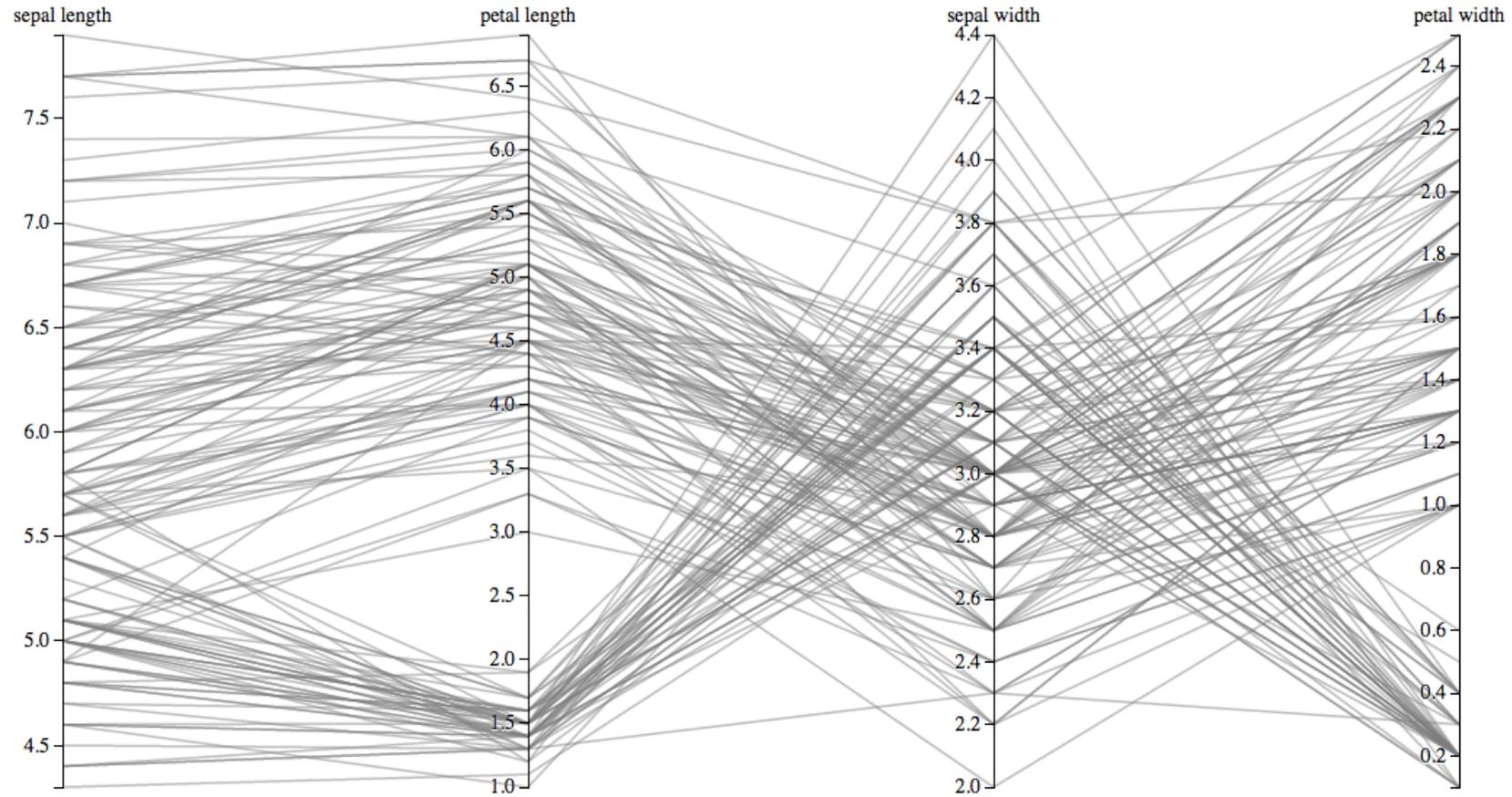


# Data Visualisation

Week 5 – Parallel Coordinates

# Parallel Coordinates



# Files

- pcp.html
- pcp.js (being linked into the HTML file)
- iris.csv

iris.csv

species,sepal length,sepal width,petal length,petal width

setosa,5.1,3.5,1.4,0.2

setosa,4.9,3,1.4,0.2

setosa,4.7,3.2,1.3,0.2

setosa,4.6,3.1,1.5,0.2

setosa,5,3.6,1.4,0.2

# Setup

- Create an array for the trait values (Y-axes)
  - `var traits = ["sepal length", "petal length", "sepal width", "petal width"];`
  - Note this is also the title of each column in the CSV file.
- Setup canvas (note a different style of coding)
  - `var m = [80, 160, 200, 160],`
  - `w = 1280 - m[1] - m[3],`
  - `h = 800 - m[0] - m[2];`

# Setup

```
var x = d3.scale.ordinal().domain(traits).rangePoints([0, w]),  
    y = {};
```

A "place" to store scales of multiple Y axes.

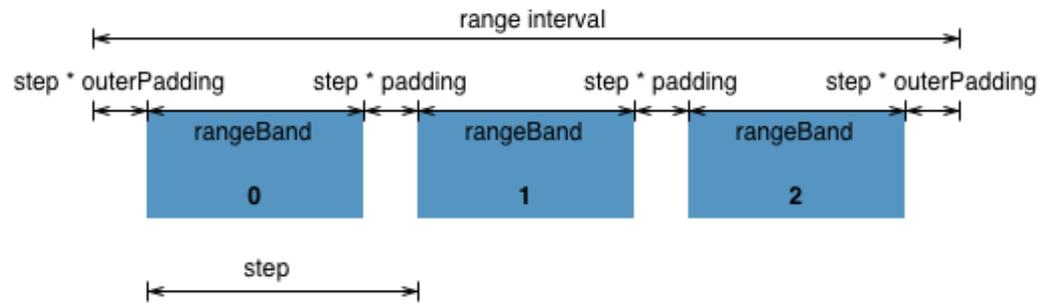
Scale for the X Axis

```
var line = d3.svg.line(),  
    axis = d3.svg.axis().orient("left"),  
    foreground;
```

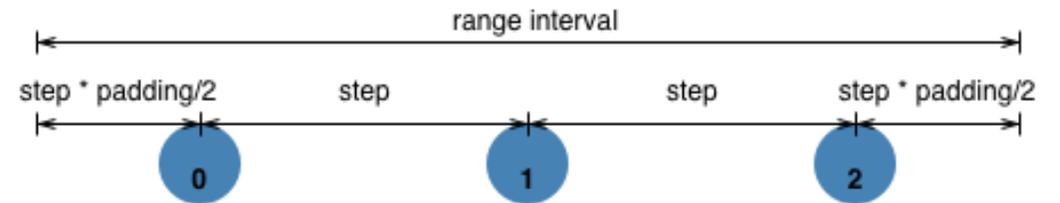
Line drawer

X Axis

# rangeBands and rangePoints



rangeBands



rangePoints

# Overview of Method

1. Create one Y scale for each trait
2. Draw lines
3. Draw Y axes for each trait

# Create Y Axis Scales

```
traits.forEach(function(d) {  
    y[d] = d3.scale.linear()  
        .domain(d3.extent(flowers, function(p) { return p[d]; }))  
        .range([h, 0]);  
});
```

# Draw Lines

```
foreground = svg.append("g")
    .attr("class", "foreground")
    .selectAll("path")
    .data(flowers)
    .enter().append("path")
    .attr("d", path)
    .style("stroke", "grey");

function path(d) {
    return line(traits.map(function(p) {
        return [x(p), y[p](d[p])];
    }));
}
```

# Draw Y Axes

```
var g = svg.selectAll(".trait")
    .data(traits)
    .enter().append("g")
    .attr("class", "trait")
    .attr("transform", function(d) { return "translate(" + x(d) + ")";
})

g.append("g")
    .attr("class", "axis")
    .each(function(d) { d3.select(this).call(axis.scale(y[d])); })
    .append("text")
    .attr("text-anchor", "middle")
    .attr("y", -9)
    .text(function(d) { return d; });
```