EUROPE DISCOVERY SUMMIT
EXPLORING DATA INSPIRING INNOVATION

Automated and Interactive Analysis of JMP® Crash Data

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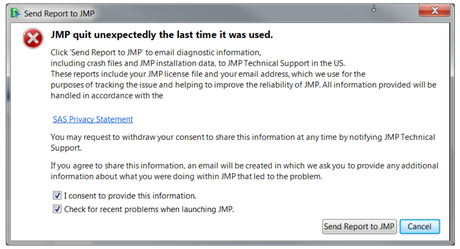
JMP, SAS

jmp Statistical Discovery.™ From SAS.

Abstract

The JMP team, like many of our customers, is simultaneously engaged in building new product versions and analyzing problem reports from production releases. Customer bug and crash reports provide precious insights into our customers' experience of JMP product quality. JMP began prompting customers to email Mac crash reports in JMP 12 and added built-in support for emailing Windows crash reports in JMP 13. We store internally and externally reported crash data in a SQL server database. Technical support and development collaborate to identify, investigate, and fix unsolved customer crashes. The process starts when a new crash report is emailed to JMP technical support, processed and automatically compared with previous reports to identify it as novel or related to a known issue. Known details about the crash are sent back to the track. The JMP crash database updates hourly, so I automate the refresh of my crash investigation environment using a JSL script. My script runs queries generated by JMP's database Query Builder, calls various table manipulation tools like Split and Summarize, and embeds key scripts in tables . All imported and derived data tables open as tabs inside a JMP 14 Project. I use my crash data project to investigate newly reported crashes and identify unsolved crash groups for further investigation by JMP development.



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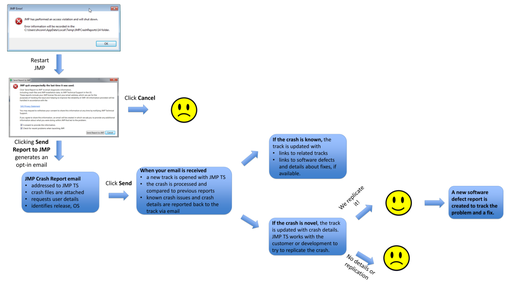
Objectives

- Automated packaging, processing, and storage of JMP crash reports from internal and external sources
- Quick refresh of tables generated from crash databases queries and table operations in JMP
- Organization of tables and graphs in a JMP 14 project
- Investigation of new and as-yet-unsolved crashes
- Improvement in JMP's stability release to release.

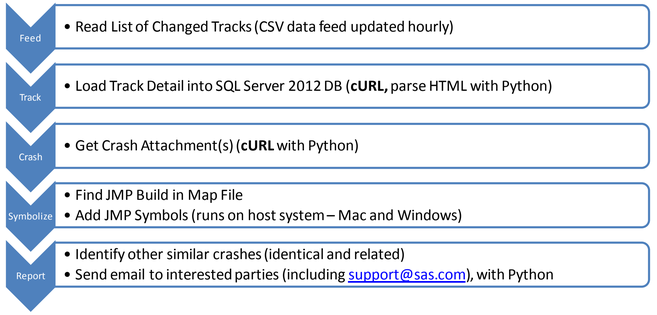
Crash Reporting

- After JMP exits unexpectedly, customers are prompted to send details back to the JMP team via JMP tech support.
- Mac customers send .crash files, while Windows customers send zipped .jer and .dmp files that developers use to help debug the problem.
- Customers are asked to provide details about the actions that preceded the crash and replication steps, if available.
- If a "mystery crash" can not be replicated initially, later reports may shed light on how to solve the problem.
- When a crash can be replicated, a defect is opened and addressed in the next available JMP release.
- Though some crashes can be solved using just crash files, customer notes often provide critical clues and test case scenarios for replication and fix verification.



