



Enhancing Clinical Data Analysis: The PROC GREPLAY Advantage

For PHUSE Connect EU 2025



Meet the Speaker



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Speaker: Kalyane Subramanian (Program Lead)

Organization: Zifo

Ms. Kalyane Subramanian is the Program Lead – Statistical Programmer at Zifo, with over five years of specialized experience in the clinical research field. She has led teams of 10+ professionals and successfully managed more than 35 clinical studies, demonstrating strong expertise in Functional Service Provider (FSP) engagements. Kalyane has collaborated with clients across the EU, US, and Japan, delivering high-quality outputs while meeting rigorous international regulatory requirements. Her strategic mindset, focus on process optimization, and commitment to innovation have been instrumental in achieving project milestones, enhancing team performance, and ensuring excellence in every delivery.

Agenda

- Challenges in Clinical Data Analysis
- Overview of PROC GREPLAY
- Implementation is SAS
- Core benefits
- Key features of PROC GREPLAY
- Limitations

ABSTRACT

In clinical trials, summarizing extensive data for each subject often results in dense, hard-to-review tables. Graphical representations offer clearer insights by displaying each subject's response separately, but individual graphs can lead to lengthy reports.

PROC GREPLAY in SAS addresses this by customizing graph layouts, allowing multiple graphs on a single page. This customization enhances the accessibility of findings, making them more effective for scientific publications, conference presentations, and stakeholder communications.

This method conserves space and improves the ability to compare responses between subjects or track changes within the same subject over time. By leveraging PROC GREPLAY, we can enhance data visualization and facilitate more efficient and effective analysis of clinical trial results. In this paper, we will discuss the application of PROC GREPLAY in SAS in detail, providing practical insights, challenges and best practices.

Challenges in Clinical Data Analysis

Dense tables
make
subject-level
data hard to
review

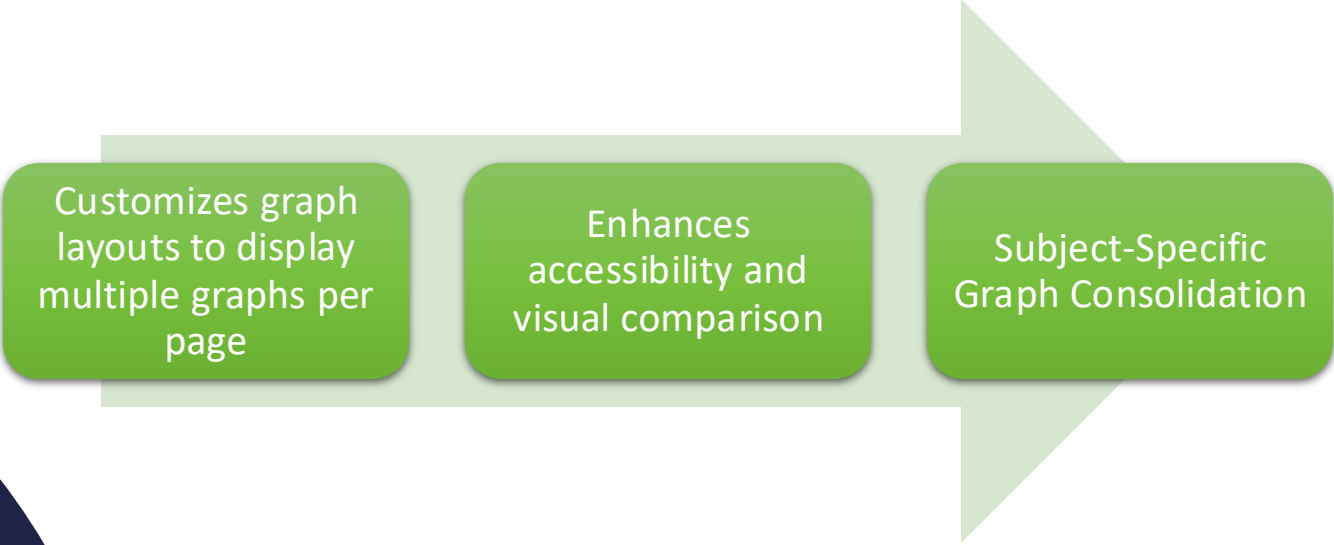
Individual
graphs
improve
clarity but
lead to
lengthy
reports

