Enhance your Coding Experience with the SAS Extension for VS Code

Jim Box

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Microsoft Visual Studio Code

More than just a text editor

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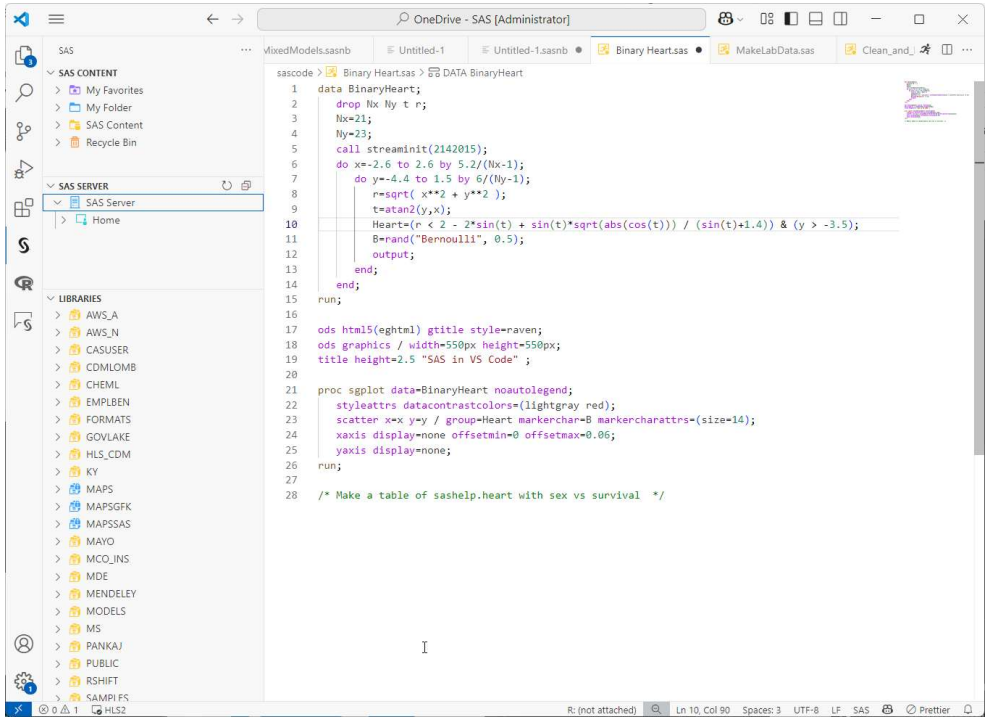
VS Code Features

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

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VS Code Features

Language Support

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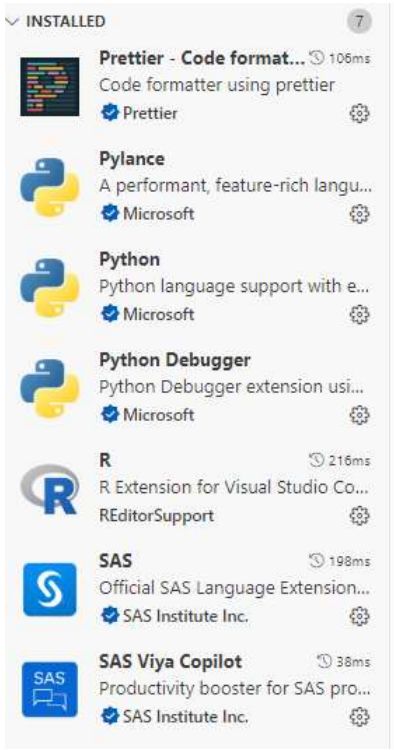
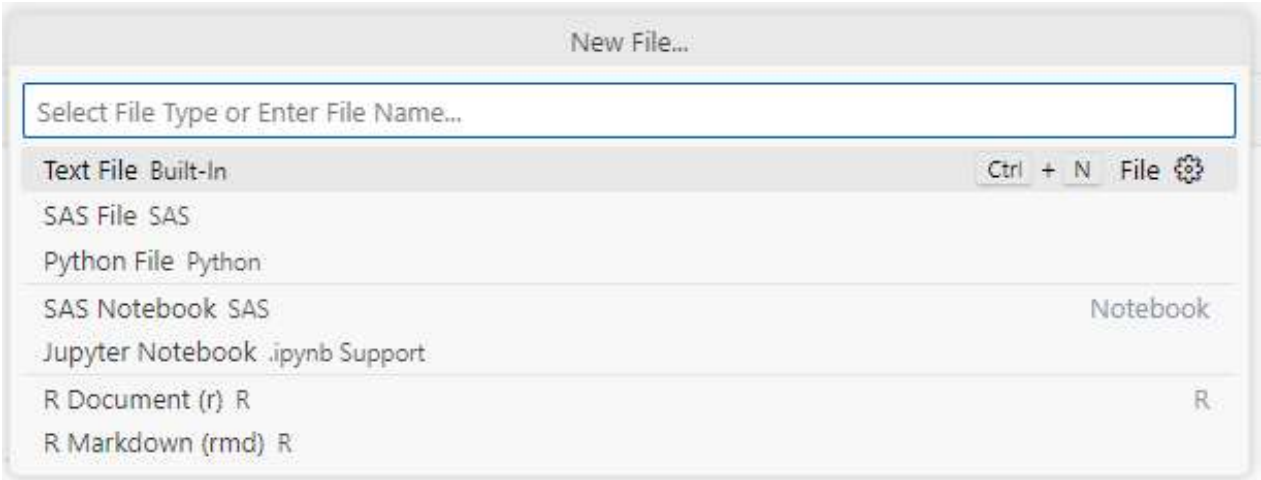
VS Code Features

