JX3 Updates Trends

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This project analyzes historical update patterns of the MMORPG game JX3 (Jianwang 3). This project focuses on update frequency and patterns of updates. By scraping update information from the official JX3 website, this project studies how often the updates packages occur.

Primary Source:
JX3 official update API endpoints provided by Xoyo

https://jx3.xoyo.com/patch/
https://zt.xoyo.com/other/updatepage/index.php

The APIs return structured JSON and HTML data for individual update packages, including update timestamps, version identifiers, and download links.
All data collection was conducted using Python's request library.

The final dataset contains 5,518 update package records and in time range from September 2018 to June 2022.

Raw JSON data was downloaded from the official update APIs and stored in the data/raw/ path.

Things scraped are:

- Update timestamp
- Version or package identifier
- Download metadata

Records with missing or invalid timestamps were removed.

The analysis focuses on identifying temporal patterns in update activity rather than package size, as the available API fields primarily represent package-level metadata. The following analyses were conducted:

- Update Frequency Analysis:
  The number of update packages released per month was calculated to identify

periods of high and low update activity.

- Update Interval Analysis:
  The time gap (in days) between consecutive update packages was computed to examine maintenance regularity and detect unusually long inactive periods.

Because multiple update packages are often released during a single update event, many updates share the same timestamp.

Two visualizations were generated:

- Monthly Update Frequency Trend
  - A time-series line chart showing the number of update packages released each month
- Update Interval Trend
  - A line chart showing the number of days between consecutive update packages, making periods of extended inactivity clearly visible.

All visualizations were generated using Python's matplotlib library and saved in the results/ directory.

Initial Approach/Hypothesis:
The project began with the assumption that update activity in JX3 follows identifiable patterns in maintenance gaps and major updates has a specific pattern.

Changes from Original Proposal:
The original proposal is trying to analyze update package sizes to distinguish between major and minor updates. However, during data downloading and cleaning process, it was difficult to scrape the available API fields between the whole game package size and true update package sizes.
As a result, the project was adjusted to focus on update frequency and temporal patterns, which are more stable supported by the data. This change improved data accuracy and aligned the analysis with the actual structure of the available information.

Future direction of this project could include:

- Combing update packages with maintenance announcement for higher-level analysis.

- Combining update data with patch note text to analyze content changes using natural language processing.

- Comparing update patterns with different MMORPG games to identify industry-wide trends. (such as profit of games vs. update frequency)