Scattered
graphs across
pages hinder
visual
comparison

Inconsistent
graphs layout
reduce
readability

Safety data in
tables is hard
to interpret
visually

Solution: PROC GREPLAY in SAS

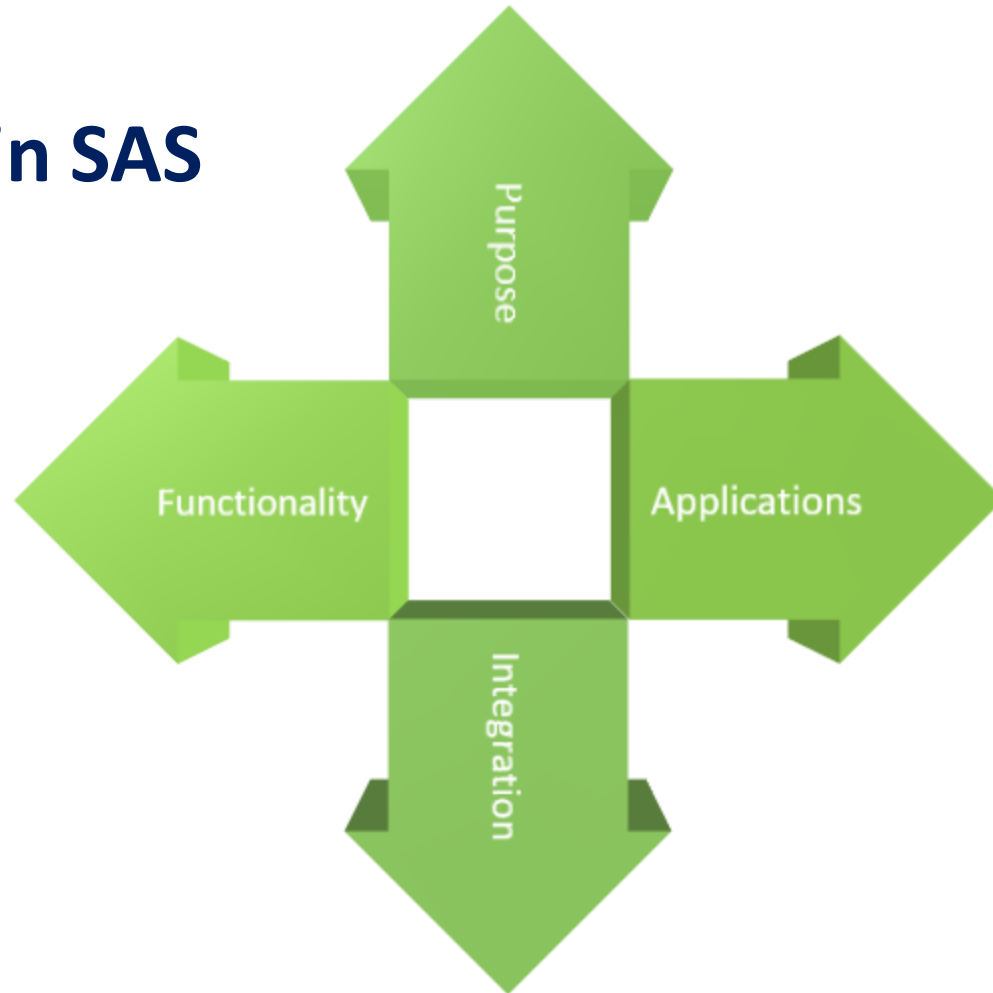


Customizes graph layouts to display multiple graphs per page

Enhances accessibility and visual comparison

Subject-Specific Graph Consolidation

Overview of PROC GREPLAY in SAS



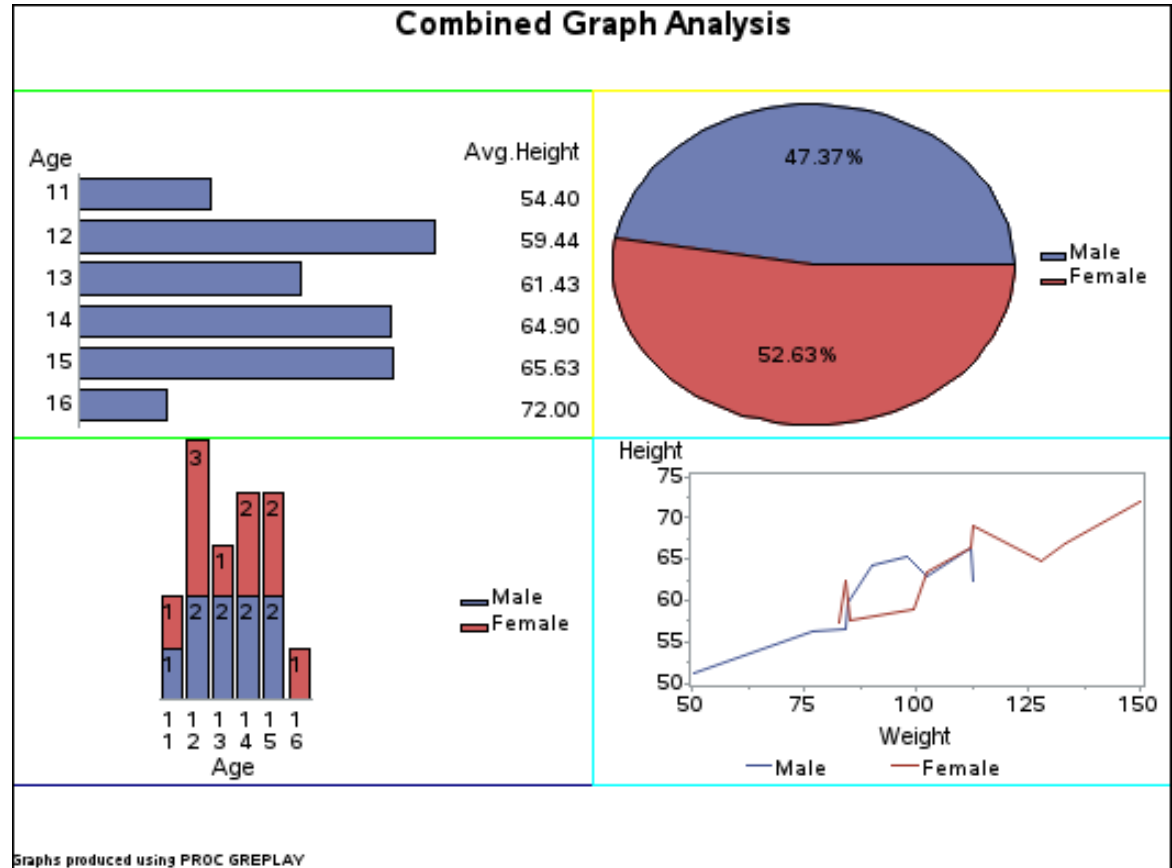
Displaying Multiple Graphs

Step 1 – Creating a Custom Template

Step 2 – Generating Individual Graphs

Step 3 – Creating a Title Slide

Step 4 – Replaying Graphs into Template



Step 1 – Creating a Custom Template

Procedure: PROC GREPLAY with TDEF Statement.

```
proc greplay tc=work.tempcat nofs;  
  tdef newtemp des="Five panel template"  
  /*Panel 1: Lower Left Quadrant*/  
  1/llx=0    lly=10  
    ulx=0    uly=50  
    urx=50   ury=50  
    lrx=50   lry=10  
    color=navy  
  /*Panel 2: Upper Left Quadrant*/  
  /*Panel 3: Upper Right Quadrant*/  
  /*Panel 4: Lower Right Quadrant*/  
  /*Panel 5: Container for Title and Panels 1-4*/  
quit;
```

The TDEF statement defines a template named NEWTEMP, and places it in the previously defined template catalog (where layout templates are stored). The four panels are small and equal in size. The fifth panel is a larger, full-size panel that can be used to display a common title or footnote for the entire template.

Step 2 – Generating Individual Graphs

Vertical Bar Chart: Frequency of age by gender

Horizontal Bar Chart: Average height by age

Pie Chart: Gender distribution

Scatter Plot: Height vs. Weight by gender

Step 3 – Creating a Title Slide

Procedure: PROC GSLIDE

```
proc gslide gout = set.excat;  
    title1 h=2 justify=center "Combined Graph Analysis" ;  
    footnote1 h=1 justify=left "Graphs produced using PROC GREPLAY";  
run;
```

PROC GSLIDE is used to add a common title or footnote that spans the entire page.

