Uni Studies 3:
Intro to Processing 3

Assoc. Professor Donald J. Patterson
Uni Stu 3 Fall 2012

Intro to Processing

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Intro to Processing

- What the heck is Processing?
  - A programming language
  - An environment for running the programs

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- What is it for?
  - It is for people who want to create
    - images
    - animations
    - interactions

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  - A programming language
  - An environment for running the programs
- What is it for?
  - It is for people who want to create
    - images
    - animations
    - interactions
- Who is it for?
    - students
    - artists
    - designers
    - researchers
    - hobbyists

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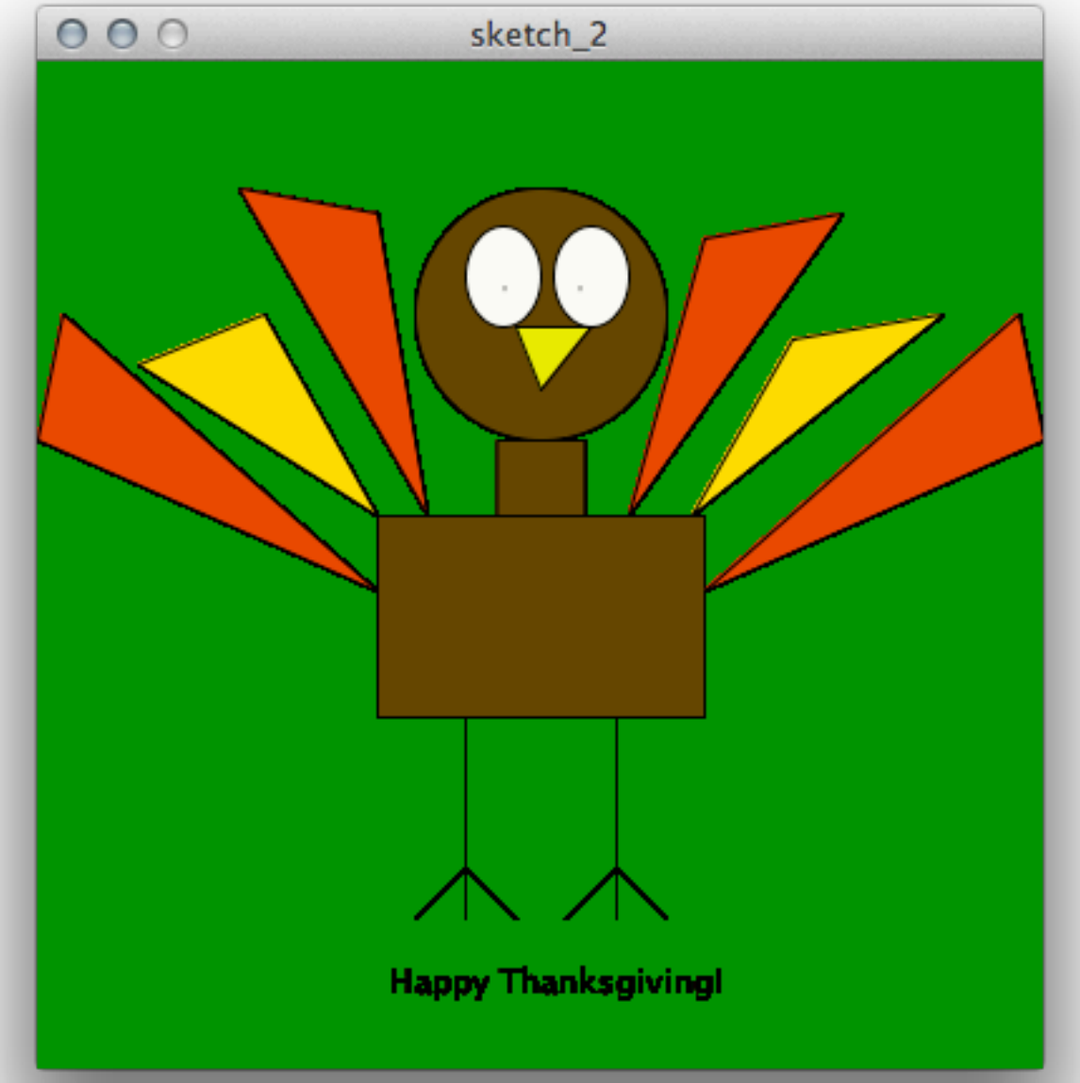
Assignment 02



