

Enhance your Coding Experience with the SAS Extension for VS Code

Jim Box

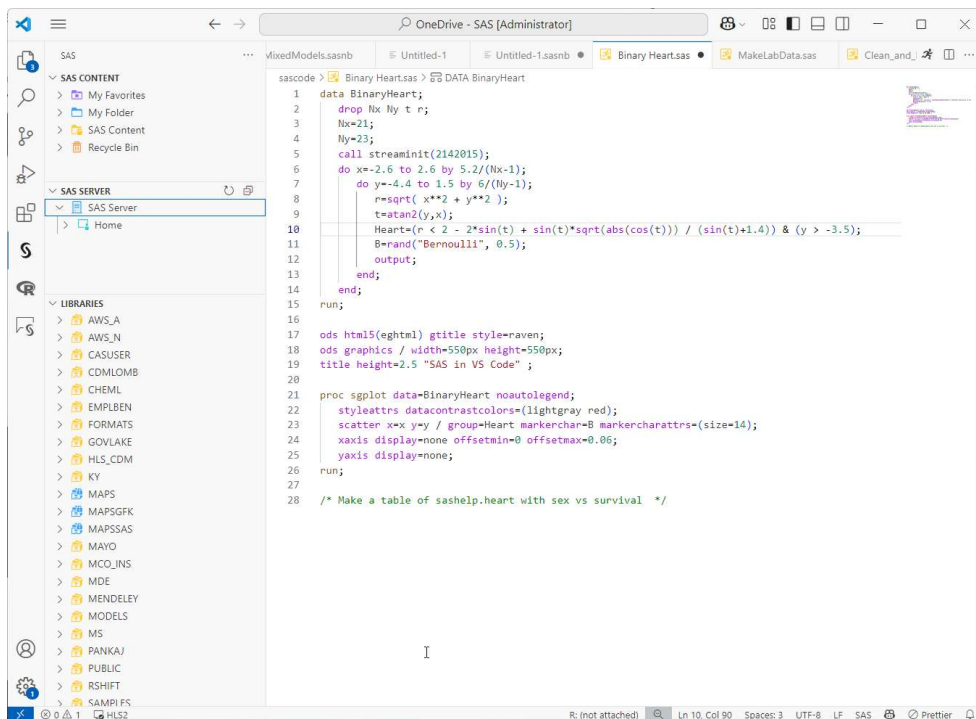


Microsoft Visual Studio Code

More than just a text editor

VS Code Features

Free, lightweight, and highly extensible



Cross-platform Compatibility

Integrated Git Support

Highly Customizable through extensions and themes

Multiple coding language support, including R, Python, and SAS

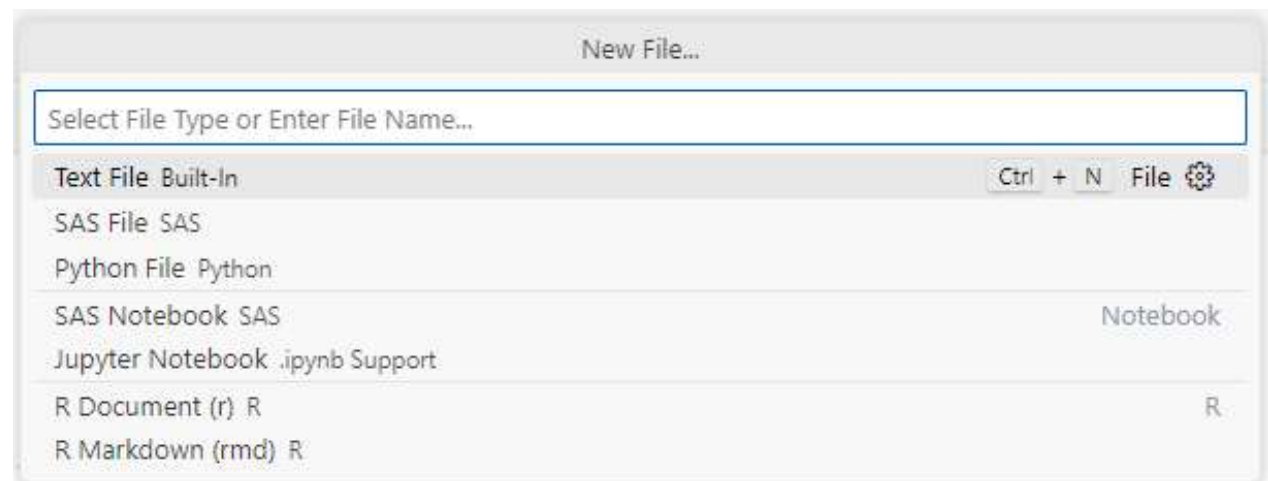
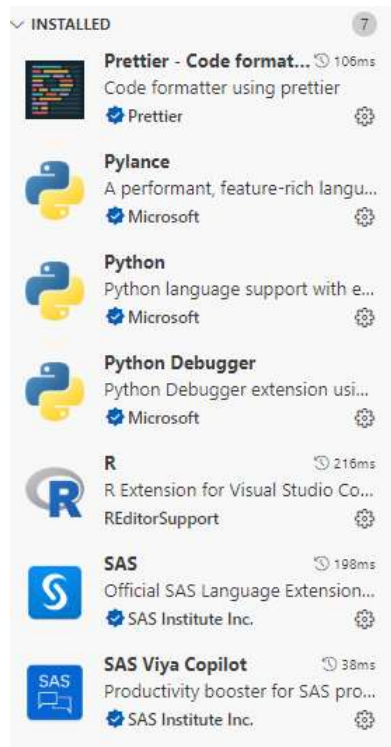
VS Code Features