Step 4 – Replaying Graphs into Template

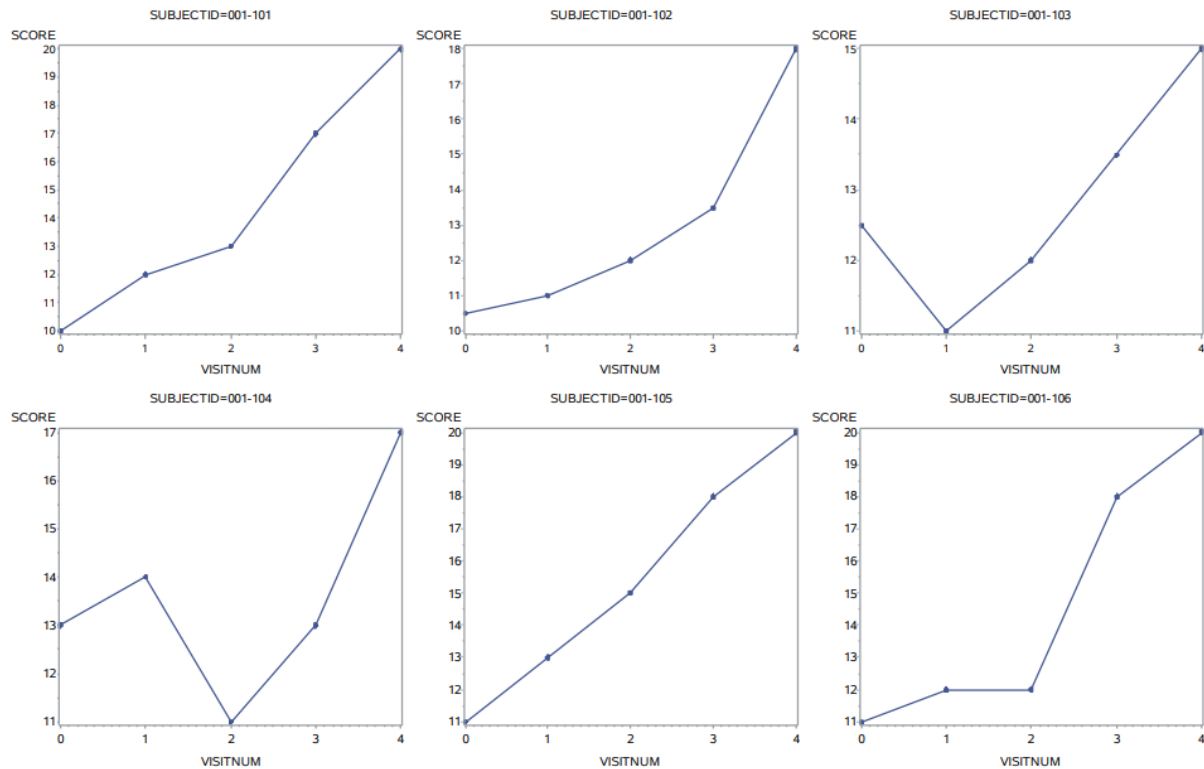
Procedure: PROC GREPLAY with TREPLAY Statement

```
proc greplay gout = new igout=set.excat nofs  
    tc=tempcat template = newtemp;  
    treplay 1:gchart 2:gchart1 3:gchart2 4:gplot 5:gslide;  
quit;
```

PROC GREPLAY with TREPLAY is used to assign each graph to a panel in the template.