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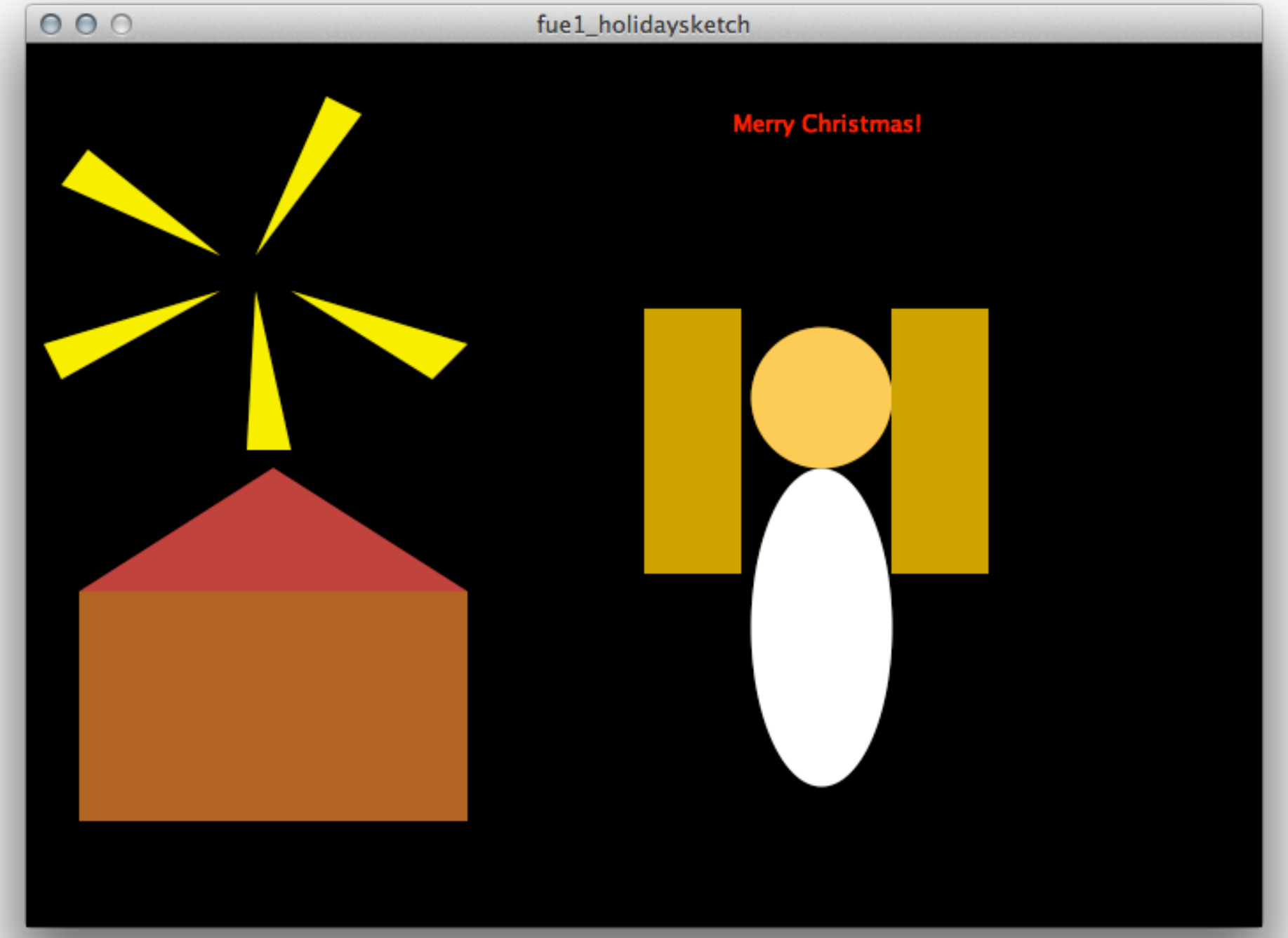