Language Support

Select Language Mode	Select Language Mode	Select Language Mode	Select Language Mode
Auto Detect - Batch (bat) - BibTeX (bibtex) - Binary (code-text-binary) - C (c) - C# (csharp) - C++ (cpp) - Clojure (clojure) - Code Snippets (snippets) - CoffeeScript (coffeescript) - Compose (dockercompose) - CSS (css) - CUDA C++ (cuda-cpp) - Dart (dart) - Diff (diff) - Docker (dockerfile) - F# (fsharp) - Git Commit Message (git-commit) - Git Rebase Message (git-rebase)	- Git Rebase Message (git-rebase) - Go (go) - graphql (graphql) - Groovy (groovy) - Handlebars (handlebars) - HLSL (hlsl) - HTML (html) - Ignore (ignore) - Ini (ini) - Java (java) - JavaScript (javascript) - JavaScript JSX (javascriptreact) - Jinja (jinja) - JSON (json) - JSON Lines (jsonl) - JSON with Comments (jsonc) - Julia (julia) - Julia Markdown (julimarkdown) - LaTeX (latex)	- LaTeX (latex) - Less (less) - Log (log) - Lua (lua) - Makefile (makefile) - Markdown (markdown) - MS SQL (sql) - Objective-C (objective-c) - Objective-C++ (objective-cpp) - Perl (perl) - PHP (php) - pip requirements (pip-requirements) - Plain Text (plaintext) - Configured Language - PowerShell (powershell) - Properties (properties) - Pug (jade) - Python (python) - R (r) - R DCF (debian-control.r)	- Rust (rust) - SAS (sas) - sas-log (sas-log) - SCSS (scss) - Search Result (search-result) - ShaderLab (shaderlab) - Shell Script (shellscrip - Swift (swift) - TeX (tex) - toml (toml) - TypeScript (typescript) - TypeScript JSX (typescriptreact) - Visual Basic (vb) - vue (vue) - WebAssembly Text Format (wat) - XML (xml) - XSL (xsl) - YAML (yaml)

VS Code Features

Extensions



SAS Extension

Connect to multiple SAS compute environments

SAS Extension

Details on SAS Developers Page

- https://developer.sas.com/programming/vs_code_extension

SAS Extension for Visual Studio Code

The SAS VS Code extension is lightweight, runs anywhere, and allows you to integrate SAS and other languages. The tool also offers the ability to connect directly to SAS Viya and SAS 9 and run code.

- SAS syntax highlighting and help, code completion, and code snippets
- Profile configuration for connecting to SAS and running code
- Support for SAS Viya and SAS 9 connections
- Access to SAS Content and Libraries
- Create Notebooks for SAS, SQL, Python and other languages

```
1 data crack;  
2   input id age load;  
3   datalines;  
4   1 20 11.45  
5   2 20 10.42  
6   3 20 11.14  
7   4 25 10.84  
8   5 25 11.17  
9   ;  
10  
11 proc reg data=
```