Extensions





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SAS Extension

Connect to multiple SAS compute environments

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SAS Extension

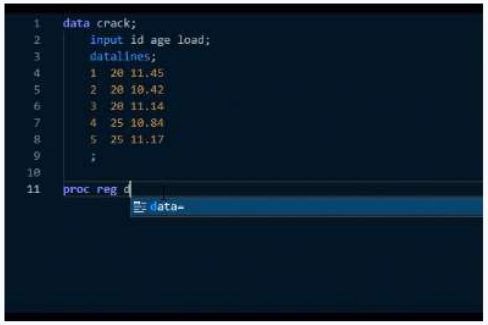
Details on SAS Developers Page

- 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



Get Started

GitHub

SAS Extension for VS Code

Visual Studio Marketplace

SAS Extension for VS Code on the Visual Studio Marketplace

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SAS Extension

Coding Window

- Syntax Highlighting
- Syntax Help
- Auto complete
- Color Themes
- Keyword Explanations
- Code Folding and Outlines
- Multiple Compute Options
- Code Snippets

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SAS Extension

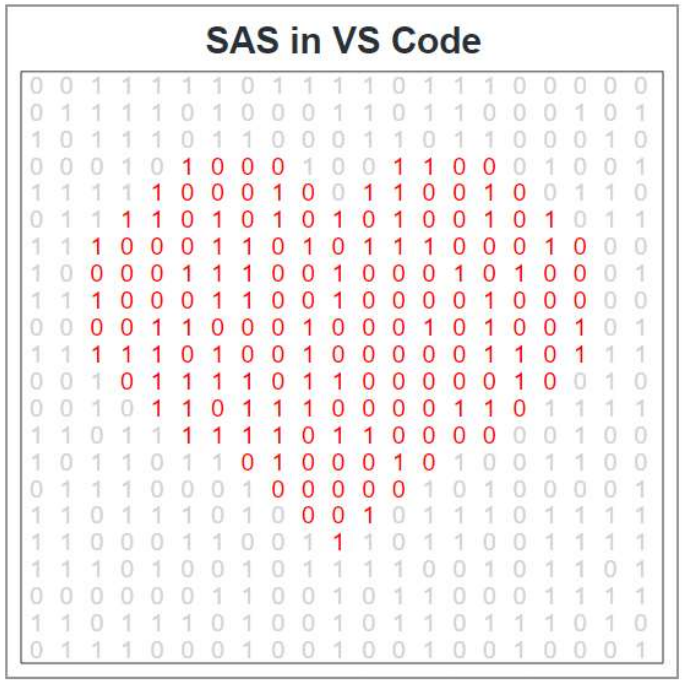
Program Results

MixedModels.sasnb | Binary Heart.sas ●

sascode > Binary Heart.sas > PROC SGPLOT

```
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=raven;
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;
```