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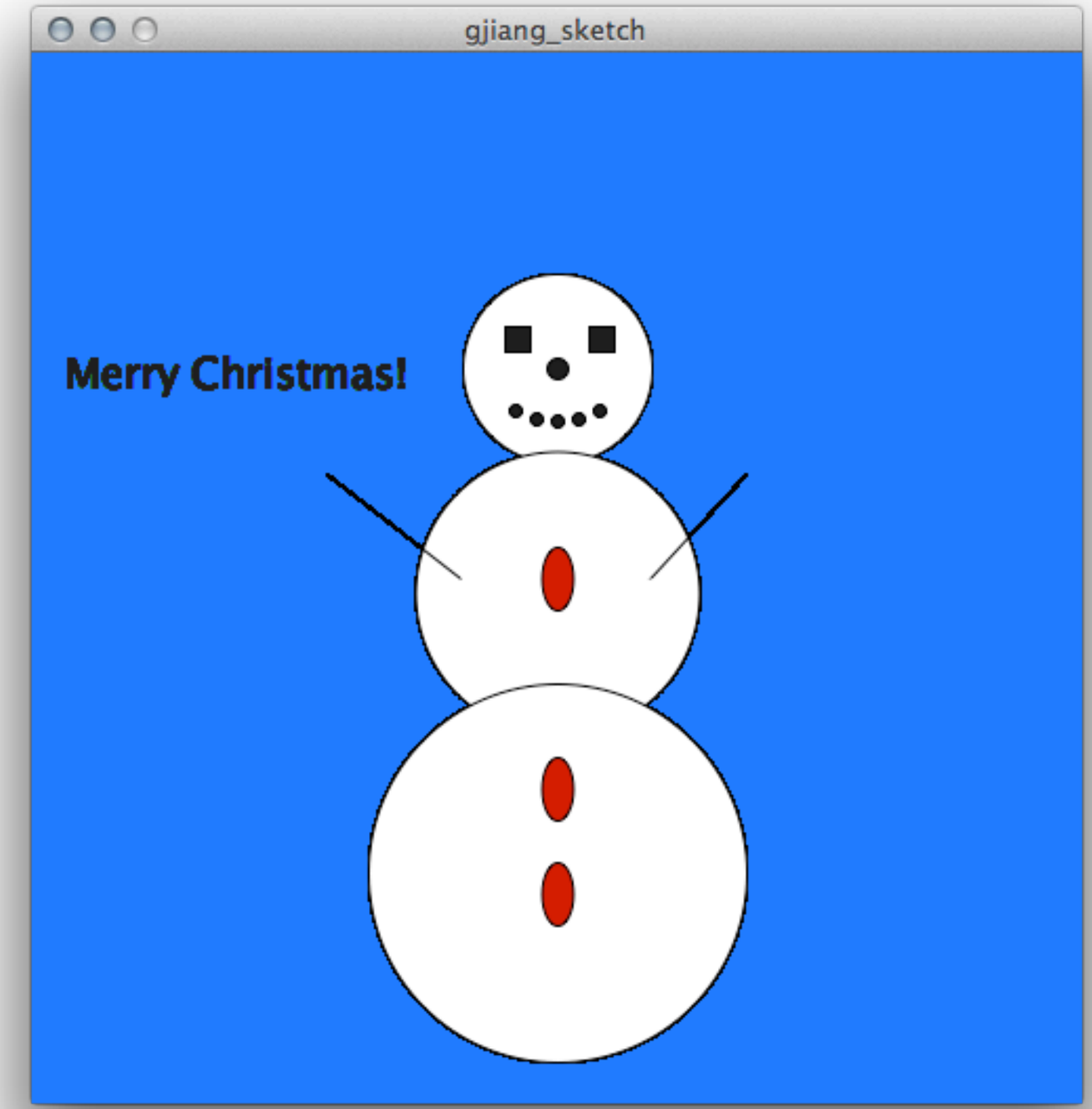

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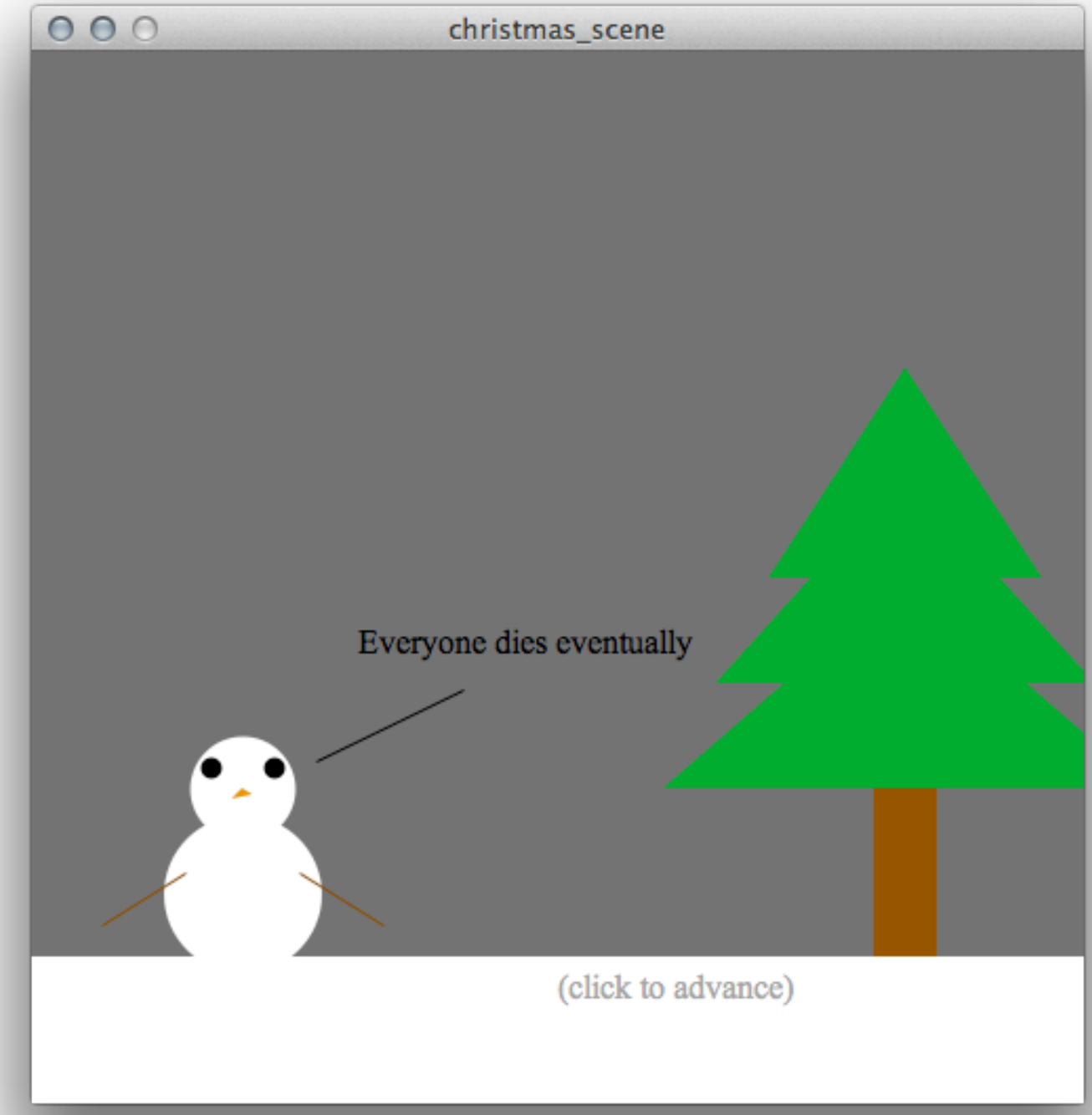