Subject-Specific Graph Consolidation

subjects score upto week 4

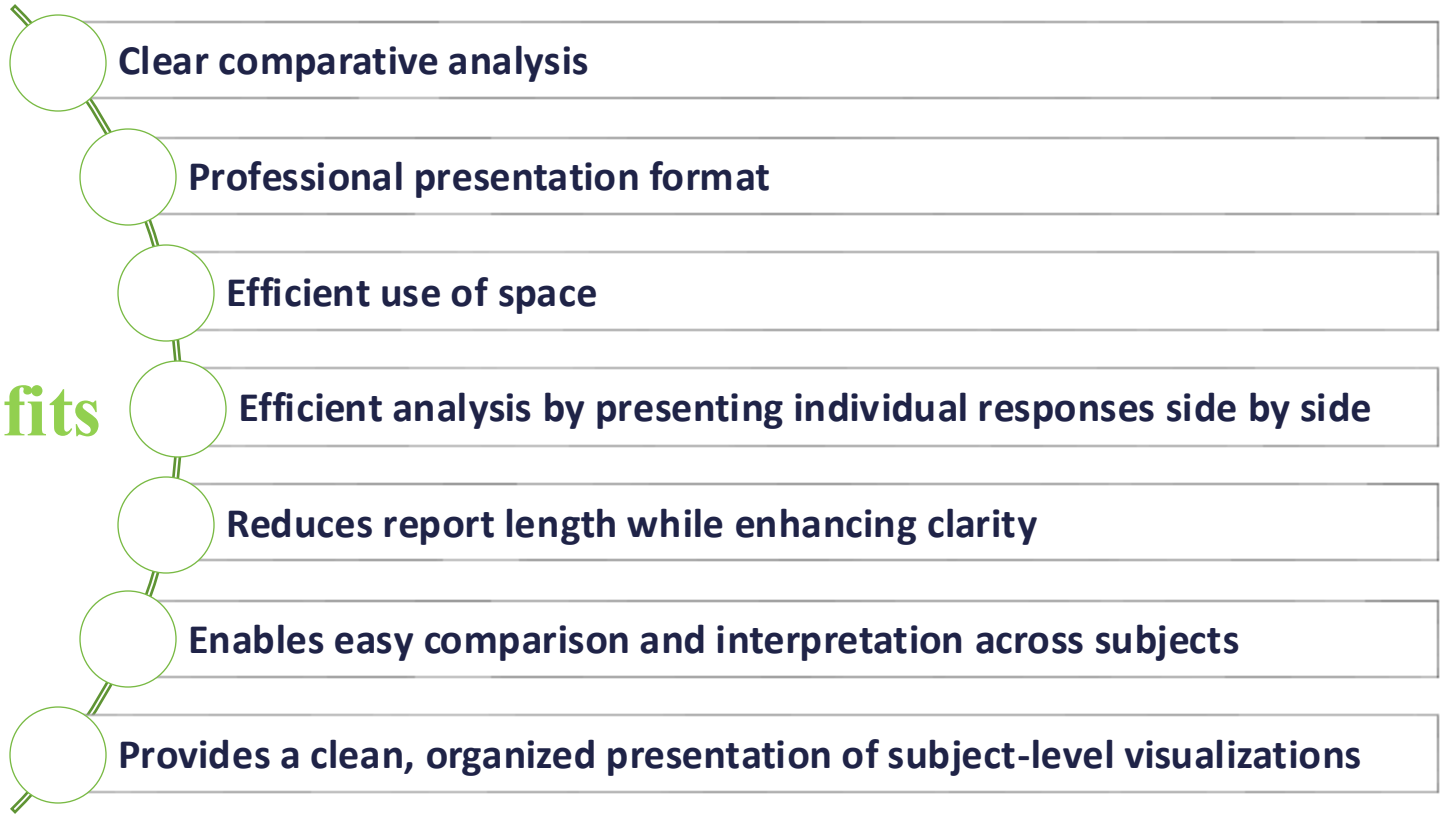


Week

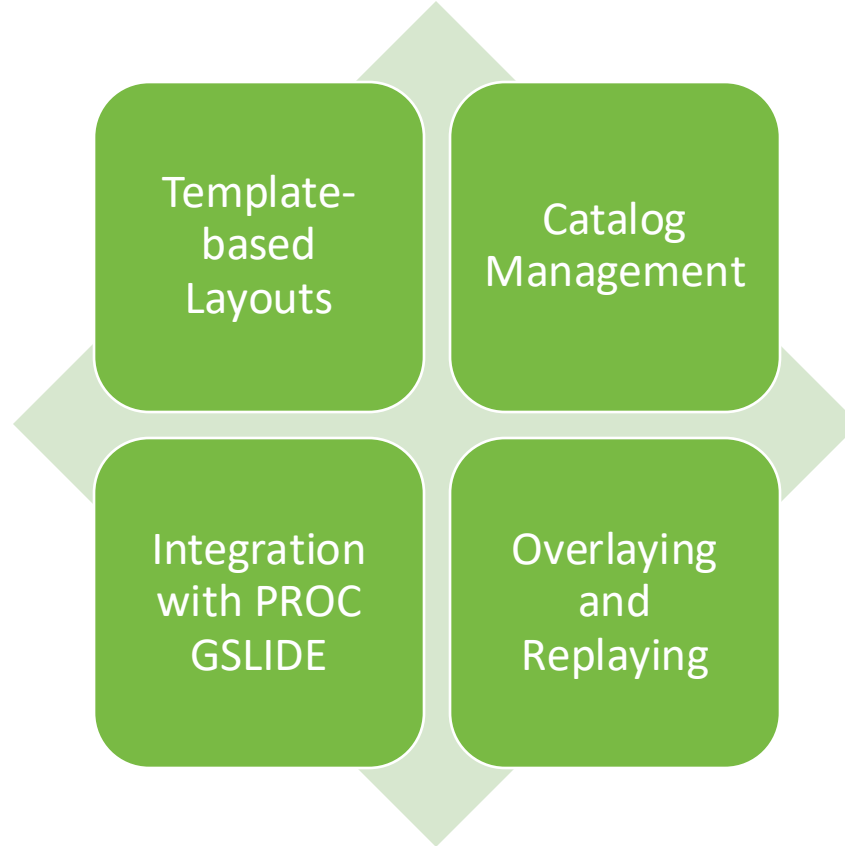
Use Case in Focus



Core Benefits