Result



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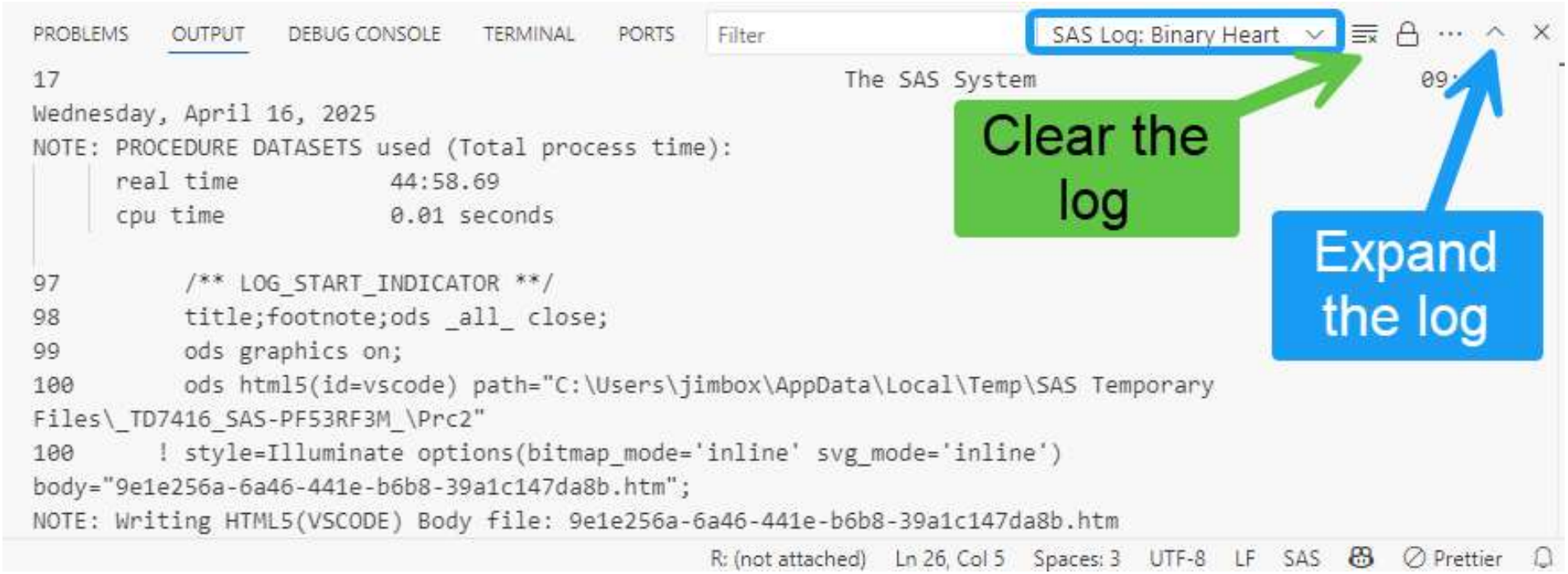
SAS Extension

Log Viewer



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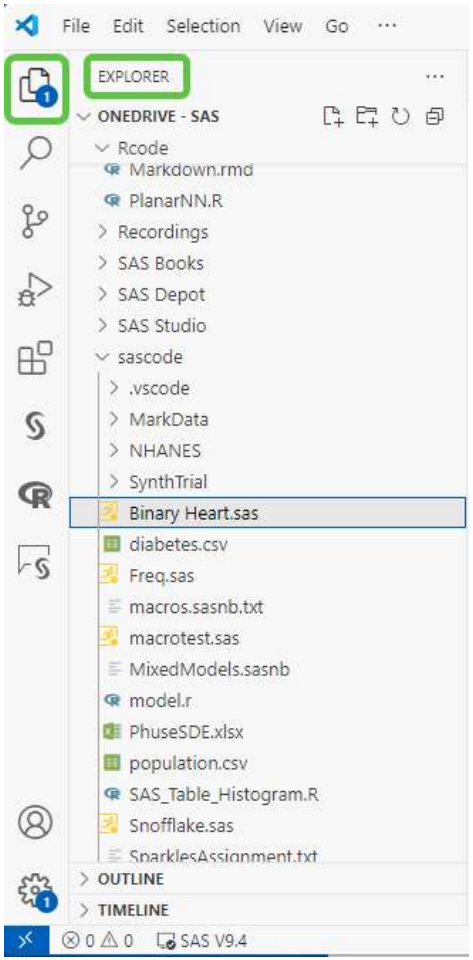
SAS Extension