Get Started

 **GitHub**

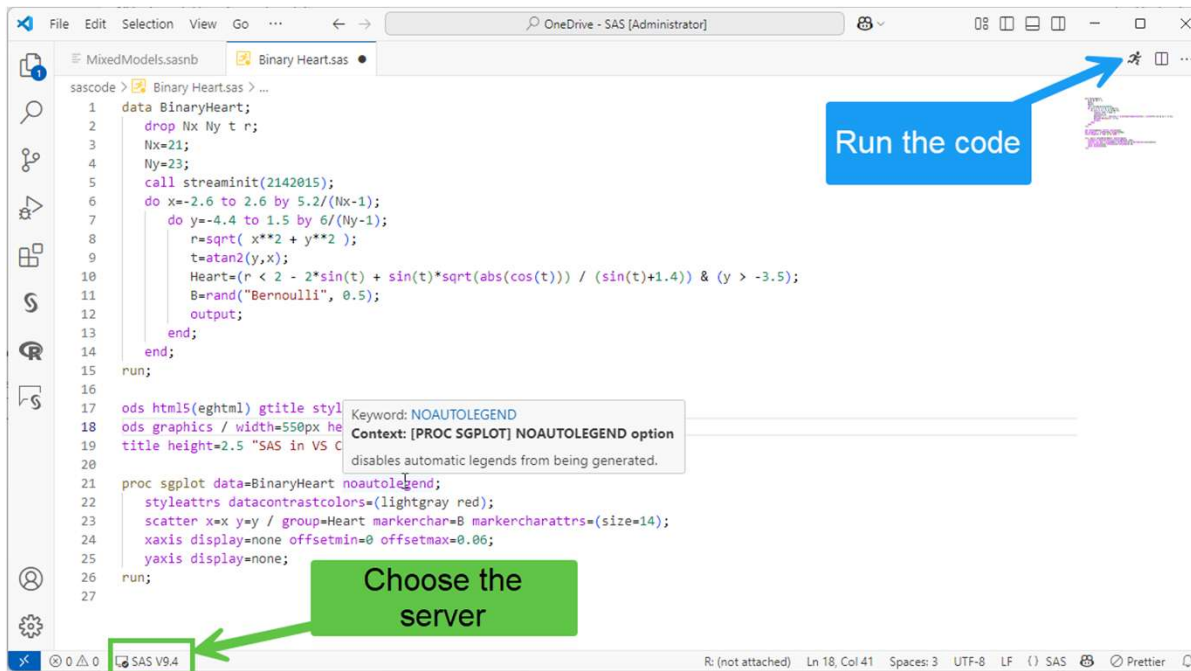
SAS Extension for VS Code

 **Visual Studio Marketplace**

SAS Extension for VS Code on the Visual Studio Marketplace

SAS Extension

Coding Window



Syntax Highlighting

Syntax Help

Auto complete

Color Themes

Keyword Explanations

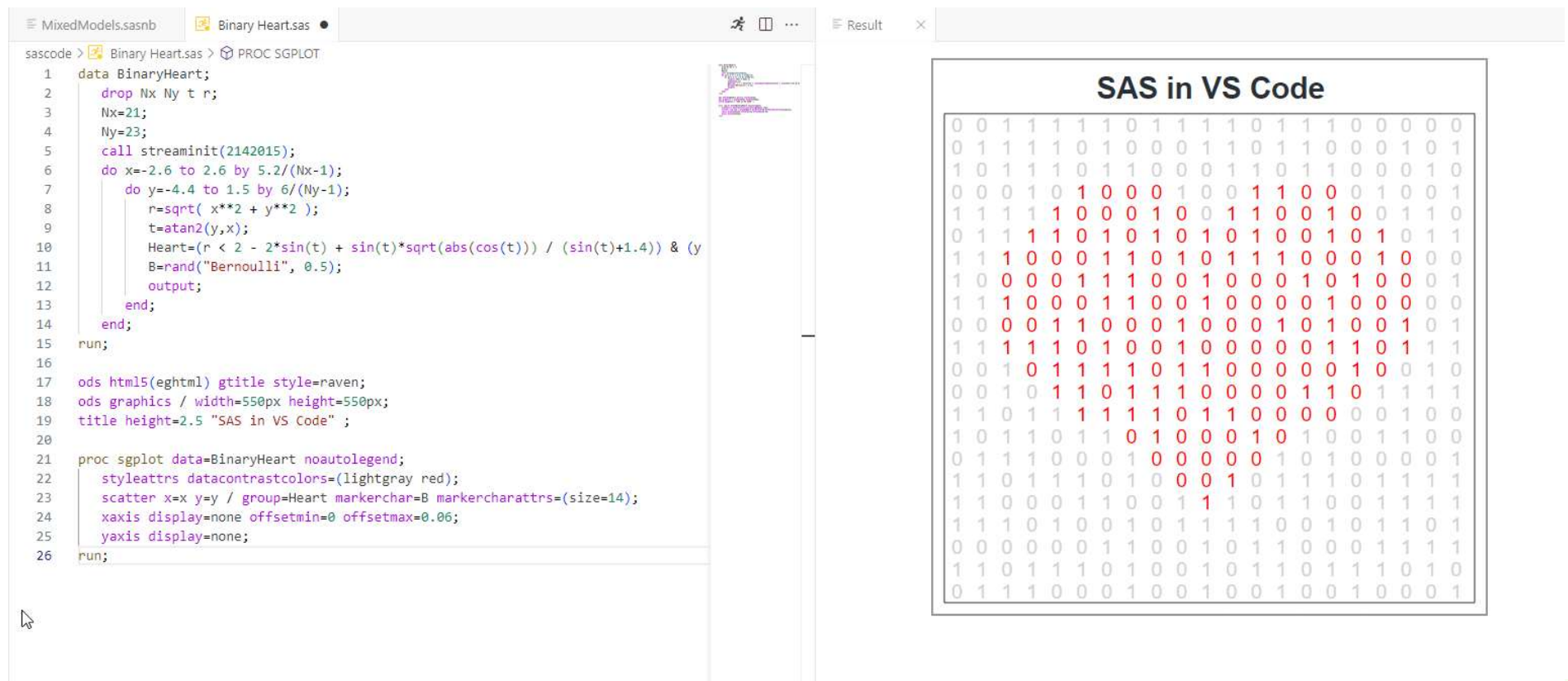
Code Folding and Outlines

Multiple Compute Options

Code Snippets

SAS Extension

Program Results



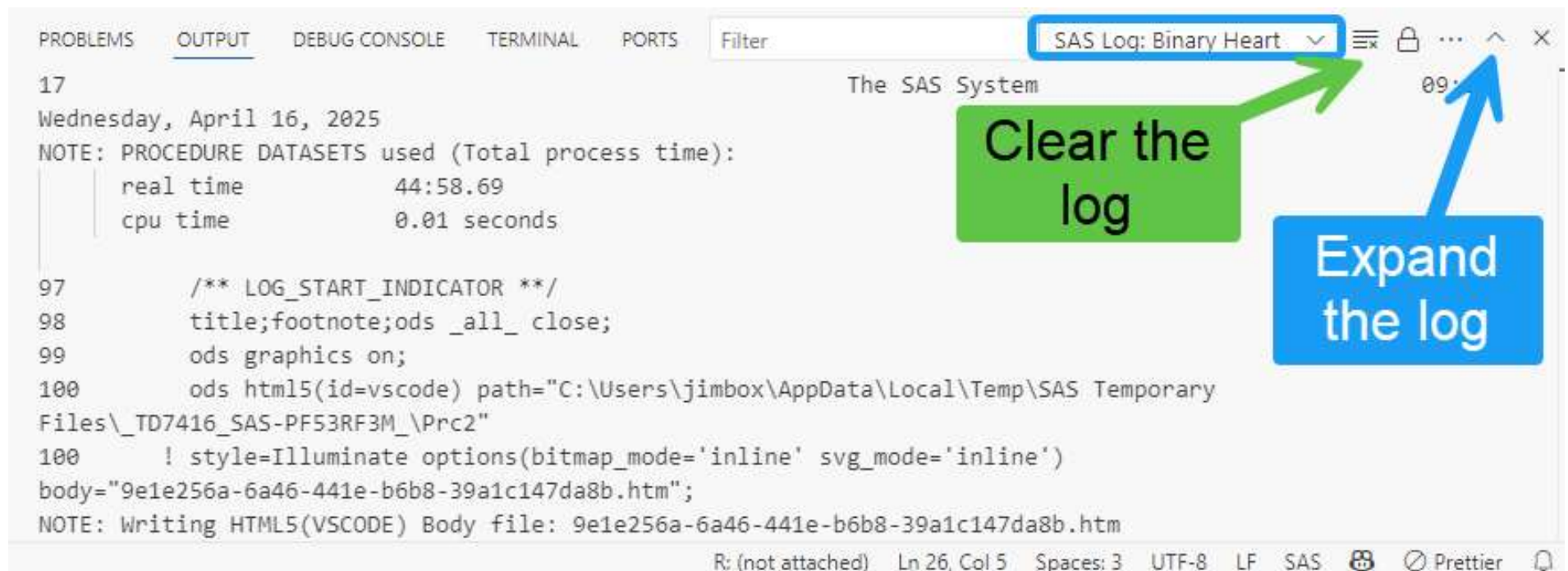
The image shows a screenshot of the Visual Studio Code editor with the SAS Extension installed. The editor is open to a file named `Binary Heart.sas`. The code defines a dataset `BinaryHeart` and a scatter plot using `PROC SGLOT`. The scatter plot is titled "SAS in VS Code" and displays a heart shape using binary data (0s and 1s) with different colors (lightgray and red) for different groups.

```
1 data BinaryHeart;
2   drop Nx Ny t r;
3   Nx=21;
4   Ny=23;
5   call streaminit(2142015);
6   do x=-2.6 to 2.6 by 5.2/(Nx-1);
7     do y=-4.4 to 1.5 by 6/(Ny-1);
8       r=sqrt( x**2 + y**2 );
9       t=atan2(y,x);
10      Heart=(r < 2 - 2*sin(t) + sin(t)*sqrt(abs(cos(t))) / (sin(t)+1.4)) & (y
11      B=rand("Bernoulli", 0.5);
12      output;
13    end;
14  end;
15 run;
16
17 ods html5(eghtml) gtitle style=naven;
18 ods graphics / width=550px height=550px;
19 title height=2.5 "SAS in VS Code" ;
20
21 proc sgplot data=BinaryHeart noautolegend;
22   styleattrs datacontrastcolors=(lightgray red);
23   scatter x=x y=y / group=Heart markerchar=B markercharattrs=(size=14);
24   xaxis display=none offsetmin=0 offsetmax=0.06;
25   yaxis display=none;
26 run;
```

