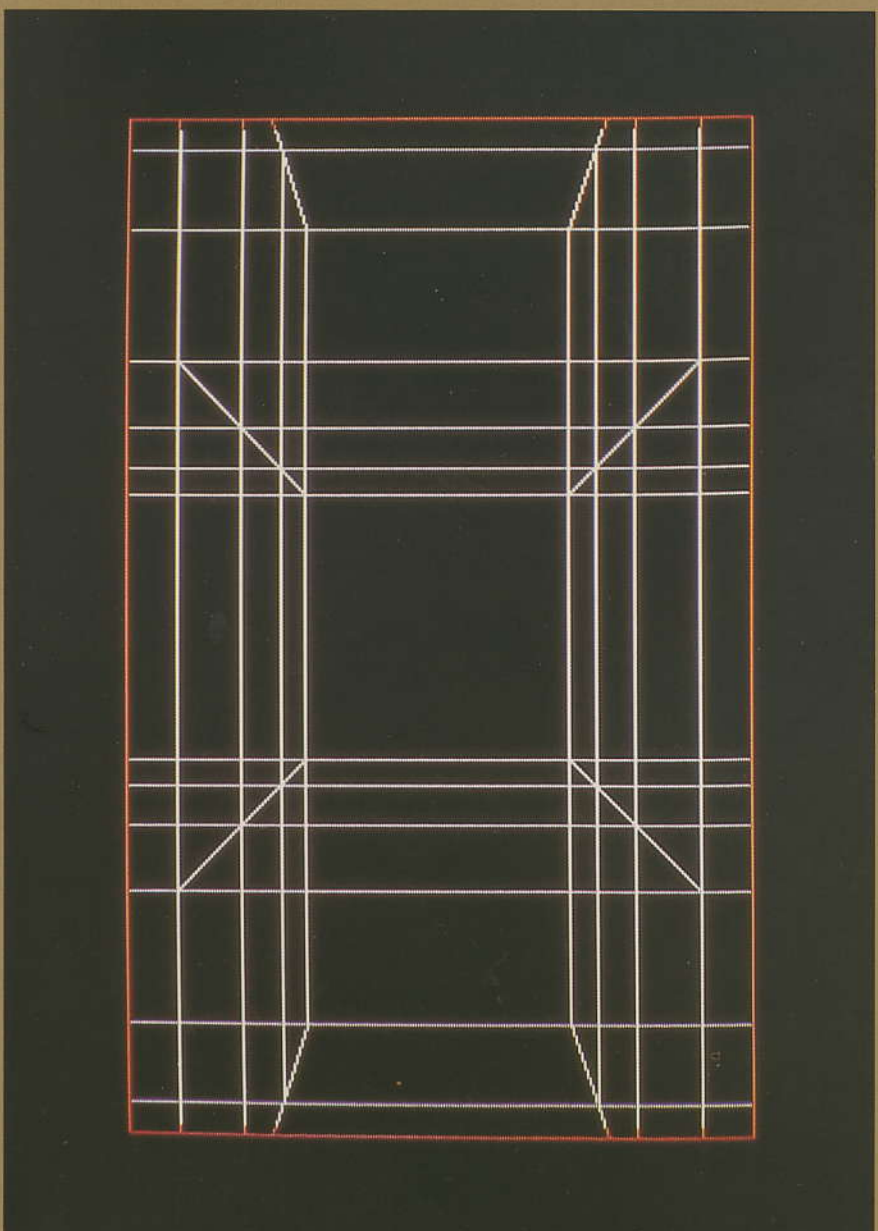


# Get



## GRAPHICS EDITOR DATA SHEET

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## Features

- Provides blinking, color, shading, writing mode, positive and negative images, pattern choice, pattern multiply
- Runs in these hardware/software environments:
  - RSTS/E on PDP-11
  - VAX/VMS
  - TOPS-20 on DECSYSTEM-20
- Allows alternate character fonts; variable character height, width, direction, and italicization; and mosaic or normal character spacing
- Creates visual images consisting of lines, curves, circles, boxes, and text
- User edits graphic displays interactively
- Interfaces with the GIGI Slide Projection System, Character Set Editor, DEC-RTTE Text Editor, and Data Plotting Package.

