

Shapes and Colors

By Johnny Jarrell

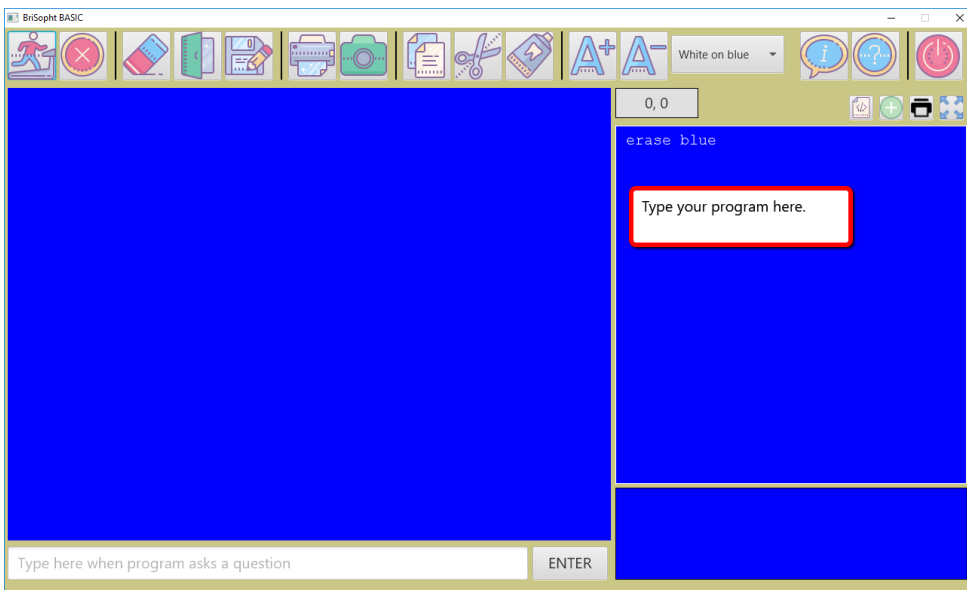
Contents

Erasing The Screen	3
Overview	3
New command	3
Instructions	3
Code listing.....	3
Drawing Squares	4
Overview	4
New commands	4
Instructions	4
Code listing.....	4
Drawing Circles.....	5
Overview	5
New command	5
Instructions	5
Code listing.....	5
Drawing Triangles.....	6
Overview	6
Instructions	6
Code listing.....	6
Drawing Rectangles.....	7
Overview	7
New command	7
Instructions	7
Code listing.....	7
Drawing A Scene	8
Overview	8
New commands	8
Instructions	8
Code listing.....	9

Erasing The Screen

Overview

In this lesson, we will take our first look at the **BriSopht** interface and create our first program that erases the screen with a color of your choice.



New command

- ERASE

Instructions

1. Have the students type the letter "e" in the code box.
2. The words end and erase should appear in the information box below the code box. Ask them finish typing erase in the code box.
3. Tell the students they will use the color blue first. Have them type a space after the ERASE command and type BLUE. The command "ERASE BLUE" should be in the code box. Tell the students to press the **RUN** button to see how the program will change the color of the screen.
4. Let them experiment by changing the color. They can press the **Help (?)** button in the upper right for colors and their names.
5. Ask the students to explain what the **ERASE** command does.