The output window shows the results of the SAS program, which is a scatter plot titled "SAS in VS Code". The plot displays a heart shape using binary data (0s and 1s) with different colors (lightgray and red) for different groups.

SAS Extension

Log Viewer



The screenshot shows the SAS Log Viewer window in VS Code. The window title is "SAS Log: Binary Heart". The log content includes the date "Wednesday, April 16, 2025", a note about procedure datasets, and SAS code for generating an HTML report. Two callouts are present: a green box labeled "Clear the log" with an arrow pointing to the "X" icon in the window title bar, and a blue box labeled "Expand the log" with an arrow pointing to the "upward arrow" icon in the window title bar.

```
17
Wednesday, April 16, 2025
NOTE: PROCEDURE DATASETS used (Total process time):
      real time          44:58.69
      cpu time           0.01 seconds

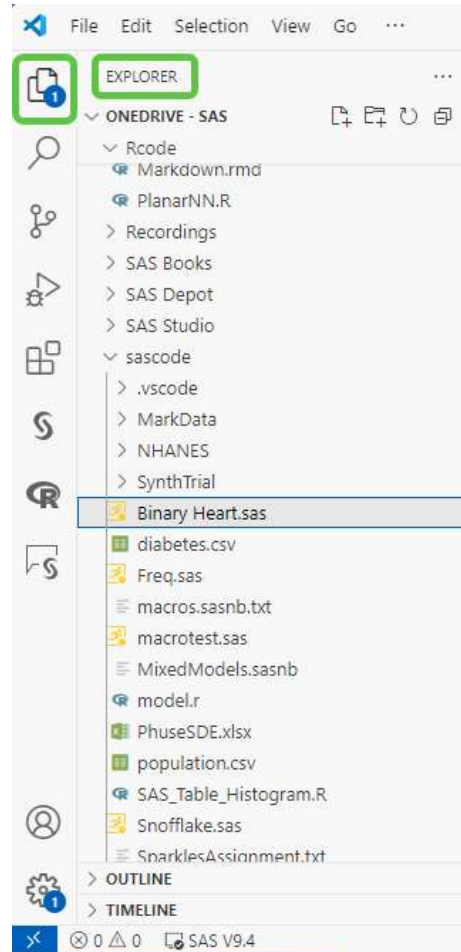
97      /** LOG_START_INDICATOR **/
98      title;footnote;ods _all_ close;
99      ods graphics on;
100     ods html5(id=vscode) path="C:\Users\jimbox\AppData\Local\Temp\SAS Temporary
Files\_TD7416_SAS-PF53RF3M_\Prc2"
100     ! style=Illuminate options(bitmap_mode='inline' svg_mode='inline')
body="9e1e256a-6a46-441e-b6b8-39a1c147da8b.htm";
NOTE: Writing HTML5(VSCODE) Body file: 9e1e256a-6a46-441e-b6b8-39a1c147da8b.htm
```