## Description

The GIGI Graphics Editor enables you to design visual images for use on your GIGI terminal. The graphic images may be any combination of circles, curves, lines, boxes, or text, and may be rotated, scaled, translated, inserted, deleted, shaded, or altered in a variety of other ways.

With the GIGI Graphics Editor, you can access the full power of interactive graphics and express yourself with multicolor charts, complex drawings, and self-created geometric shapes. You can add emphasis to statistics tables, dramatically illustrate chemical reactions, and create design drawings and illustrations that can be scaled to proper size and rotated to allow viewing from different angles. By adding color and geometric shapes, you can heighten your students' ability to analyze information while making it easier to understand.

The GIGI Graphics Editor enables you to build and edit picture files that can be used by other GIGI components. In addition, the Graphics Editor can edit ReGIS graphics produced by your own application programs. Using GIGI's auxiliary keypad (with the Graphics Editor keypad overlay that labels special-function keys), you can specify functions to interactively draw pictures and choose attributes (char-

acteristics) that affect the writing and background of your pictures. When you have drawn a picture, you can save it in a file for later use or editing. What is actually in the file is a string of ReGIS (Remote Graphics Instruction Set) commands that describes the picture.

### GRAPHICS EDITOR FUNCTIONS

|        |              |
|--------|--------------|
| lines  | circles      |
| curves | text         |
| boxes  | screen erase |

### GRAPHICS EDITOR ATTRIBUTES

#### Circles and Boxes:

Raster-op (replace, erase, complement, and overlay writing)  
Shading Blink Color  
Negate (reversing object and background color)  
Pattern  
Pattern multiplier  
Background color

#### Lines and Curves:

|           |         |
|-----------|---------|
| Raster-op | Color   |
| Negate    | Shade   |
| Blink     | Pattern |

Pattern multiplier  
Screen color  
Open/close (drawings)

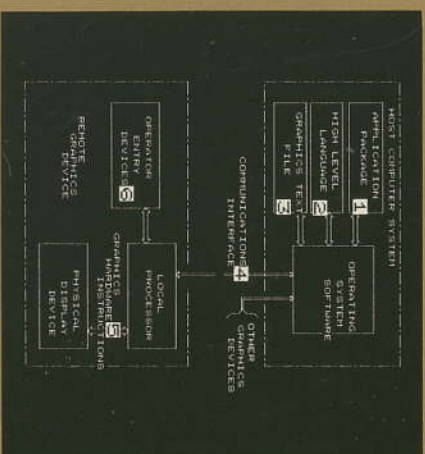
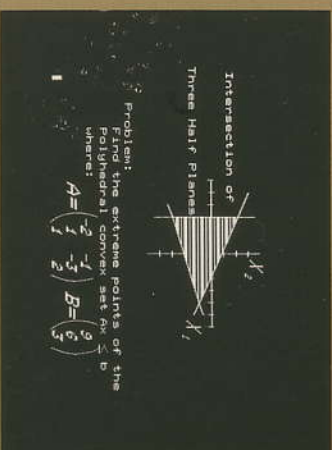
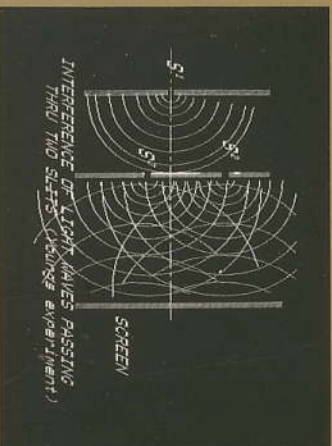
#### Text:

|           |              |
|-----------|--------------|
| Raster-op | Height       |
| Negate    | Screen Color |
| Blink     | Spacing      |
| Color     | Italic       |
| Font      | Slope        |
| Width     | Size         |

### Editing Operations

|       |              |
|-------|--------------|
| Write | Copy         |
| Read  | Delete       |
| Label | Extract File |
| Group | Move         |
| Scale | Tilt         |
| Alter |              |

The GIGI Graphics Editor allows the user to create the specialized graphics formerly accessible to experienced graphics programmers using expensive graphics terminals. It helps make GIGI the versatile terminal for education.

