Best Project Ideas

Top 20 Data Analytics Project Ideas 2026-27

FEBRUARY 16, 2026 | **JOHN DEAR**
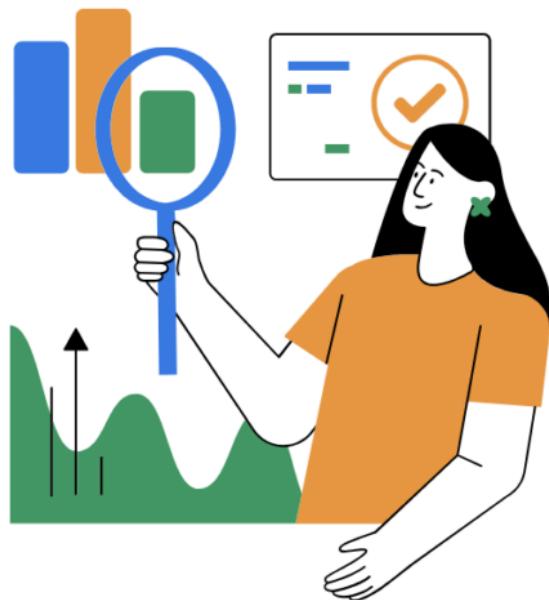
Data is all around us — in school records, phone apps, weather reports, sports scores, and even the food we eat. Data analytics is the process of looking at that data, finding patterns, and using what you learn to answer questions or solve problems.

If you are a student or a beginner who wants to learn data analytics, doing projects is the best way to practice. Projects let you use tools, think logically, tell a story with

data, and build something you can show to teachers or add to a portfolio.

This article gives you clear, easy-to-follow **Data Analytics Project ideas** designed for students. Each project includes the goal, the tools you can use, where to find data, step-by-step actions, things to show in your report, and ways to extend the project if you want to go further.

There are 15 detailed project ideas below — chosen to be interesting, practical, and doable with free tools and publicly available data. Read the intro, pick a project that excites you, and follow the steps.

By the end you will have learned how to clean data, make charts, do simple models, and explain results — the key skills of a data analyst.

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How to pick a good Data Analytics Project

Before the ideas, here are simple tips to choose the right project:

- **Pick something you care about.** It will keep you motivated.
- **Start small.** A clear question with limited data is better than a huge vague idea.
- **Use public datasets.** Sites like Kaggle, UCI Machine Learning Repository, government open-data portals, or your school records are great sources.
- **Decide on tools.** Beginners can use Excel or Google Sheets. Next step is Python (pandas, matplotlib, seaborn) or R.
- **Plan your steps.** Typical flow: Question → Data → Clean → Explore → Model/Analyze → Visualize → Report.
- **Keep it simple to present.** A few clear charts and a short conclusion beat many confusing tables.

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15 Data Analytics Project Ideas 2026-27

Each project below is written so a student can follow and complete it step by step.

1. School Performance Analysis

Level: Beginner – Intermediate
Goal: Find patterns in student marks and suggest ways to improve performance.

Data sources: Your school's exam marks, attendance records; public datasets of student performance (Kaggle, UCI).

Steps:

1. **Ask a question.** Example: "Which subjects have the lowest average marks?" or "Does attendance affect final marks?"
2. **Collect data.** Get marks for each student, attendance percentage, gender, and class.
3. **Clean data.** Remove missing entries, correct mis-typed values, convert grades to numeric if needed.
4. **Explore with charts.** Use histograms for marks, boxplots to see subject spread, scatter plot attendance vs. marks.
5. **Calculate summaries.** Average marks per subject, pass rates, and correlation between attendance and score.
6. **Draw conclusions.** Example: "Students with >85% attendance scored 10% higher on average."
7. **Present recommendations.** Suggest focused revision for weak subjects or attendance drives.

What to include in the report:

- Question and dataset summary.
- Top charts (subject-wise averages, attendance effect).
- Short conclusions and 2–3 recommendations.

Extensions: Build a simple prediction model (linear regression) to estimate final marks from attendance and midterm scores.

2. Local Weather Pattern Study

Level: Beginner – Intermediate
Goal: Understand how temperature and rainfall change over months and years.