Clear the log

Expand the log

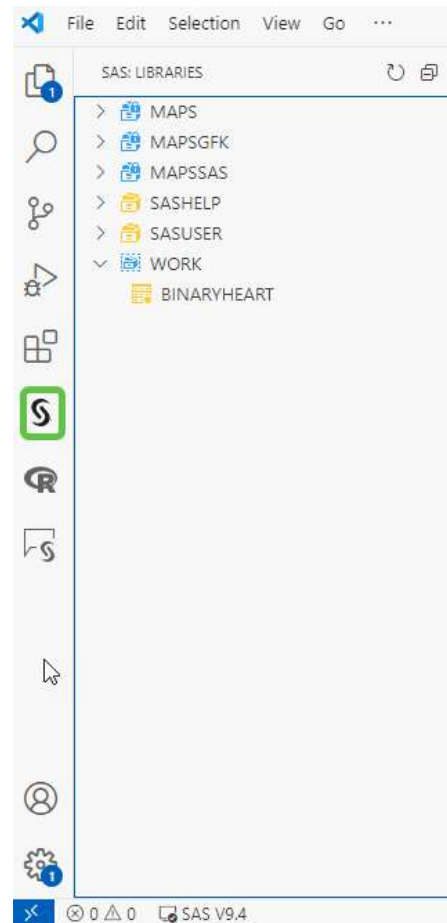
SAS Extension

Content Browser - Files



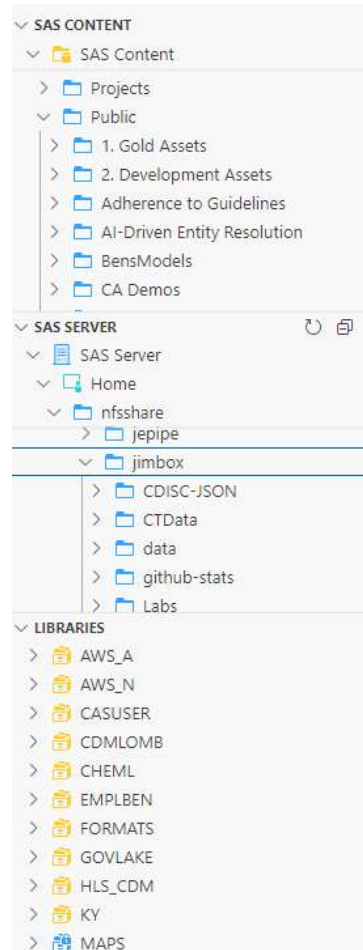
SAS Extension

Content Browser –SAS 9



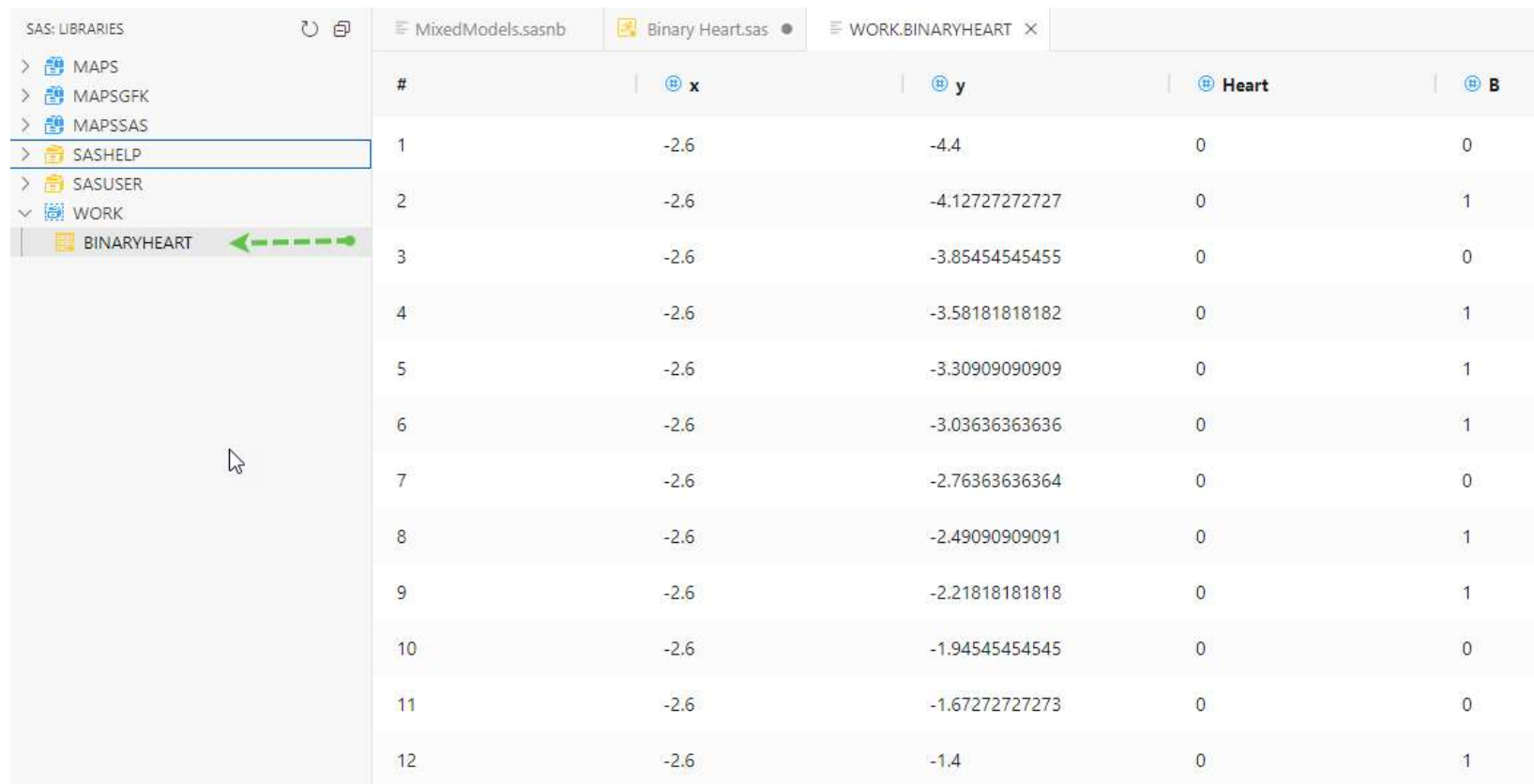
SAS Extension

Content Browser –Viya



SAS Extension

Dataset Viewer



SAS: LIBRARIES				
> MAPS				
> MAPSGFK				
> MAPSSAS				
> SASHELP				
> SASUSER				
▼ WORK				
BINARYHEART				

MixedModels.sasnb Binary Heart.sas WORK.BINARYHEART				
#	x	y	Heart	B
1	-2.6	-4.4	0	0
2	-2.6	-4.12727272727	0	1
3	-2.6	-3.85454545455	0	0
4	-2.6	-3.58181818182	0	1
5	-2.6	-3.30909090909	0	1
6	-2.6	-3.03636363636	0	1
7	-2.6	-2.76363636364	0	0
8	-2.6	-2.49090909091	0	1
9	-2.6	-2.21818181818	0	1
10	-2.6	-1.94545454545	0	0
11	-2.6	-1.67272727273	0	0
12	-2.6	-1.4	0	1

SAS Extension

Dataset Viewer

MixedModels.sasnb Binary Heart.sas WORK.BINARYHEART SASHELP.HEART X							
#	Status	DeathCause	AgeCHDdiag	Sex	AgeAtStart	Height	Weight
1	Dead	Other		Female	29	62.5	140
2	Dead	Cancer		Female	41	59.75	194
3	Alive			Female	57	62.25	132