Content Browser - Files



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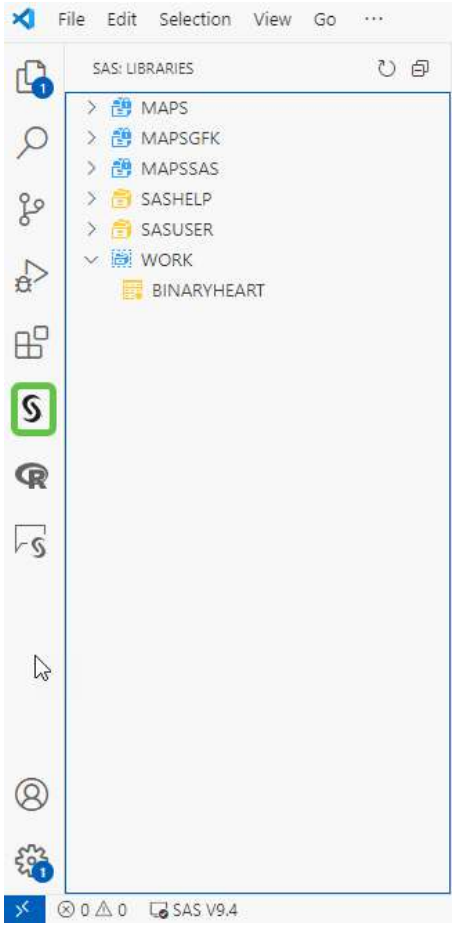
SAS Extension

Content Browser –SAS 9



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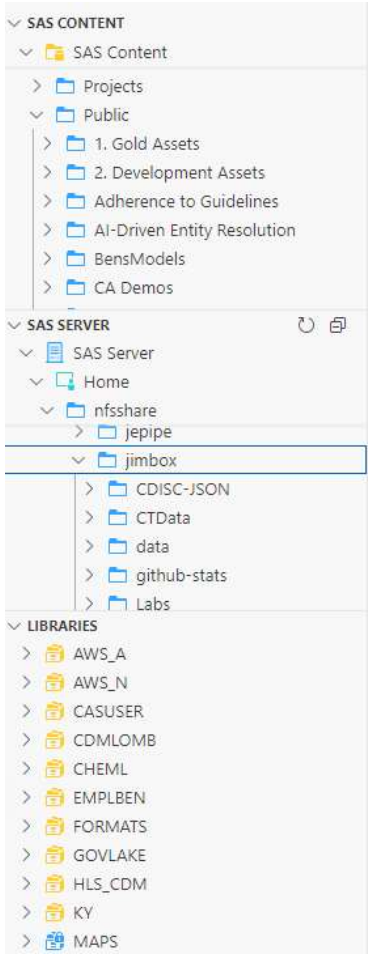
SAS Extension