Crash File Processing

- The JMP DevOps team maintains an automated crash analysis pipeline in collaboration with JMP Technical Support.
- Technical Support provides a CSV file listing new and updated JMP tracks hourly.
- A scheduled task retrieves track details and saves them in a SQL Server database schema.
- Crash attachments are identified by file extension and name, then processed by host-specific programs (Mac or Win).
- New crashes are screened to identify high-scoring matches to existing tracks and software defects.
- Crashes are emailed back to the track, usually within an hour.
- Newly entered software defects are attached to tracks and added to the database.
- JMP testers, developers, and other internal JMP users send their crash reports through the screening system.



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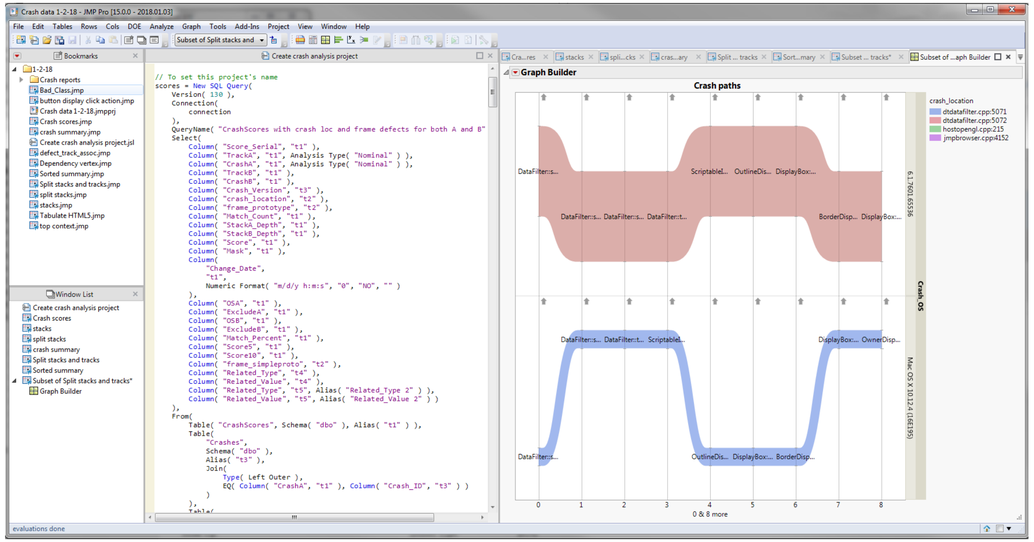
Key Features for Crash Analysis

- I use a **JMP 14 project** to contain and organize various tables and graphs for crash data.
- I create a master **JSL script** to automate updates to my crash data exploration project.
- I use JMP's point-and-click **database Query Builder** to select and join tables and choose columns from the crash database, and copied the script into my master script.
- I use JMP 14's new **Event Handler column property** to script the addition of live links to my table for 1-click opening of web pages for support tracks and software defect reports.
- I use JMP's **Tables menu** tools like Summarize to group similar crashes and defect reports.
- I embed **scripts in my data tables** to generate graphics for interesting subset tables-e.g., parallel plots of crash paths to explore operating system or release differences.