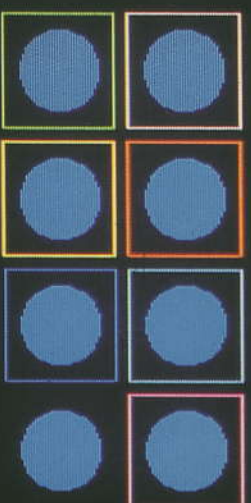


# GlG1

color

## WRITING ATTRIBUTES

Any text or graphics presented on a GlG1 may be done in any of the eight available colors.



# RITE (REGIS ILLUSTRATED TEXT EDITOR)

digital



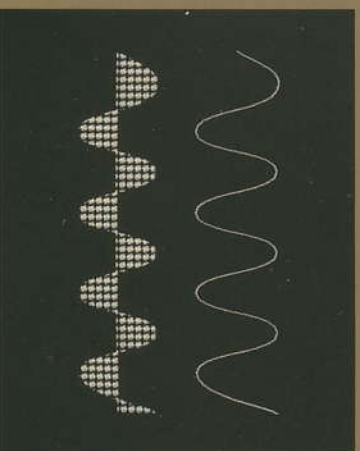
## Features

- Performs the functions of text processing, picture placements, screen editing, and hardcopy
- Allows access to picture files, enabling graphic images to be inserted into text
- Selects superscripts/subscripts, four types of italics, alternate sized characters (up to nine times normal size), boldface, overstruck characters and underline
- Provides eight colors for text or background, flashing text, inverted or negated video text
- Runs in these hardware/software environments:
  - RSTS/E on PDP-11
  - VMS on VAX
  - TOPS-20 on DECSYSTEM-20
- Interfaces with GIGI Graphics Editor, Character Set Editor, Slide Projector System and Data Plotting Package.

- Offers special keyboard overlays with self-explanatory function labels

## Description

The GIGI RITE package is a text processor which allows you to interact with the image of the "printed page" by using simple keyboard commands. GIGI interprets these commands into ReGIS command strings to perform a wide array of editing functions, including the ability to mix text and graphic images.



RITE is a host-resident program that provides you with a tool to edit files containing text, pictures, and user-defined character sets. It is highly interactive, yet it is designed to minimize operator keystrokes. It provides hardcopy pagination for pages of any size.

RITE's editing features include fill, word wrap, copy, tab settings, search, cut and paste, full cursor motion, picture placement, and more. With its various text preparation capabilities, you can add emphasis and dimension



to your documents. In combination with GIGI's Character Set and Graphics Editors, RITE enhances your text preparation with creative and versatile graphics and powerful text manipulation capabilities. This allows graphic pictures to be included in the text according to your layout preferences without having to program the text layout explicitly.

Since RITE allows you to interactively alter images on your monitor screen, you are continually working with a visual medium that can help you keep pace with a dynamic and changing educational environment.



EDUCATION COMPUTER SYSTEMS

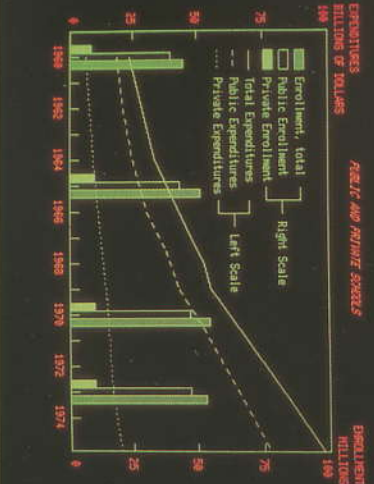
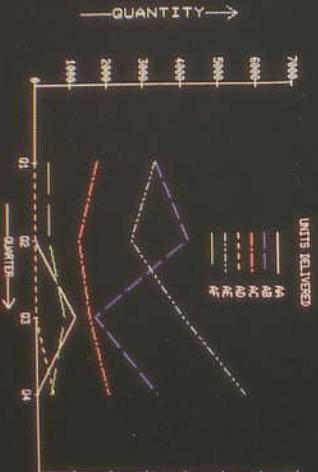
# GIGI