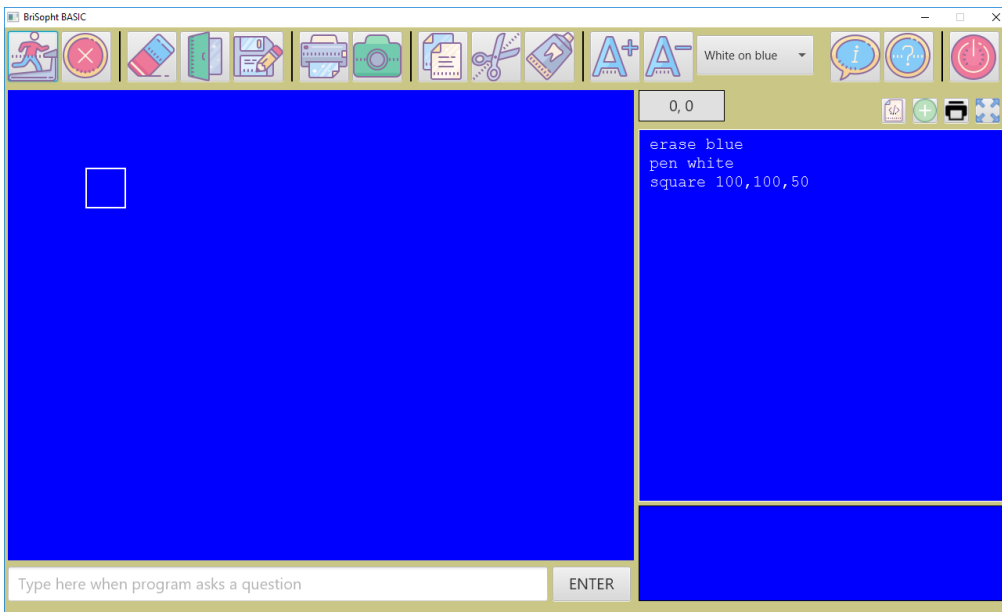
Code listing

```
ERASE BLUE
```

Drawing Squares

Overview

In this lesson, we will learn how to draw squares and change the drawing color.



New commands

- PEN
- SQUARE

Instructions

1. The first thing the student will need to do in their program is to have it ERASE the screen. For this lesson, let us use erase blue.
2. Next they will need to set the PEN color for setting the drawing color.
3. For this lesson, let us use **pen white**.
4. Now we will add a square. Type the word SQUARE in the code box.
5. The square needs an x-coordinate, y-coordinate and a size. Explain to the students what coordinates are. Coordinate (0, 0) is the upper left corner and coordinate (799, 599) is the bottom right corner. Type square 100,100,50
6. Have the students **RUN** the program.
7. Let them experiment by changing the color of the pen and background.
8. Let them experiment by changing the x/y coordinate values and size.
9. Ask the students to explain what the SQUARE command does.
10. Ask the students to explain what the PEN command does.

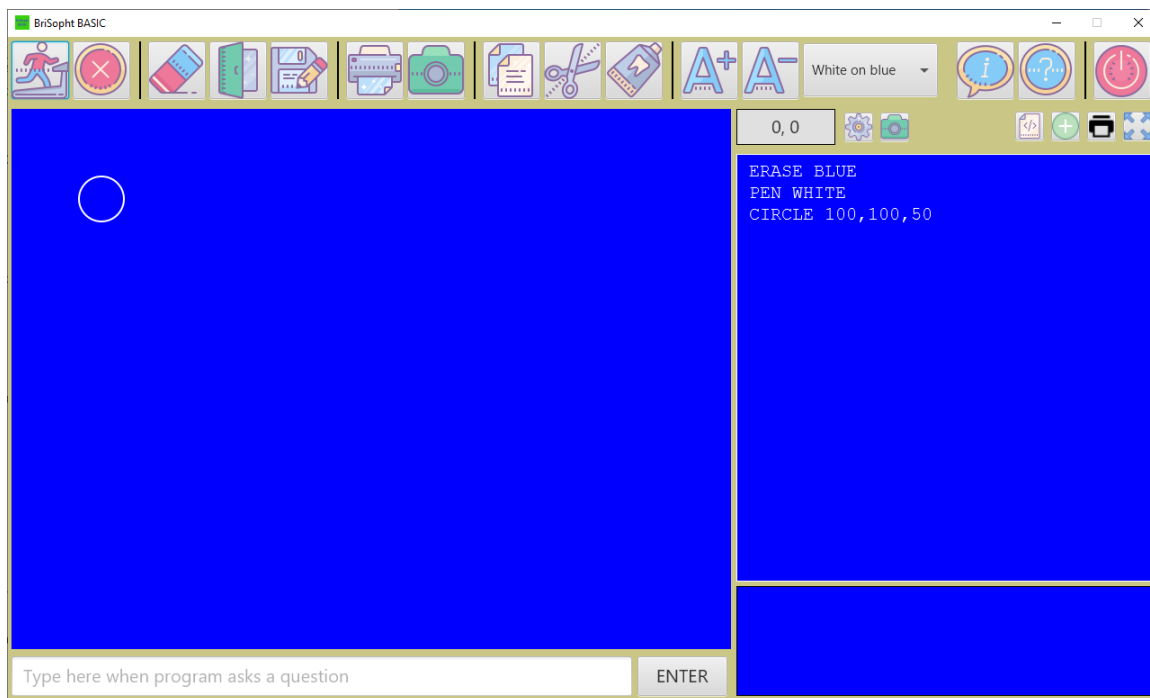
Code listing

```
ERASE BLUE  
PEN WHITE  
SQUARE 100,100,50
```

Drawing Circles

Overview

In this lesson, we will learn how to draw circles.