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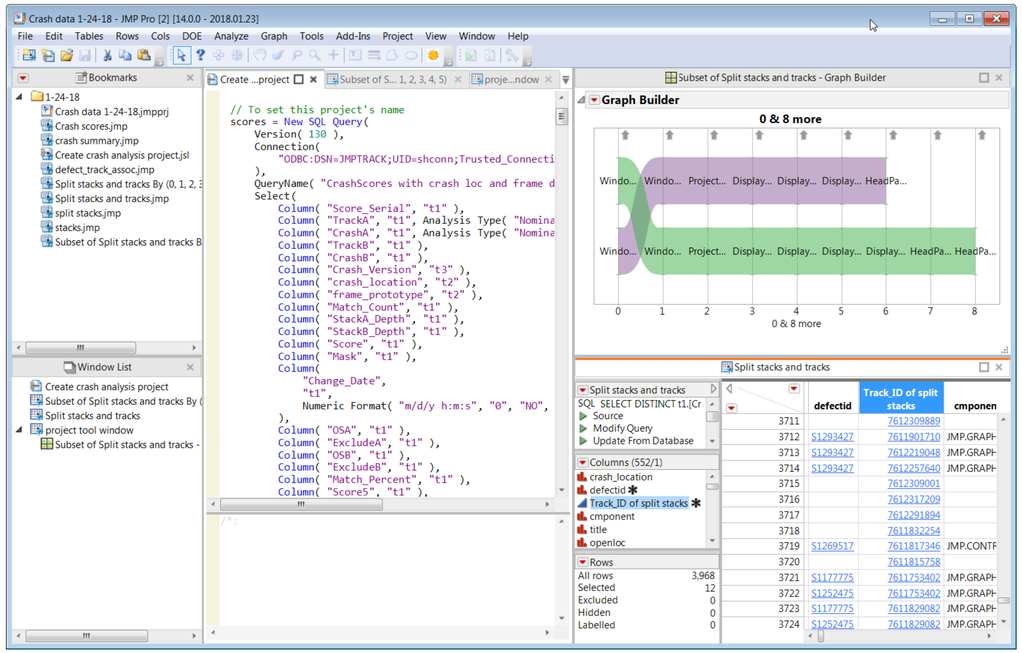
My Favorite JMP 14 Changes



JMP 14 projects: a drag and drop interface for organizing my JMP files and windows

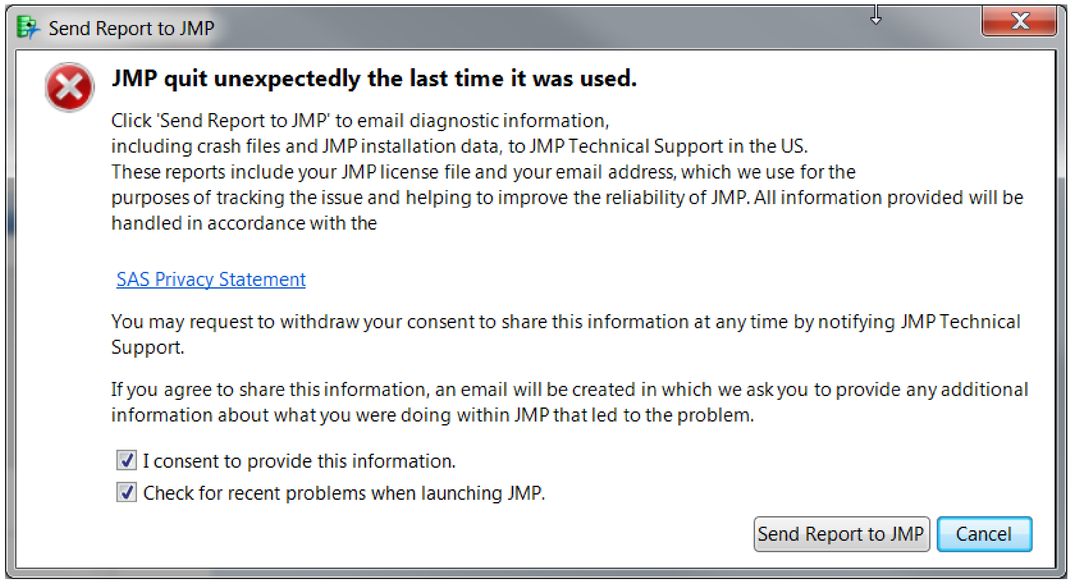
My favorite bug fix: gracefully truncated parallel plot labels

Event handler column property: embed scripts in data table cells. I embedded web links in my JMP tables!