Assignment 02

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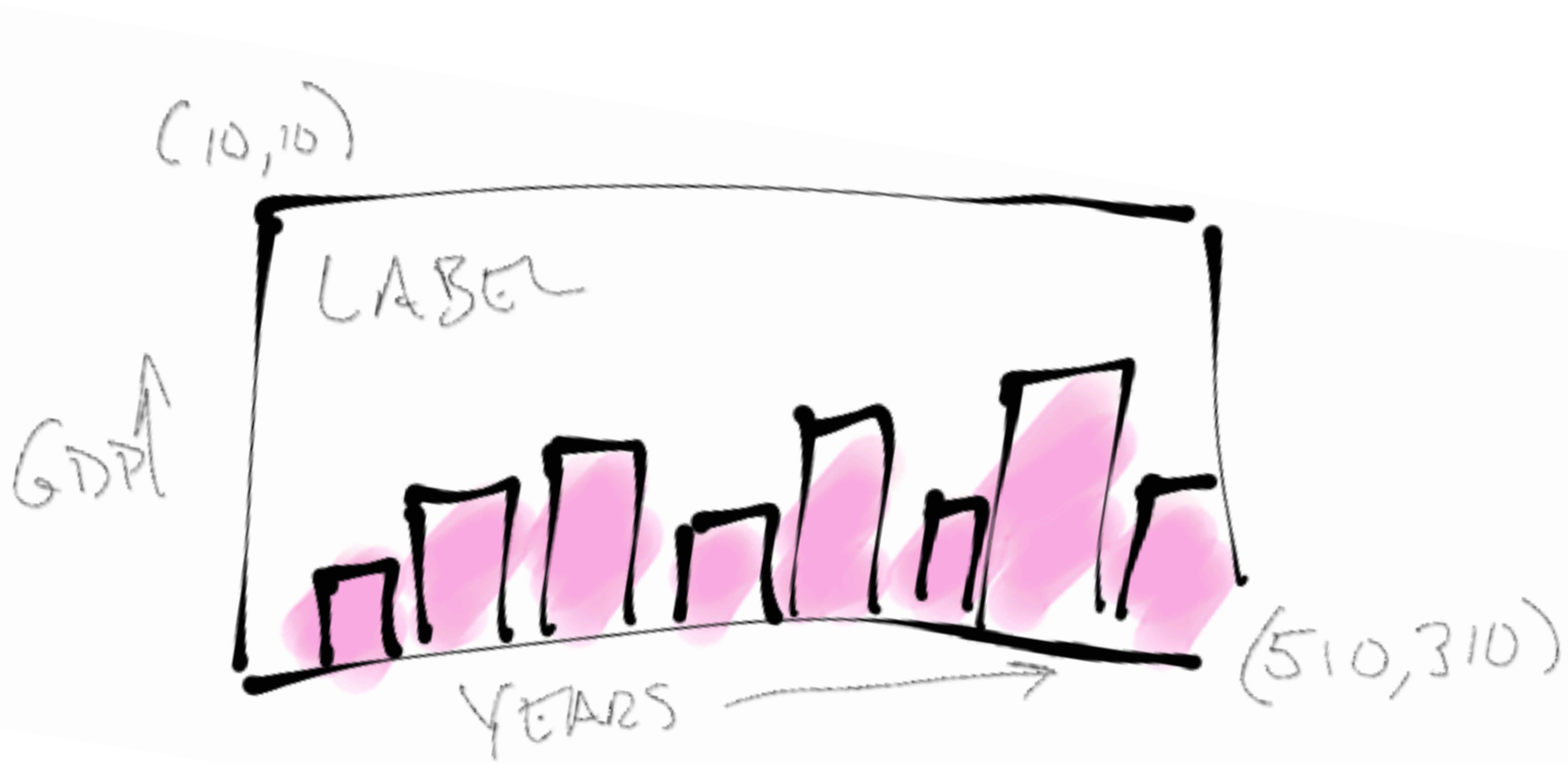
- Let's walk through how to make a graph in Processing
    - Plan out your graph
    - What data do you want to graph?
    - How is it going to be laid out?
    - What is it going to look like?