Content Browser –Viya



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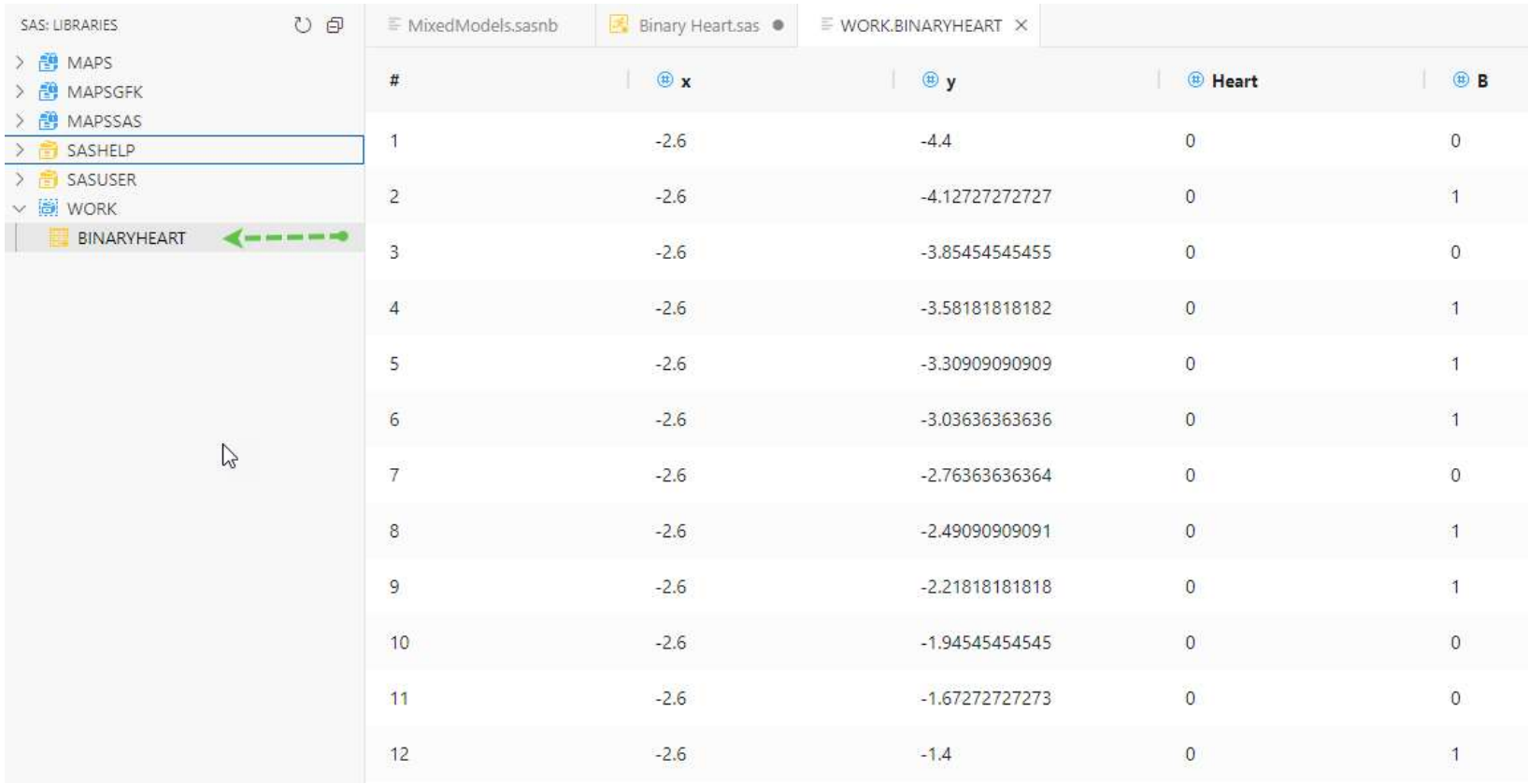
SAS Extension

Dataset Viewer



#	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

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SAS Extension

Dataset Viewer

MixedModels.sasnb | Binary Heart.sas | WORK.BINARYHEART | SASHELP.HEART

#	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

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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

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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

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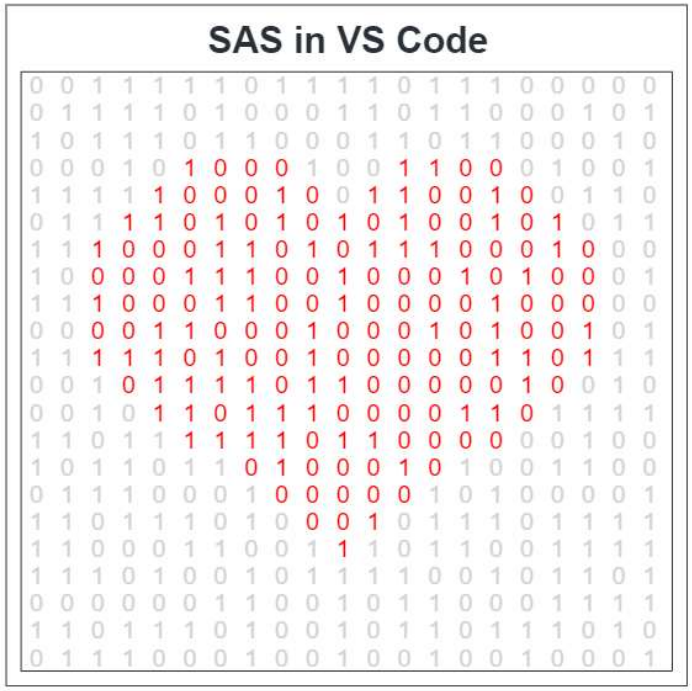
SAS Notebooks

```
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;
```

[5] ✓ 3.1s



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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--;
```

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SAS Extension

Final Thoughts & Resources

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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

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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

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Thanks!

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