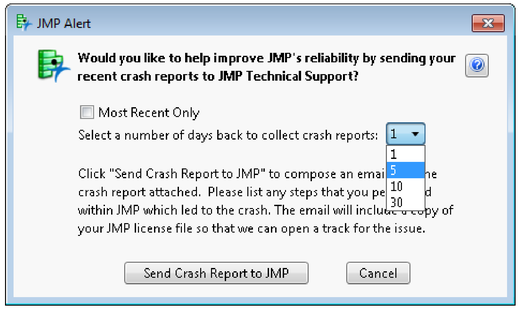
Please Send Your Crash Reports

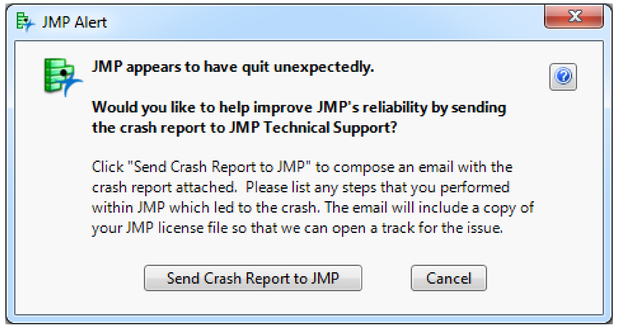
With the development of an automated pipeline for JMP crash reporting, we are now receiving more crash files from JMP customers than ever before. We are very grateful to you for providing important clues that help JMP Development solve more rare crashes and improve the stability of our product. It is especially useful if you can provide details about the steps you took in JMP prior to the crash. But even if you don't remember what you did or you don't have time to provide details, we are still interested in receiving your crash reports. It is always helpful to know if multiple customers have encountered a particular crash and we are actively reviewing unresolved mystery crashes in search of solutions. We greatly appreciate your help!

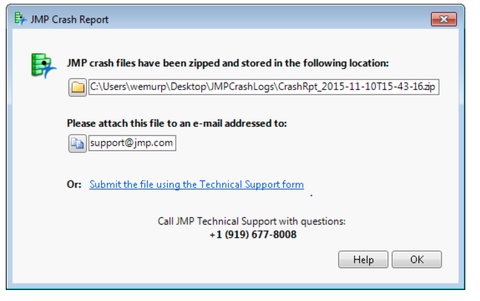
JMP 14 Crash Report Messages



A crash reporting add-in written by TS is available for Windows versions prior to 13 here: https://community.jmp.com/docs/DOC-6475







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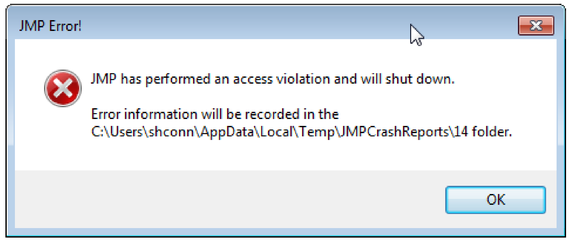
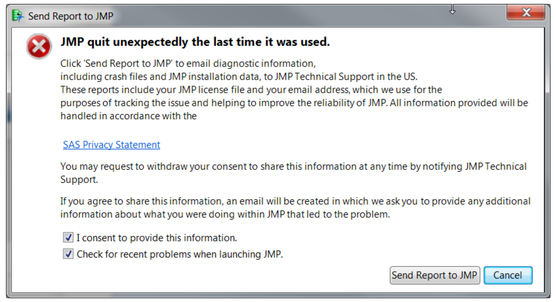
Crash Reporting



Restart JMP



Click **Cancel**

Clicking **Send Report to JMP** generates an opt-in email

JMP Crash Report email
- addressed to JMP TS
- crash files are attached
- requests user details
- identifies release, OS

Click **Send**

When your email is received
- a new track is opened with JMP TS
- the crash is processed and compared to previous reports
- known crash issues and crash details are reported back to the track via email

If the crash is known, the track is updated with
- links to related tracks
- links to software defects and details about fixes, if available.

If the crash is novel, the track is updated with crash details. JMP TS works with the customer or development to try to replicate the crash.

We replicate it!

A new software defect report is created to track the problem and a fix.

