Uni Studies 3:
Intro to Processing 3

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http://processing.org/
http://processing.org/
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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What the heck is Processing?
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- It is for people who want to create
  - images
  - animations
  - interactions

Who is it for?
- students
- artists
- designers
- researchers
- hobbyists

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Happy Thanksgiving!
Merry Christmas!
Merry Christmas!
Happy Thanksgiving!
Everyone dies eventually

(click to advance)
Happy Holidays!

Click me!
• 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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• 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

```java
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;
```
• How do you use the library?
  • Inside `setup()`
    • Do some basic setup:

```java
size(520,320);
smooth();
noloop();
```

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

```java
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

```java
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",
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

```java
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
Weird Fishes: Radiohead