New command

- CIRCLE

Instructions

1. Explain what a circle is and what the radius is.
2. The first thing the student will need to do in their program is to have it **ERASE** the screen. For this lesson, let us use erase blue.
3. Next they will need to set the **PEN** color for setting the drawing color. For this lesson, let us use pen white.
4. Now we will add a circle.
5. The circle needs an x-coordinate, y-coordinate and a radius. Remind the students what coordinates are. The coordinate will be the center of the circle. Type circle 100,100,50
6. Have the students **RUN** the program.
7. Let them experiment by changing the color of the pen and background.
8. Let them experiment by changing the x/y coordinate and radius values.
9. Ask the students to explain what the **CIRCLE** command does.
10. Ask the students to explain what the radius of a circle is.

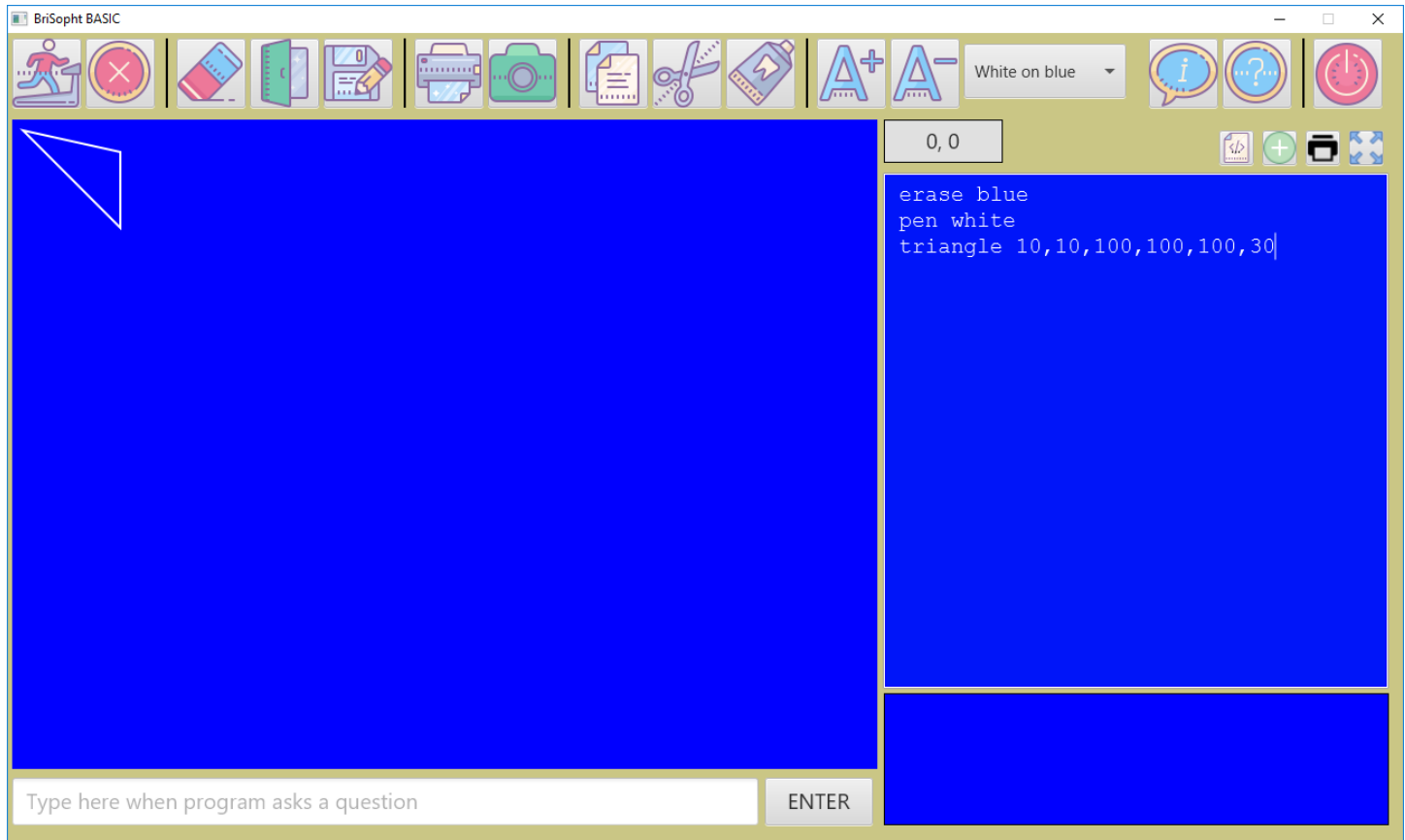
Code listing

```
ERASE BLUE  
PEN WHITE  
CIRCLE 100,100,50
```

Drawing Triangles

Overview

In this lesson, we will learn how to draw triangles.