4	Alive			Female	39	65.75	158
5	Alive			Male	42	66	156
6	Alive			Female	58	61.75	131
7	Alive			Female	36	64.75	136
8	Dead	Other		Male	53	65.5	130
9	Alive			Male	35	71	194
10	Dead	Cerebral Vascular Disease		Male	52	62.5	129
11	Alive			Male	39	66.25	179
12	Alive		57	Male	33	64.25	151
13	Alive		55	Male	33	70	174

SAS Extension

SAS Notebooks

Interactive notebooks that combine text, code, logs, and results in one document

Excellent for telling stories with data and programming

Similar to Jupyter notebooks and R Markdown files

Sharable with other users of VS code with the plugin

SAS Extension

SAS Notebooks

Notebook Version of Binary Heart

Set up the Dataset



```
data BinaryHeart;
  drop Nx Ny t r;
  Nx=21;
  Ny=23;
  call streaminit(2142015);
  do x=-2.6 to 2.6 by 5.2/(Nx-1);
    do y=-4.4 to 1.5 by 6/(Ny-1);
      r=sqrt( x**2 + y**2 );
      t=atan2(y,x);
      Heart=(r < 2 - 2*sin(t) + sin(t)*sqrt(abs(cos(t))) / (sin(t)+1.4)) & (y > -3.5);
      B=rand("Bernoulli", 0.5);
      output;
    end;
  end;
run;
```