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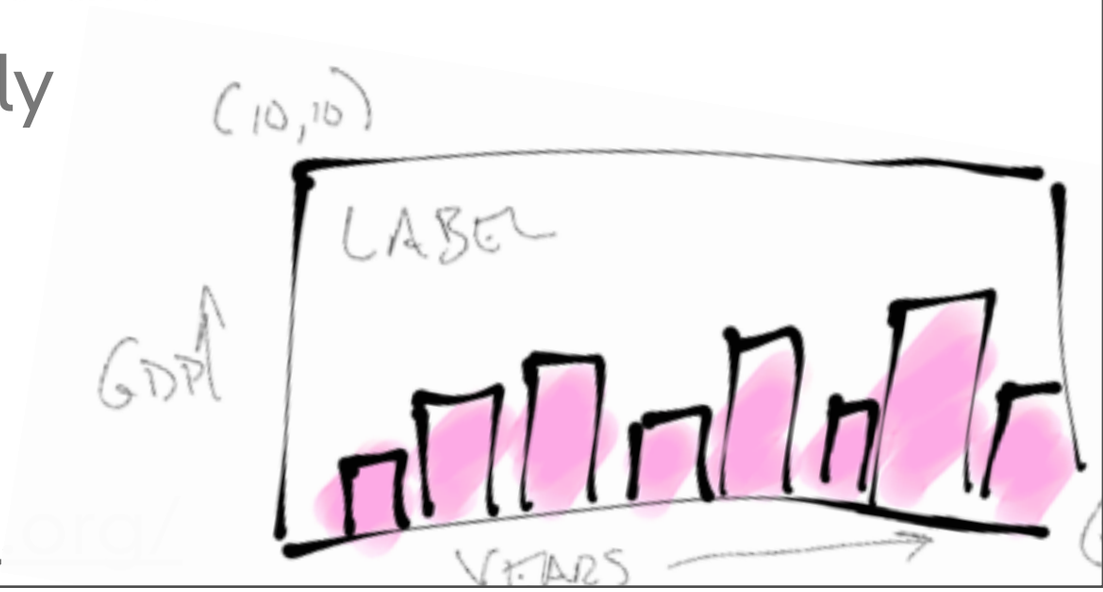
- Let's walk through how to make a graph in Processing
  - Option 1:
    - Draw each square on a bar chart individually
      - Calculate the corners of the graph
        - Draw a black line for the border
      - Calculate how many bars you have
      - Figure out how wide to make them
      - Figure out how tall to make them
        - Convert the data to pixel distances
      - Figure out where the corners are
      - Draw each shape individually



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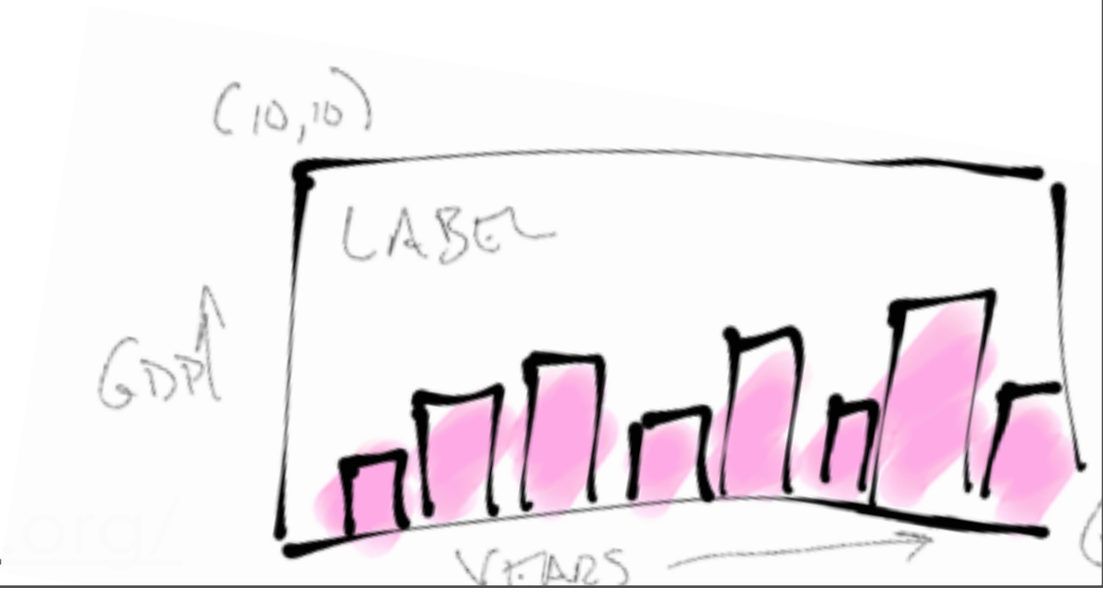
- Let's walk through how to make a graph in Processing
  - Option 2:
    - Use a computer code that someone else has written to do all that and focus on the design.
    - This is called using a library
    - You must "install" the library so that you can use it