NATURAL VOTE BY WARD - 1978

COLUMNS: CANDIDATES

ROWS: WARDS

|       | Benton | Orwell | Netherwood | Kelly | 277th |
|-------|--------|--------|------------|-------|-------|
| 1     | 457    | 345    | 281        | 541   | 1574  |
| 2     | 494    | 297    | 254        | 555   | 1541  |
| 3     | 372    | 614    | 167        | 389   | 1542  |
| 4     | 411    | 573    | 211        | 395   | 1599  |
| 5     | 484    | 495    | 282        | 473   | 1573  |
| 6     | 518    | 391    | 489        | 316   | 1523  |
| 7     | 394    | 267    | 649        | 339   | 1544  |
| 8     | 444    | 271    | 517        | 418   | 1559  |
| 9     | 487    | 235    | 335        | 547   | 1555  |
| 277th | 3931   | 3399   | 3166       | 3954  | 14423 |



GIGI DATA PLOTTING PACKAGE

digital



## Features:

- Equips GIGI for data plotting use
- Designed for an audience with a broad range of technical expertise
- Runs in these hardware/software environments:
  - RSTS/E on PDP-11
  - VMS on VAX
  - TOPS-20 on DECSYSTEM-20
- Allows users to enter and edit data in table, graph, or chart form
- Allows tables, graphs, and charts to be stored for use by other GIGI packages. (Can also store instructions used to create the displays.)
- Plots data into bar charts and line plots
- Specifies up to 9 plots at one time; certain plots can be superimposed
- 8 different colors available for highlighting when GIGI is paired with a color monitor
- Basic, easy-to-use package includes "Help" messages to prompt users

## Description:

The GIGI Data Plotting Package gives data analysis and plotting capabilities to educators and students working with mathematics, business, statistics, economics, and any other discipline which utilizes graphs and charts to display information. Administrators can use the Data Plotting Package to prepare presentations and analyze financial information, enrollment trends, etc.

Using GIGI as an interactive terminal, the user enters data values on the keyboard and selects the types of displays to be drawn and analyses to be performed. This information is transmitted to the host system for processing and returned to GIGI for display on a monitor or printing on GIGI's special DECwriter IV Graphics Printer.

Tables and plots can be stored and accessed in conjunction with other GIGI software packages.

The Data Plotting Package is designed for both new and experienced computer users. It performs three main categories of plotting functions: table building, plotting, and statistical analysis.

## Table Building Capabilities

- Enter raw data into a table with the number of rows and columns defined by the user
- Name the table, name separate categories for rows and columns, and label each row and column
- Edit a row, column, or data item
- Add and delete rows or columns of data
- Sort any row or column alphabetically or for numeric data
- Perform arithmetic operations on rows, columns, or items
- Perform PWR (x10), LOG, SUM, SORT, ROUND, AND STEP (increment by 1) on rows, columns, items, or complete tables

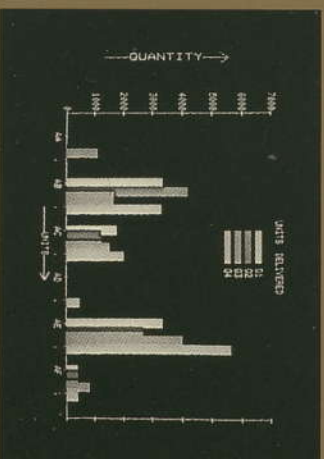
- Display running totals for rows, columns, and grand totals

## Plotting Capabilities

- Bar charts
- Line plots, straight lines, curves, normal curves
- Point plots

## Statistical Analysis Capabilities

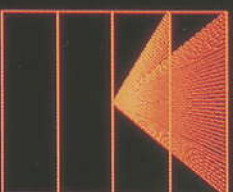
- Basic statistics: mean, range, variance, standard deviation, percentage
- Non-parametric comparative statistics: chi-square



# GiGi

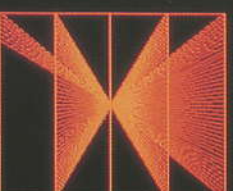
## LINES

GiGi may draw a line from any point on the screen to any other point on the screen.



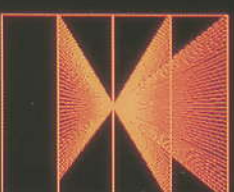
## LINES

GiGi may draw a line from any point on the screen to any other point on the screen.



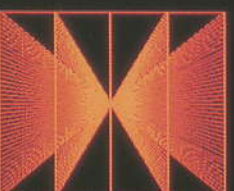
## LINES

GiGi may draw a line from any point on the screen to any other point on the screen.



## LINES

GiGi may draw a line from any point on the screen to any other point on the screen.