Instructions

1. The first thing the student will need to do in their program is to have it **ERASE** the screen. For this lesson, let us use erase blue.
2. Next they will need to set the **PEN** color for setting the drawing color. For this lesson, let us use pen white.
3. Now we will add a triangle.
4. The triangle needs an x-coordinate, y-coordinate for each of the three points. Remind the students what coordinates are. Type `TRIANGLE 10,10,100,100,100,30`
5. Have the students **RUN** the program.
6. Let them experiment by changing the color of the pen and background.
7. Let them experiment by changing the x/y coordinates to create different triangles.
8. Ask the students to explain what the **TRIANGLE** command does.

Code listing

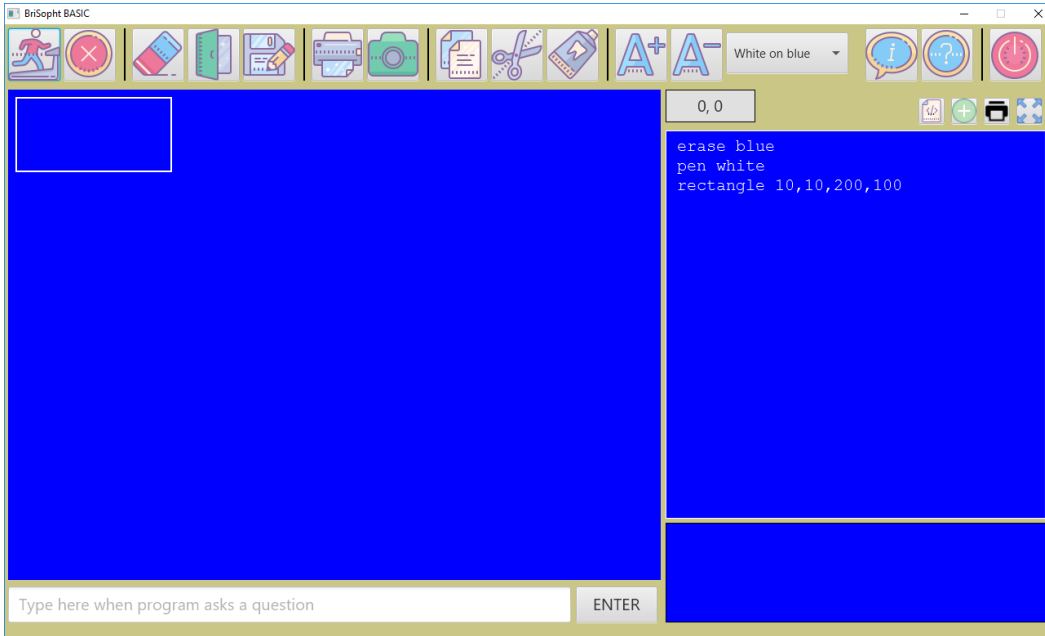
```
ERASE BLUE  
PEN WHITE  
TRIANGLE 10,10,100,100,100,30
```

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Drawing Rectangles

Overview

In this lesson, we will draw rectangles.



New command

- **RECTANGLE**

Instructions

1. The first thing the student will need to do in their program is to have it **ERASE** the screen. For this lesson, let us use **erase blue**.
2. Next, they will need to set the **PEN** color for setting the drawing color. For this lesson, let us use **pen white**.
3. Now we will add a rectangle.
4. The rectangle needs an x-coordinate, y-coordinate for the top-left corner and bottom-right corner. Remind the students what coordinates are. Type **RECTANGLE 10, 10, 100, 100**
5. Have the students **RUN** the program.
6. Let them experiment by changing the color of the pen and background.
7. Let them experiment by changing the x/y coordinates to create different rectangles.
8. Ask the students to explain what the **RECTANGLE** command does.