Data sources: National weather services, World Bank climate data, or local meteorological data portals.

Steps:

1. **Choose location and period.** Example: city weather for last 10 years.
2. **Collect daily or monthly temperature and rainfall data.**
3. **Clean data.** Fill small gaps with averages, remove impossible values.
4. **Plot time series.** Show monthly average temperatures and yearly rainfall totals.
5. **Detect trends and seasons.** Use moving averages to highlight trends and seasonal cycles.
6. **Calculate extremes.** Find the hottest/coldest months and maximum rainfall events.
7. **Interpretation.** Discuss whether temperature is increasing, and mention seasonal patterns.

What to include in the report:

- Time series charts, seasonal plots, and a small table of extremes.

Extensions: Try forecasting next month's average temperature using simple moving average or basic ARIMA (for advanced students).

3. Movie Ratings and Recommendation (Basic)

Level: Intermediate
Goal: Analyze movie ratings and suggest similar movies for a user.

Data sources: MovieLens dataset (popular for students), IMDb public data extracts.

Steps:

1. **Define a task.** Example: "Which movies are top-rated for kids aged 13–18?"
2. **Load ratings and movie metadata (genre, year).**
3. **Clean and merge datasets.**
4. **Explore popular genres and top-rated movies.**
5. **Create a simple recommendation method.** For example, recommend movies of same genre with high average rating and enough votes.
6. **Build a demo.** Let user input a movie and return 3 similar movies.

What to include in the report:

- Top 10 lists (overall and by genre), explanation of recommendation logic, and sample recommendations.

Extensions: Implement collaborative filtering (user-based or item-based) with Python libraries if you want to learn algorithms.

4. Sales Analysis for a Small Shop

Level: Beginner – Intermediate
Goal: Find best-selling items, slow-moving stock, and seasonal sales patterns.

Data sources: Sample retail sales data, or simulated data you create.

Steps:

1. **Ask questions.** Which products sell best? Which months are peak sales?
2. **Collect data.** Date, product ID, quantity, price, category, store location.
3. **Aggregate sales.** Compute total revenue by product and by month.
4. **Visualize.** Bar charts for top products, line charts for monthly revenue.
5. **Key metrics.** Average transaction value, stock turnover rate.
6. **Recommendations.** Stock more of best-sellers, run promotions in slow months.

What to include:

- Top products table, trend charts, and a 1-page action plan.

Extensions: Build a dashboard in Google Data Studio or Tableau Public.

5. Traffic and Road Safety Analysis

Level: Intermediate

Goal: Analyze accident data to find dangerous roads or times of day and suggest improvements.

Data sources: Local police open data, national traffic datasets.

Steps:

1. **Define scope.** Choose a city or road segment and a time period.
2. **Collect data.** Records with date, time, location, accident severity, vehicle types.
3. **Clean data.** Geocode location if necessary; filter incomplete records.
4. **Analyze patterns.** Hour-of-day and day-of-week patterns, hotspots by location.
5. **Map hotspots.** Use simple maps to show clusters of accidents.
6. **Recommendations.** Add signage, better street lights, or speed enforcement at hotspots.

What to include:

- Heatmap or list of top hotspots, charts for times of day, and safety suggestions.

Extensions: Use clustering (e.g., K-means) to identify accident clusters.

6. Air Quality and Health Correlation

Level: Intermediate

Goal: Study how air quality index (AQI) varies and whether it relates to hospital visits for breathing issues.

Data sources: Government AQI data, public health records (if available), WHO datasets.

Steps:

1. **Select city and time window.**
2. **Collect AQI and health visit counts by day or month.**
3. **Clean and align date formats.**
4. **Explore correlation.** Plot AQI and health visits side by side, compute correlation coefficient.
5. **Look for lag effects.** Sometimes poor air today shows up in hospital visits a day or two later.
6. **Conclude carefully.** Correlation does not mean causation—explain limits.

What to include:

- Time series comparisons, correlation results, short discussion of limitations and public health suggestions.

Extensions: Use regression to predict health visits from AQI and weather variables.

7. Customer Churn Analysis (Subscription Service)

Level: Intermediate – Advanced
Goal: Predict which customers might stop using a service and why.