# REGIS APPLICATION LIBRARY

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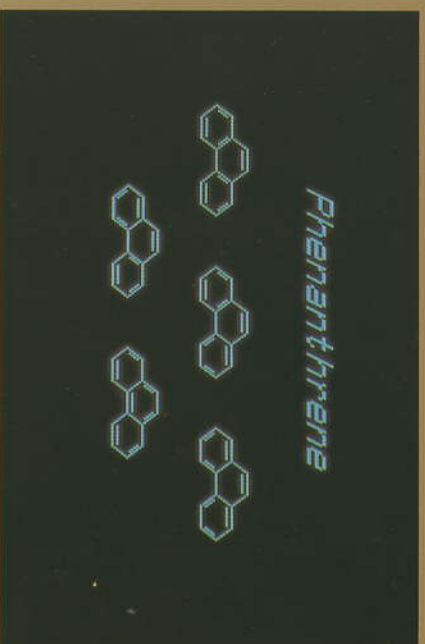


| Features   | administrators to create sophisticated graphic displays with a minimal amount of programming skills. The Library consists of a set of FORTRAN subroutines which can be called from your application programs to perform a variety of picture drawing applications. These subroutines represent a tool that utilizes ReGIS. GIGI's built-in graphics instruction set, to create graphical displays that help you analyze data, create line drawings, or illustrate your presentations and lectures.   |   |
|--|--|---|
| <ul style="list-style-type: none"> <li>• A graphics library (set of callable FORTRAN subroutines) for easy picture generation with a GIGI terminal</li> <li>• Combined text and graphics display capabilities</li> <li>• Color and shading available for highlighting</li> <li>• Runs in these hardware/software environments:               <ul style="list-style-type: none"> <li>— RSTS/E on the PDP-11</li> <li>— VAX/VMS</li> <li>— TOPS-20 on DECSYSTEM-20</li> </ul> </li> <li>• Compatible with GIGI's Character Set Editor and Slide Projection System</li> </ul> | <p>Programs running on RSTS/E or TOPS-20 must be written in FORTRAN IV. Those running on VAX/VMS must be written in any native mode VMS language. By calling the routines in the ReGIS Application Library, you can quickly and easily do the following:</p> <ul style="list-style-type: none"> <li>— Define where your picture is to be drawn on the screen.</li> <li>— Define your user coordinate system and what portion of your picture you will view.</li> <li>— Draw picture objects such as lines, boxes, polygons, circles, arcs, and figures from previously stored data.</li> <li>— Shade picture objects with a filler character of your choice.</li> <li>— Write messages with graphic text using one of GIGI's multiple character sets.</li> </ul> | <ul style="list-style-type: none"> <li>— Add color or shading to your screen display.</li> <li>— Rotate graphic objects, move them, and scale them up or down.</li> <li>— Erase graphic objects, make them blink, or reverse their video image on the screen.</li> <li>— Provide windowing and view-pointing capabilities.</li> </ul> <p>Frequently drawn figures may be conveniently stored as macrographs (strings of ReGIS commands) in the GIGI terminal to increase the speed of graphics generation. Various utility routines are available to help you perform utility functions such as clearing the monitor screen, transferring ReGIS commands to and from a disk file, copying your screen display on GIGI's DECwriter IV Graphics Printer, and loading alternate fonts previously defined with GIGI's Character Set Editor.</p> |
| Description  | The ReGIS Applications Library provides the user with an important set of higher level graphics primitives, in particular viewing transforms, in addition to the capabilities inherent in ReGIS (ReGIS Graphics Instruction Set). You can write your applications programs to run on the RSTS/E, VAX/VMS or TOPS-20 operating systems.   |   |
| GIGI's ReGIS Application Library enables students, professors, and   |  |   |

EDUCATION COMPUTER SYSTEMS



# GIGI



## GIGI CHARACTER SET EDITOR

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## Features

- Allows you to program user-defined character sets of 95 characters to fit any discipline
- Runs in these hardware/software environments:
  - RSTS/E on PDP-11
  - VAX/VMS
  - TOPS-20 on DECSYSTEM-20
- Easy-to-use four-part screen format
- Keyboard overlays for user-created character sets available
- Multiple-character "mosaic" composition
- Compatibility with GIGI Graphics Editor, Slide Projection System, DEC-RITE Text Editor, Data Plotting Package, RegIS Application Library

## Description

The GIGI Character Set Editor allows the user to design character and special symbol sets for use on the GIGI terminal. The Editor provides commands for creating and manipulating character set files and for controlling a special split-screen format.