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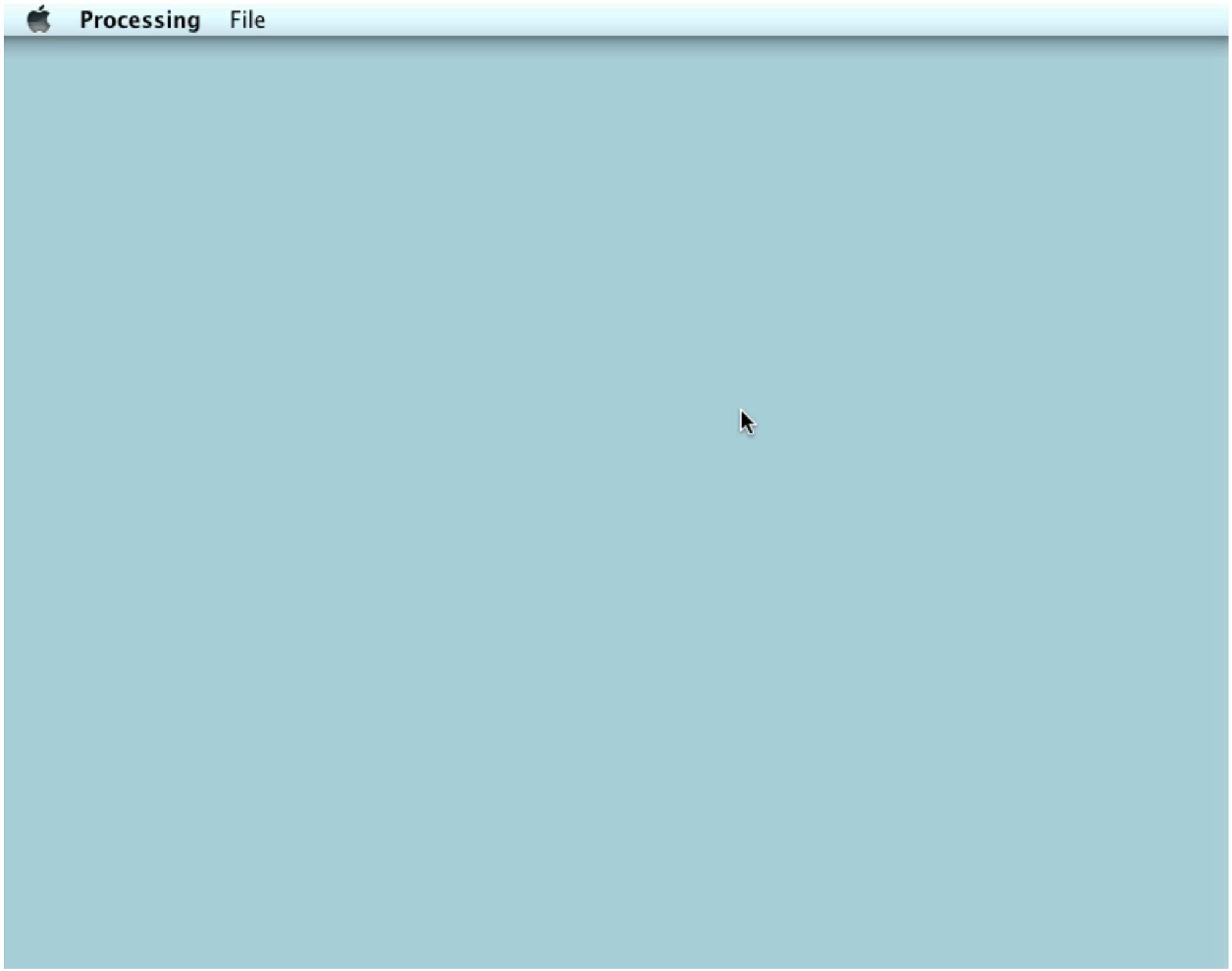

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- How do you use the library?
  - Include the extra code that is going to do the hard work for you
    - At the top of the sketch, tell Processing you are going to use a library

```
import org.gicentre.utils.stat.*;          // For chart classes.
```

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- How do you use the library?
  - Create some variables to represent the chart.

```
BarChart barChart;
PFont titleFont,smallFont;
```