Data sources: Simulated subscription data or open churn datasets.

Steps:

1. **Define churn.** For example, a customer inactive for 30 days.

2. **Collect data.** Customer demographics, usage metrics, support tickets, last login date.
3. **Feature engineering.** Create features like average monthly usage, number of complaints.
4. **Modeling.** Use logistic regression or decision trees to predict churn.
5. **Evaluate model.** Use accuracy, precision, recall, and confusion matrix.
6. **Action plan.** List interventions like targeted offers for high-risk customers.

What to include:

- Model summary, top factors that increase churn risk, and suggested retention strategies.

Extensions: Build a dashboard to monitor churn risk in real time.

8. Sports Performance Analytics (e.g., Cricket or Football)

Level: Beginner – Intermediate
Goal: Analyze player and team performance to find strengths and weaknesses.

Data sources: Public sports statistics (ESPN, sport-specific datasets), Kaggle sports datasets.

Steps:

1. **Pick sport and metrics.** For cricket: batting average, strike rate; for football: goals, assists.
2. **Gather match and player-level data.**
3. **Compute performance metrics.**
4. **Compare players and teams.** Use radar charts or bar charts to compare attributes.
5. **Find patterns.** E.g., players who perform better at home or in certain weather.
6. **Present insights.** Suggest training focus or player selection ideas.

What to include:

- Player ranking tables, visual comparisons, and short recommendations.

Extensions: Create predictive models for match outcomes using team stats.

9. E-commerce Recommendation and Analysis

Level: Intermediate – Advanced
Goal: Recommend products and analyze buying patterns on an online store.

Data sources: E-commerce sample datasets on Kaggle, or simulated purchase logs.

Steps:

1. **Define business goal.** Increase cross-sell and average order value.
2. **Collect transaction logs.**
3. **Explore purchase patterns.** Most frequent item pairs, seasonal products.
4. **Association rules.** Use Apriori algorithm to find items often bought together.
5. **Simple recommender.** Show "Customers also bought" using association rules.
6. **Measure impact.** Track click-through and conversion rates in a demo.

What to include:

- Association rules list, sample recommendations, and an explanation of how it helps sales.

Extensions: Implement matrix factorization for personalized recommendations.

10. Social Media Sentiment Analysis

Level: Intermediate – Advanced
Goal: Analyze public opinion about a product, event, or personality using tweets or posts.

Data sources: Twitter API (if available), public social media datasets.

Steps:

1. **Define the topic and collect posts.** Use keywords or hashtags.
2. **Clean text.** Remove URLs, punctuation, and stop words.
3. **Label sentiments.** Use a simple sentiment library or manual labeling for a small set.
4. **Analyze trends.** Daily sentiment score and top positive/negative words.
5. **Visualize.** Line charts of sentiment over time and word clouds.
6. **Conclusions.** Report whether public opinion is improving or worsening and why.

What to include:

- Sentiment over time chart, sample positive and negative posts, and suggested actions for businesses.

Extensions: Build a topic model (LDA) to find themes in posts.

11. Stock Price Exploratory Analysis (Basic)

Level: Beginner – Intermediate
Goal: Explore stock price movements and basic indicators.

Data sources: Public stock data (Yahoo Finance via tools), or sample datasets.

Steps:

1. **Choose a stock and time range.**
2. **Collect daily prices (open, high, low, close, volume).**
3. **Plot closing prices and returns.**
4. **Calculate moving averages and RSI for practice.**
5. **Analyze volatility.** Show periods with high price swings.
6. **Explain findings carefully.** Emphasize this is not investment advice.

What to include:

- Price charts, moving average comparison, and volatility discussion.

Extensions: Try a simple strategy backtest (e.g., buy when short MA crosses above long MA).

12. Public Transport Usage Study

Level: Beginner – Intermediate
Goal: Analyze ridership patterns and suggest improvements to schedules or routes.

Data sources: Local transit authority open data, or create a simulated dataset.

Steps:

1. **Collect ridership counts by route and time.**
2. **Find peak hours and under-used routes.**
3. **Visualize with heatmaps (time vs route).**
4. **Identify inefficiencies.** E.g., buses running half-empty during some hours.
5. **Recommend changes.** Adjust frequency or reroute to match demand.