GIGI can store and allow access to up to four character sets simultaneously: one standard or native set of 95 ASCII char. and three user-defined sets of 95 characters each. The host-resident Character Set Editor allows you to create a character set (for example, a set of Greek characters, chemistry symbols, or musical notation), alter those

characters to suit your needs, and delete characters from the set.

Each character is referenced by the corresponding base character from the native ASCII character set. The flexibility of the Character Set Editor also allows you to define a character set using combinations of available characters to form multiple-character mosaics.

Alternate character sets reside in files in host online storage and are accessed (i.e., read and written) using Character Set Editor commands. The Graphics Editor and DEC-RITE Text Editor also provide commands for using character sets created by the Character Set Editor.

Students, teachers and administrators can easily use the Character Set Editor with a very basic level of programming knowledge.

The Character Set Editor allows GIGI to take the place of most expensive specialized graphics terminals, keeping costs down and providing access to this special feature to more users. It provides full expression and communication with a host computer system in a wide range of disciplines such as foreign language studies and courses which utilize special notation and graphic simulations.

The Editor is unique to GIGI in comparison to other terminals in its price range. It gives GIGI and your computer system the ability to adapt to a dynamic and changing educational environment.

## Character Set Editor Screen Format

The Character Set Editor uses GIGI, through keyboard commands and keypad functions, to manipulate images on the screen. The Editor formats the screen into discrete areas, each of which is useful in editing the character set:

| CHARACTER SET DISPLAY AREA       |                            |  |
|----------------------------------|----------------------------|--|
| Current Font                     |                            |  |
| CHARACTER<br>COMPOSITION<br>AREA | UTILITY<br>DISPLAY<br>AREA |  |
| COMMAND ENTRY AREA               |                            |  |

The Character Set Display Area shows the correspondence of GIGI's 95 native characters being created or edited.

The Character Composition Area is a grid which makes alternate character creation visually simple. Single and mosaic char. are composed interactively using cursor movement and keyboard commands.

The Utility Display Area displays variations of a given character, command menus, and a character selection grid.

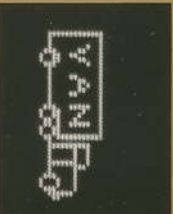
The Command Entry Area displays user-entered Editor commands as well as error and informational messages.

## Character Set Editor Keypad Layout

The Character Set Editor uses keys on GIGI's auxiliary keypad to perform functions such as drawing and erasing lines on the screen. The arrow keys on either the main or auxiliary keypads move the graphics cursor around the composition area. An auxiliary keypad overlay, preprinted with self-explanatory function labels, is used with the Character Set Editor to perform the editing functions required to compose a character in edit mode.

Blank Character Set Editor keyboard overlays are also available. With these simple plastic key covers, the user creates an overlay to represent the alternate character set that has been created. The overlay is inexpensive and easily installed and removed.

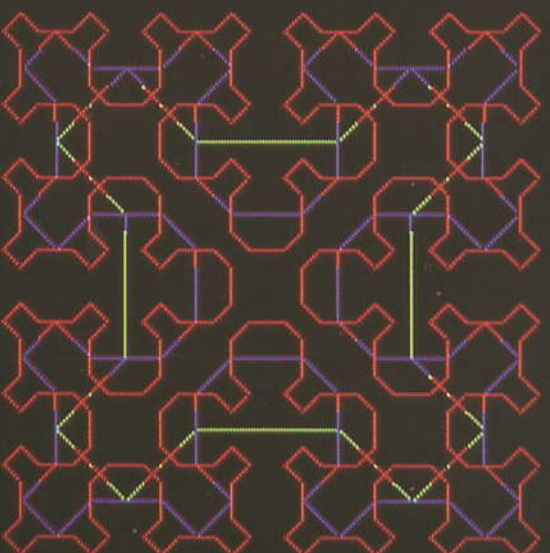
## Sample Character Compositions





# GIGI

SIERPINSKI CURVES OF ORDER 3



## GIGI SLIDE PROJECTION SYSTEM

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## Features

- Allows interactive creating and editing of slide trays for display on a monitor, large screen, or hardcopy printout
- Runs in these hardware/software environments:
  - RSTS/E on PDP-11
  - VAX/VMS
  - TOPS-20 on DECSYSTEM-20
- Designed for both new and experienced users
- Runs in either automatic or manual mode
- Interfaces with GIGI Graphics Editor, DEC-RTTE Text Editor, Data Plotting Package and Character Set Editor software packages.