No details or replication

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Crash File Processing

Feed
- Read List of Changed Tracks (CSV data feed updated hourly)

Track
- Load Track Detail into SQL Server 2012 DB (**cURL,** parse HTML with Python)

Crash
- Get Crash Attachment(s) (**cURL** with Python)

Symbolize
- Find JMP Build in Map File
- Add JMP Symbols (runs on host system – Mac and Windows)

Report
- Identify other similar crashes (identical and related)
- Send email to interested parties (including support@sas.com), with Python

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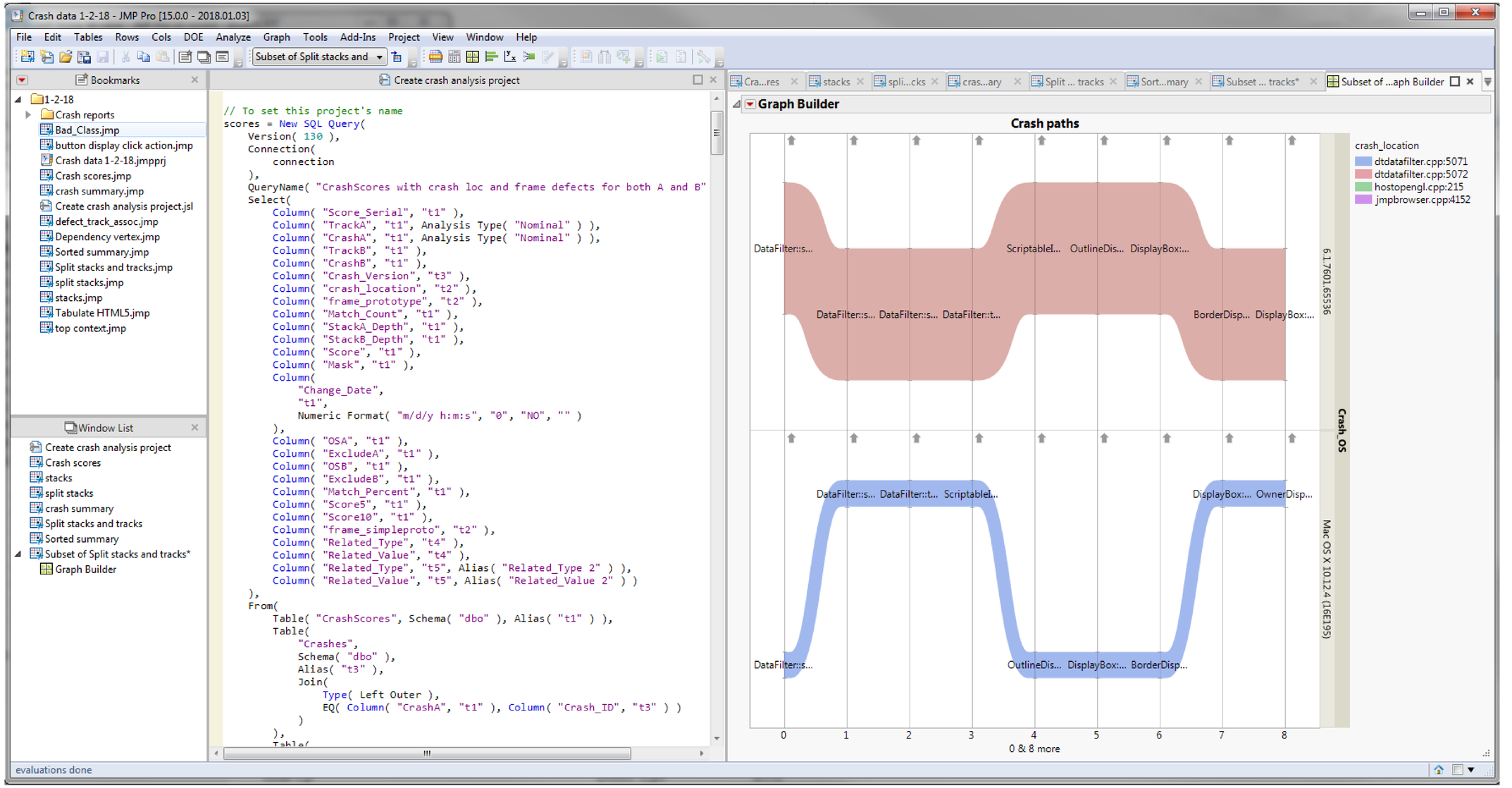
JMP 14 Crash Data Project