[2] ✓ 2.7s

SAS

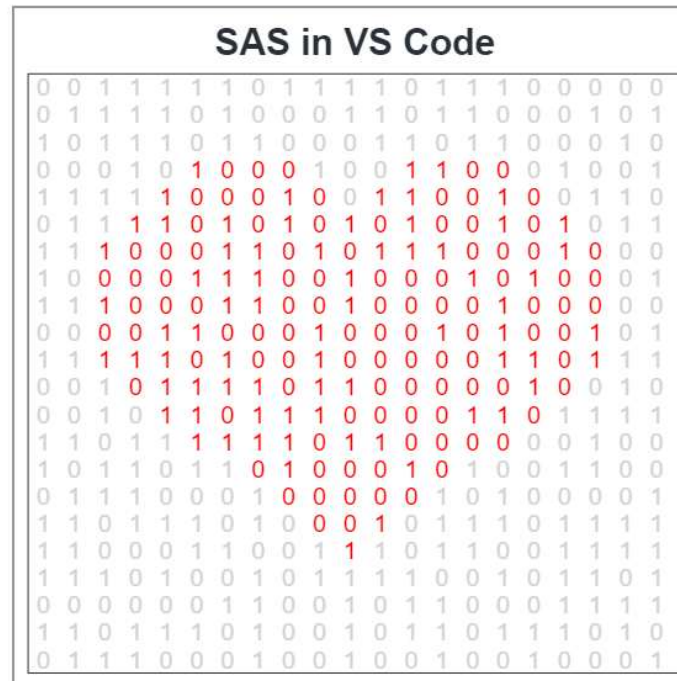
SAS Extension

SAS Notebooks

```
title height=2.5 "SAS in VS Code" ;
proc sgplot data=BinaryHeart noautolegend;
  styleattrs datacontrastcolors=(lightgray red);
  scatter x=x y=y / group=Heart markerchar=B markercharattrs=(size=14);
  xaxis display=none offsetmin=0 offsetmax=0.06;
  yaxis display=none;
run;
```

[S] ✓ 3.1s

...



SAS Extension

SAS Notebooks

```
... 5                                     The SAS System                                21:01 Wednesday, April 16, 2025
63      /** LOG_START_INDICATOR **/
64      title;footnote;ods _all_ close;
65      ods graphics on;
66      ods html5(id=vscode) path="C:\Users\jimbox\AppData\Local\Temp\SAS Temporary Files\_TD216_SAS-PF53RF3M_\Prc2"
66      ! style=illuminate options(bitmap_mode='inline' svg_mode='inline') body="63205275-bcd2-41f5-9a3c-c9af5199452c.htm";
NOTE: Writing HTML5(VSCODE) Body file: 63205275-bcd2-41f5-9a3c-c9af5199452c.htm
67      %let _SASPROGRAMFILE = %nrquote(%nrstr(Untitled-1.sasnb));
68      title height=2.5 "SAS in VS Code" ;
69      proc sgplot data=BinaryHeart noautolegend;
70          styleattrs datacontrastcolors=(lightgray red);
71          scatter x=x y=y / group=Heart markerchar=B markercharattrs=(size=14);
72          xaxis display=none offsetmin=0 offsetmax=0.06;
73          yaxis display=none;
74      run;
NOTE: PROCEDURE SGPLOT used (Total process time):
      real time          0.76 seconds
      cpu time           0.09 seconds

NOTE: There were 462 observations read from the data set WORK.BINARYHEART.
75      ;*';**';*//;run;quit;ods html5(id=vscode) close;
76
77      %put --vscode-sas-extension-submit-end--;
```

SAS Extension

Final Thoughts & Resources

Final Thoughts

My Pros and Cons

Connect to
multiple SAS
compute engines

Very nice
formatting and
code viewing

Can run other
languages from
the same
application

SAS Notebooks
in general are
awesome

Can use on any
OS

Dataset viewer is
currently pretty
basic

Placement of logs
is a little hard to
get used to

Must manually
clear log

No background
submit

References

Links to get you Started

Community	Link
SAS Developers	https://developer.sas.com/programming/vs_code_extension
SAS Community	https://communities.sas.com/t5/SAS-Communities-Library/SAS-Extension-for-Visual-Studio-Code/ta-p/819490
GitHub Project	https://github.com/sassoftware/vscode-sas-extension

Thanks!