Key Features of PROC GREPLAY



Limitations of PROC GREPLAY

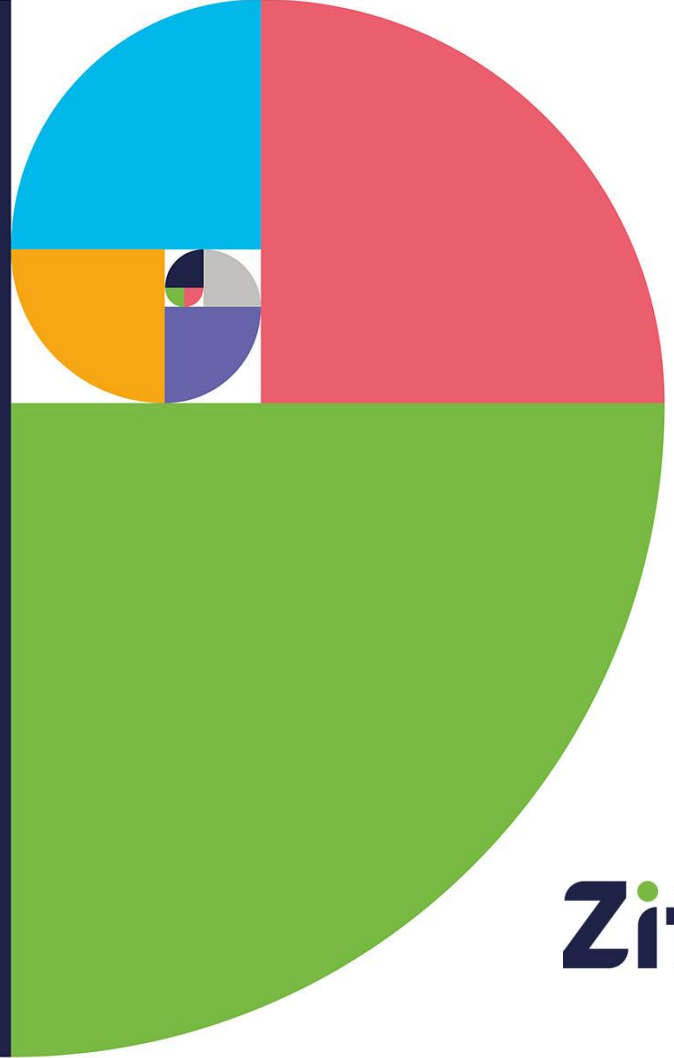
Complex Template Design

Static Output

Styling Constraints

Steep Learning Curve

Thank You



Zifo.