## Description

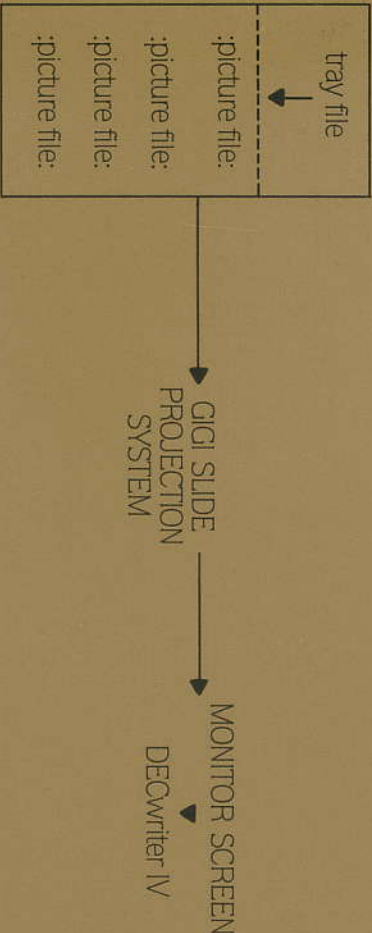
The GIGI Projection System gives you the capability to collect, arrange and display computer-generated images, similar to the way a slide projector shows slides taken with a camera. The Slide Projection System displays "slides" that have been created and stored using GIGI's Graphics Editor, Character Set Editor, Data Plotting Package, DEC-RTTE Text Editor, or your own applications programs.

The "slides" you wish to display are called picture files, and the "slide tray" is called a tray file. The GIGI terminal acts as the projector with a user-chosen display device: a monitor screen, a large projection screen, or

GIGI's special DECwriter IV graphics printer.

To create images and/or text, you use the GIGI keyboard and one of GIGI's interactive software packages or your own applications programs. Slide tray files can be edited using the Slide Projection System or any standard text editor. Slide displays are controlled automatically or manually. On automatic control, you set timing parameters at the start of a class or presentation which are automatically followed by the system. On manual, you control the timing and display of each slide as the presentation progresses. Also, in manual mode, you can skip over slides or return to slides already shown.

The Slide Projection System can be used by both new and experienced users in the educational environment. Students, teachers and administrators will appreciate the exciting presentation and display possibilities available to them with the GIGI Slide Projection System.



NATIONAL VOTE BY STATE - 1978

|    | Democrat | Democrat | Republican | Democrat | Republican | Democrat | Republican |
|----|----------|----------|------------|----------|------------|----------|------------|
| 1  | 447      | 240      | 651        | 651      | 651        | 1574     | 1574       |
| 2  | 444      | 237      | 654        | 654      | 654        | 1541     | 1541       |
| 3  | 172      | 614      | 147        | 339      | 339        | 1542     | 1542       |
| 4  | 411      | 373      | 111        | 395      | 395        | 1599     | 1599       |
| 5  | 484      | 425      | 252        | 473      | 473        | 1573     | 1573       |
| 6  | 510      | 341      | 455        | 315      | 315        | 1523     | 1523       |
| 7  | 384      | 357      | 644        | 333      | 333        | 1544     | 1544       |
| 8  | 444      | 271      | 517        | 415      | 415        | 1559     | 1559       |
| 9  | 427      | 223      | 338        | 547      | 547        | 1555     | 1555       |
| 10 | 331      | 270      | 315        | 354      | 354        | 1443     | 1443       |

The preceding figure is created by sending GIGI the following:

```

S(E)U(R,17,F1,50)
P(L240,250)U(I(G))C(F+220)
W(I(R),S1)C(F+200)
U(N1)
P(L-120,-120)
C(B)
C(F+240,+240)I,-240I,-240I,+240I
C(E)
  
```

In which key is this piece written?

D Major  
E Minor  
A Major

Answer:

EDUCATION COMPUTER SYSTEMS