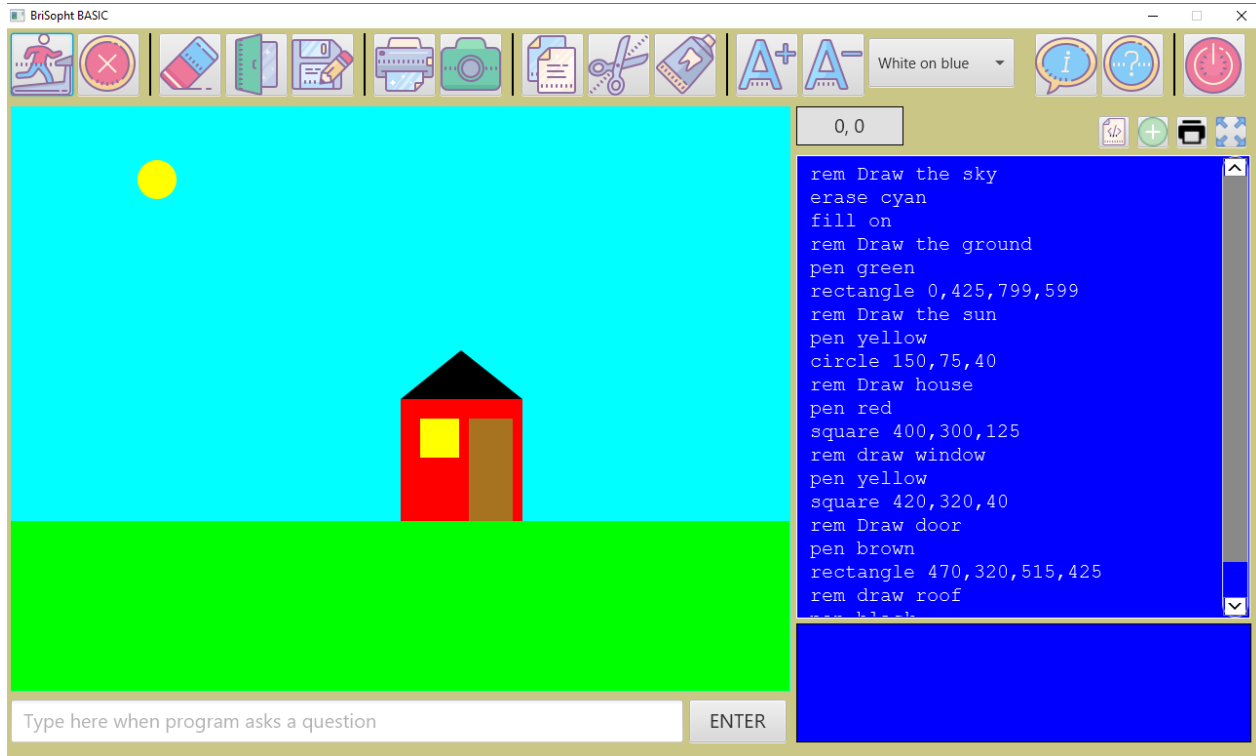
Code listing

```
ERASE BLUE  
PEN WHITE  
RECTANGLE 10,10,200,100
```

Drawing A Scene

Overview

In this lesson, we will draw a simple scene with the shapes we have learned about.



New commands

- FILL
- REM

Instructions

1. In this lesson will will draw a simple scene with a house, sky, sun and ground using shape commands we have learned about.
2. Explain how the **FILL** command will fill the shape with the **PEN** color. Use **FILL ON** and **FILL OFF** to control if a shape is filled or not.
3. The **REM** command stands for remark or comment. Any text after the the **REM** command will not be processed and is used to document the program. This will make it easier to modify when you come back to it or someone else is using your code.
4. Create a handout with the code and let the students type it in.
5. Have the students **RUN** the program.
6. Let them experiment by changing the colors to personalize their house.
7. Ask the students to explain what the **FILL** command does.
8. Ask the students to explain what the **REM** command does.

Code listing

```
REM DRAW THE SKY
ERASE CYAN
FILL ON
REM DRAW THE GROUND
PEN GREEN
RECTANGLE 0,425,799,599
REM DRAW THE SUN
PEN YELLOW
CIRCLE 150,75,40
REM DRAW HOUSE
PEN RED
SQUARE 400,300,125
REM DRAW WINDOW
PEN YELLOW
SQUARE 420,320,40
REM DRAW DOOR
PEN BROWN
RECTANGLE 470,320,515,425
REM DRAW ROOF
PEN BLACK
TRIANGLE 400,300,525,300,462,250
```