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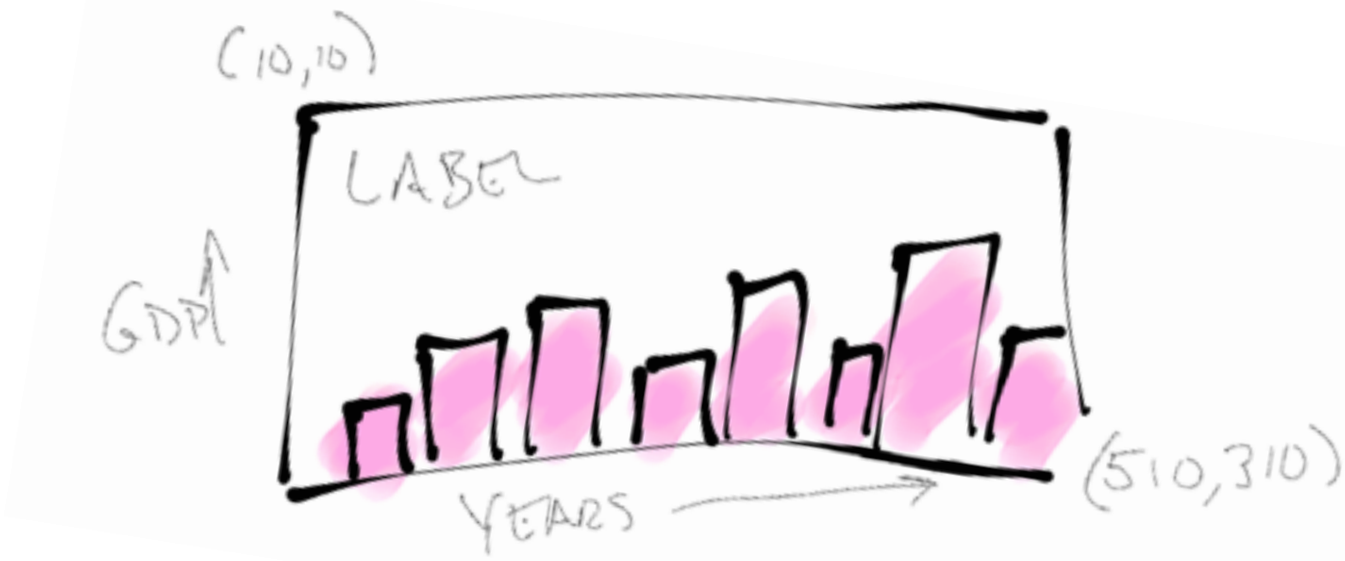
- How do you use the library?
  - Inside setup()
    - Do some basic setup:

```
size(520,320);
smooth();
noLoop();
```



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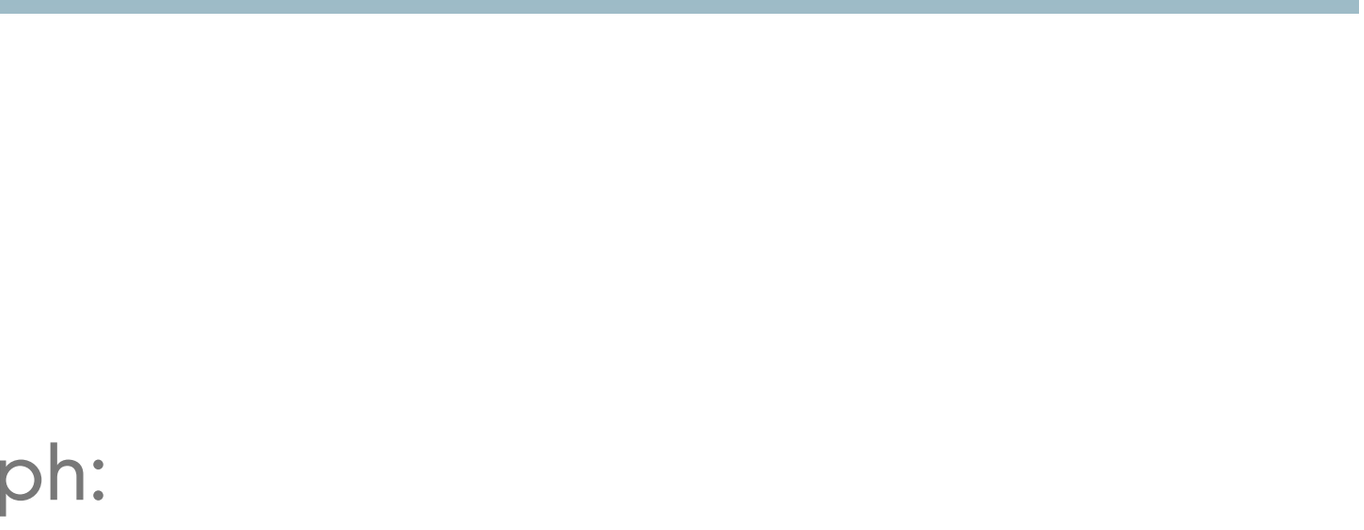
- How do you use the library?
  - Inside setup()
    - Pick the fonts for the graph:

```
titleFont = createFont("Helvetica",22);
smallFont = createFont("Helvetica",10);
textFont(smallFont);
```



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- How do you use the library?
  - Inside setup()
    - Build the bar chart from the data

```
barChart = new BarChart(this);
barChart.setData(new float[] {2462,2801,3280,3983, 4490, 4894, 5642, 6322, 6489,
                              6401,7657,9649,9767,12167,15154,18200,23124,28645});
barChart.setBarLabels(new String[] {"1830","1840","1850","1860","1870","1880","1890",
                                    "1900","1910","1920","1930","1940","1950","1960",
                                    "1970","1980","1990","2000"});
barChart.setBarColour(color(200,80,80,100));
barChart.setBarGap(2);
barChart.setValueFormat("$###,###");
barChart.showValueAxis(true);
barChart.showCategoryAxis(true);
```

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- How do you use the library?
  - Inside draw()
    - Display the bar chart

```
void draw()
{
  background(255);

  barChart.draw(10,10,width-10,height-10);
  fill(120);
  textFont(titleFont);
  text("Income per person, United Kingdom", 70,30);
  float textHeight = textAscent();
  textFont(smallFont);
  text("Gross domestic product measured in inflation-corrected $US", 70,30+textHeight);
}
```

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- Where is the information on how to use the library?