What to include:

- Heatmap, top busy times, and suggested schedule changes.

Extensions: Optimize schedules by balancing coverage and efficiency.

13. Energy Consumption and Cost Saving

Level: Intermediate
Goal: Analyze household or school energy use and propose ways to reduce bills.

Data sources: Smart-meter data from public challenges, simulated datasets.

Steps:

1. **Collect hourly/daily energy usage.**
2. **Plot daily and weekly patterns.**
3. **Identify high-usage appliances/time slots.**
4. **Estimate cost savings through behavior change (e.g., shift usage to off-peak).**
5. **Show possible reductions in percentage or currency.**

What to include:

- Usage graphs, cost estimates, and a practical plan for saving energy.

Extensions: Recommend a smart scheduling plan or automation to reduce peak demand.

14. Crime Data Mapping and Analysis

Level: Intermediate
Goal: Map crime incidents to find safer and riskier areas and times.

Data sources: City police open data portals.

Steps:

1. **Collect crime reports with location, type, and time.**
2. **Clean data and standardize crime categories.**
3. **Map incidents to neighborhoods.**
4. **Find trends by time of day and day of week.**
5. **Provide safety advice based on patterns.**

What to include:

- Crime hotspot map, time trends, and simple prevention suggestions.

Extensions: Analyze effects of events (like festivals) on crime rates.

15. Agricultural Yield Prediction (Simple)

Level: Intermediate – Advanced

Goal: Analyze weather and soil factors to predict crop yield for a small farm.

Data sources: Public agricultural datasets, local extension service records.

Steps:

1. **Select crop and region.**
2. **Collect historical yields, rainfall, temperature, and soil data.**
3. **Clean and merge datasets by year/season.**
4. **Explore relationships (scatter plots, correlations).**
5. **Build a simple regression model to predict yield from rainfall and temperature.**
6. **Interpret results and suggest farming practices for improvement.**

What to include:

- Scatter plots, model summary, and practical farming suggestions.

Extensions: Use more features (fertilizer, planting dates) for better predictions.

How to write your project report (simple and clean)

Structure your report so others can read it quickly:

1. **Title and author.**
2. **Short introduction.** What question did you ask and why?
3. **Data description.** Where data came from and what fields mean.
4. **Methods.** Steps you took (cleaning, tools, analysis).
5. **Key results.** Use 3–6 clear charts/tables.
6. **Conclusions and recommendations.**
7. **Limitations.** Be honest about what you could not do.
8. **Extensions and next steps.**

Keep each section short and use bullet points for clarity. Teachers and judges like clear visuals with short captions.

Tools a student can use (easy list)

- **Google Sheets or Excel:** Good for beginners for tables and charts.
- **Python (pandas, matplotlib, seaborn):** Learn basics to handle larger datasets.
- **Jupyter Notebook:** Great for mixing code and notes.
- **PowerPoint or Google Slides:** For final presentations.
- **Tableau Public or Google Data Studio:** For dashboards and interactive visuals.
- **Kaggle Kernels:** Practice running notebooks without installing anything.

Common beginner mistakes and how to avoid them

- **Ignoring data cleaning.** Always clean data first — bad data gives bad results.
- **Overcomplicating with fancy models.** Start with charts and simple summary statistics.
- **Forgetting to explain charts.** Every chart needs a title and 1-sentence takeaway.
- **Confusing correlation with causation.** Correlation suggests a link, not a cause.
- **Not saving your work.** Keep code, data, and a short readme for reproducibility.

Must Read: 20 PHP Project Ideas

Conclusion

These **Data Analytics Project ideas** give you a practical path from asking a question to presenting findings. Pick one that excites you — maybe improving school attendance, analyzing local weather patterns, or making movie recommendations.

Start small, follow the steps, and focus on clear visuals and honest conclusions. With each project you complete, you will grow more confident with data cleaning, charts, and basic modeling.

Most importantly, you will learn to use data to answer questions and make better decisions — a powerful skill for school projects and future careers.

📁 Blog

J O H N   D E A R

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!

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Best Project Ideas

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