
- Visualize top positive/negative themes and timeline of sentiment.

**Deliverables:** Product sentiment dashboard with improvement suggestions.

**Difficulty:** Advanced (text analytics externally)
**Estimated time:** 6–10 days

## 28. Manufacturing Quality Control Dashboard

**Objective:** Monitor defect rates, yield by production line, and root cause analysis.

**Datasets:** Production batches, defect logs, machine downtime records.

**Skills learned:** Pareto analysis, control charts (basic), downtime impact.

**Implementation steps:**

- Compute defect rates by product and line.
- Visualize top defect categories and trend over time.
- Add root cause filters and downtime correlation.

**Deliverables:** Quality dashboard with prioritized action items.

**Difficulty:** Intermediate → Advanced
**Estimated time:** 5–9 days

## 29. Personal Finance and Budget Tracker

**Objective:** Build a personal monthly budget dashboard with spend categories, cashflow and savings goals.

**Datasets:** Personal transactions (bank/credit card CSV), budget categories.

**Skills learned:** Data cleaning, categorization, dynamic slicers, goal tracking.

**Implementation steps:**

- Import transactions, classify categories, build monthly aggregates.
- Create visuals for spend vs budget and savings progress.
- Add alerts for overspending using conditional formatting.

**Deliverables:** Personal finance dashboard and monthly summary PDF.

**Difficulty:** Beginner
**Estimated time:** 1–3 days

## 30. Environmental Air Quality & Pollution Dashboard

**Objective:** Track air quality index (AQI), pollutant concentrations and trends for cities/regions.

**Datasets:** Open AQ datasets or government monitoring station data.

**Skills learned:** Time region comparisons, per-capita normalization, multi-metric dashboards.

**Implementation steps:**

- Import pollutant readings (PM2.5, NO2, O3) and compute AQI if needed.

- Visualize city comparisons, trendlines, and exceedance counts.
- Add health advisory notes and seasonal patterns.

**Deliverables:** AQI monitoring report and hotspot maps.

**Difficulty:** Intermediate
**Estimated time:** 4–6 days

# How to choose the right project for you

1. **Beginner:** Start with dashboards that use clean, structured CSVs (sales dashboard, student performance, personal finance).
2. **Intermediate:** Try projects that need joins, time intelligence, and moderate DAX (inventory, HR analytics, SEO).
3. **Advanced:** Combine external analytics or ML outputs, geospatial mapping, or custom visuals (churn prediction, supply chain, market basket).

Pick a topic you find interesting — you'll finish faster and learn more if the subject keeps you motivated.

Must Read: 29+ Cloud Computing Project Ideas 2026-27

# Outro

You now have **30 practical bi power Project Ideas** tailored for students, each with clear objectives, data sources, skills to learn, and step-by-step guidance.

Start with one that matches your current level, finish it end-to-end (dataset → model → visuals → insights), and document your work. A completed, well-documented Power BI project is one of the strongest pieces you can show in a portfolio or university project submission.

Blog, Project Ideas

**JOHN DEAR**

I am a creative professional with over 5 years of experience in coming up with project ideas. I'm great at brainstorming, doing market research, and analyzing what's possible to develop innovative and impactful projects. I also excel in collaborating with teams, managing project timelines, and ensuring that every idea turns into a successful outcome. Let's work together to make your next project a success!

**Genius Hour Project Ideas 5th Grade — 30 Creative Projects Students Can Do**

# Best Project Ideas

Are you ready to make your big ideas happen? Let's connect and discuss how we can bring your vision to life. Together, we can create amazing results and turn your dreams into reality.

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