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Goldfrapp: Solar

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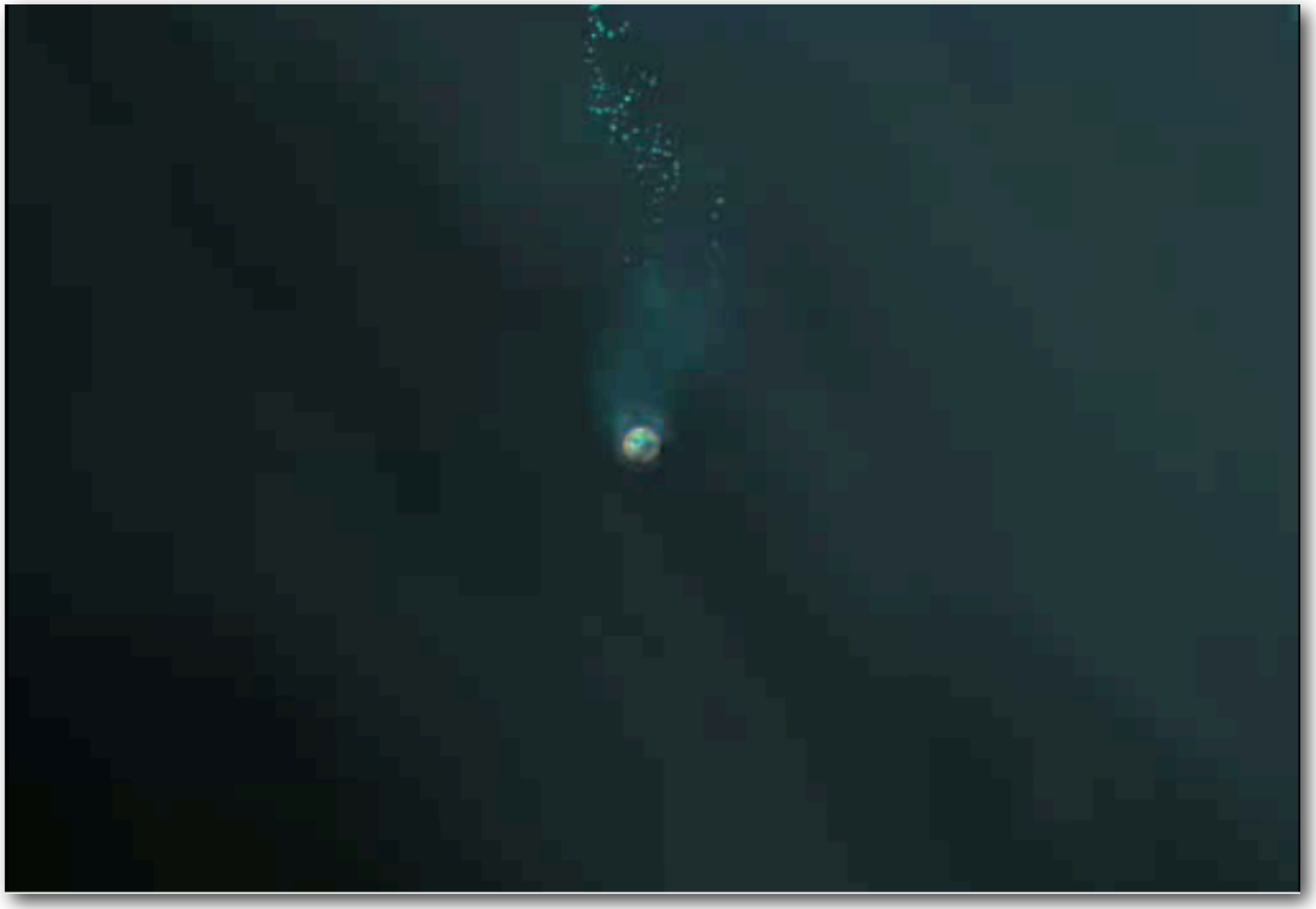
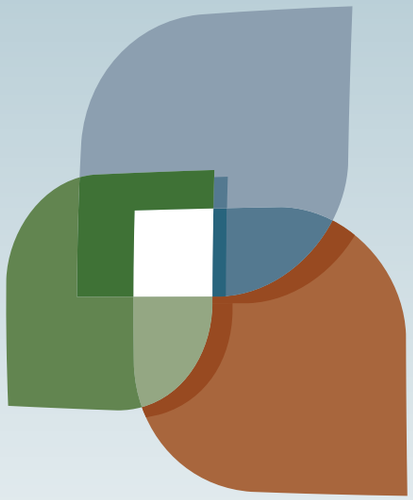


Weird Fishes: Radiohead



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