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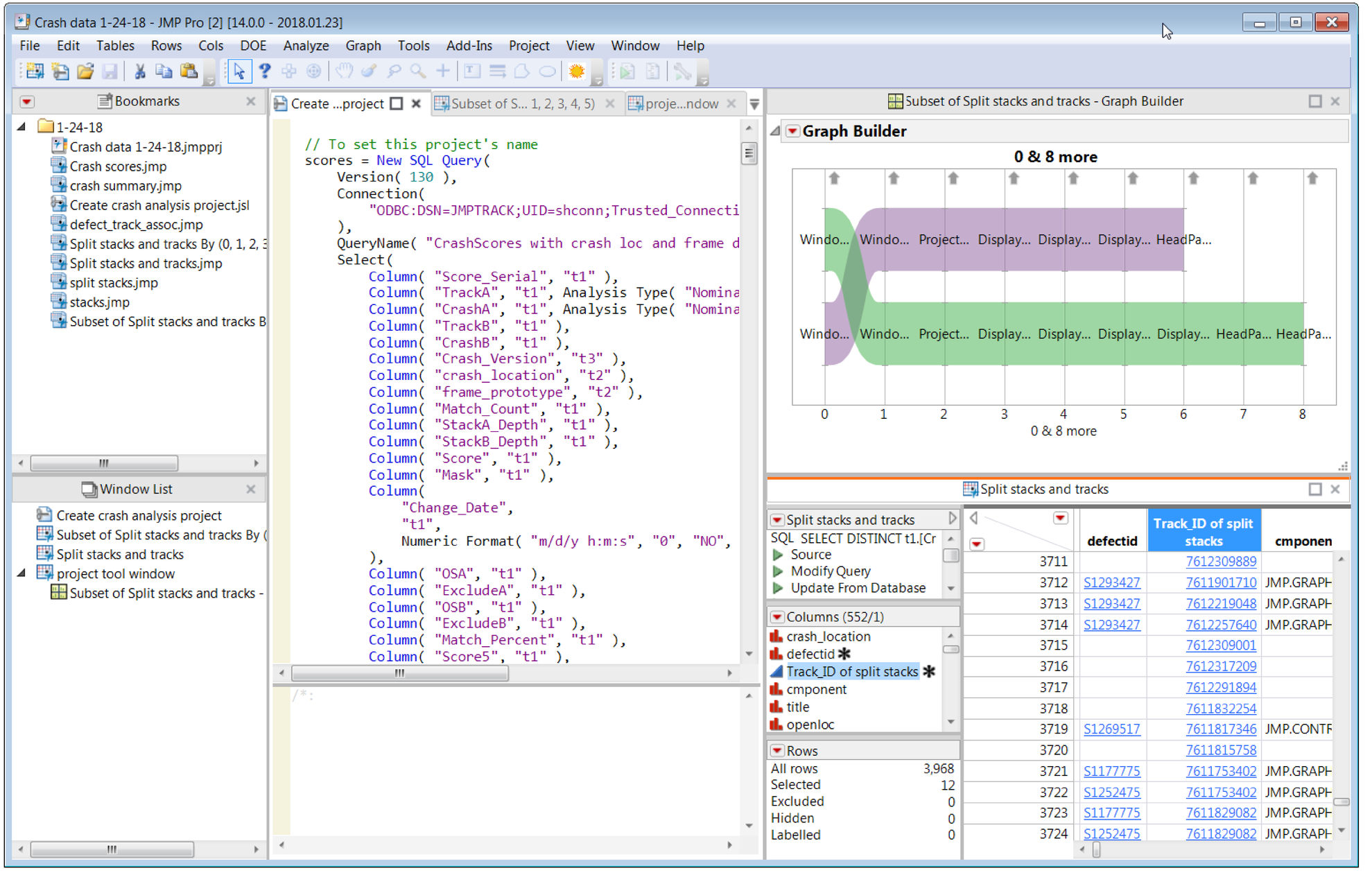

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