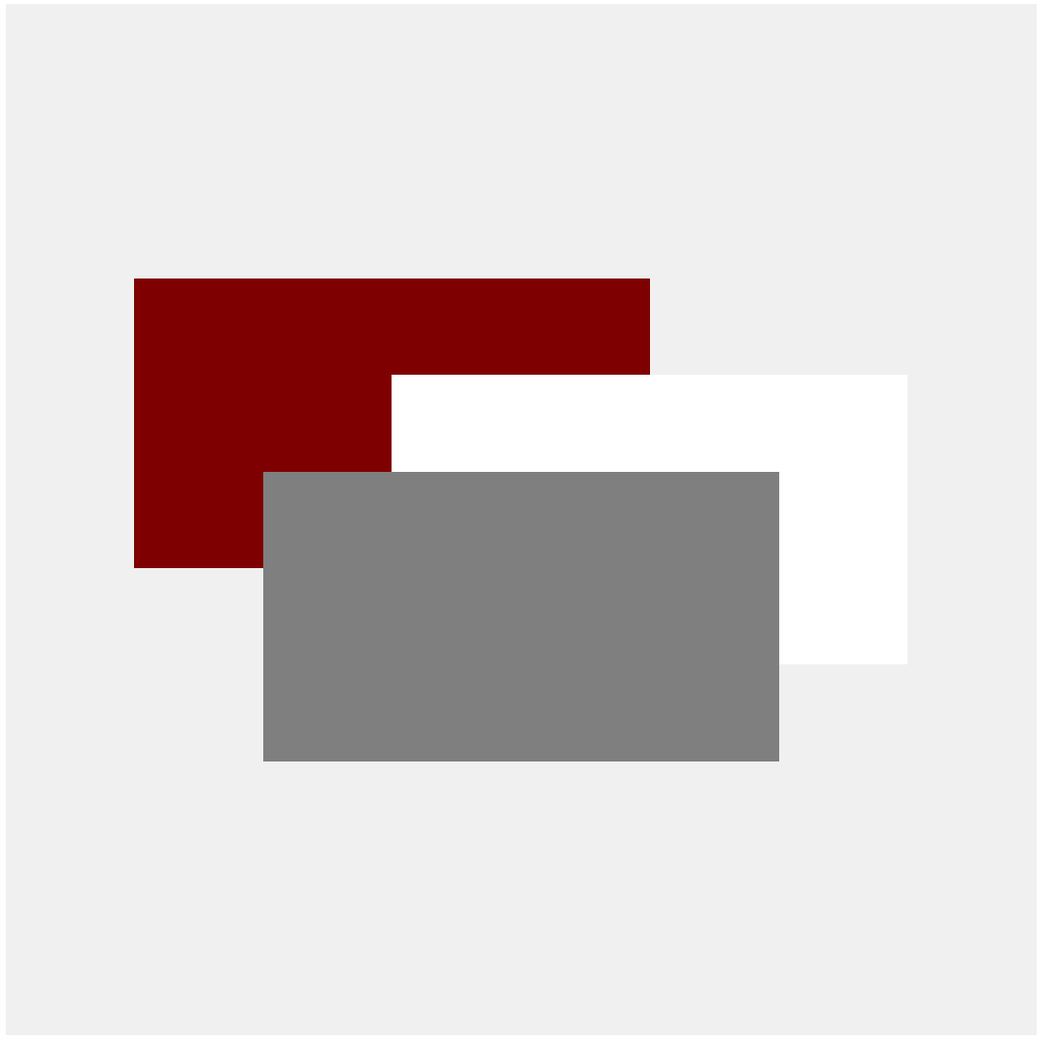
Deck



a Go package for presentations

DECK: a package for presentations

Deck is a package written in Go

That uses a singular markup language

With elements for text, lists, code, and graphics

All layout and sizes are expressed as percentages

Clients are interactive or create formats like PDF or SVG

Servers use a RESTful API to list, upload, stop, start, remove decks

Elements

text element

Hello, World (plain text)

A block of text, word-wrapped to a specified width. You may specify the size, font, line spacing, color, and opacity.

```
package main

import "fmt"

func main() {
    fmt.Println("hello, world")
}
```

list element

- Point A
- Point B
- Point C
- Point D

First item
Second item
The third item
the last thing

1. This
2. That
3. The other
4. One more

```
<list xp="5" yp="70" sp="3"
    type="bullet"
    font="sans"
    color="rgb(0,127,0)">
   <li>Point A</li>
   <li>Point B</li>
   <li>Point C</li>
   <li>Point D</li>
</list>
```

```
<list xp="35" yp="70" sp="3"
    type="plain"
    font="serif"
    color="rgb(0,0,127)">
   <li>First item</li>
   <li>Second item</li>
   <li>The third item</li>
   <li>the last thing</li>
</list>
```

```
<list xp="70" yp="70" sp="3"
    type="number"
    font="mono"
    color="black">
   <li>This</li>
   <li>That</li>
   <li>The other</li>
   <li>One more</li>
</list>
```

image element

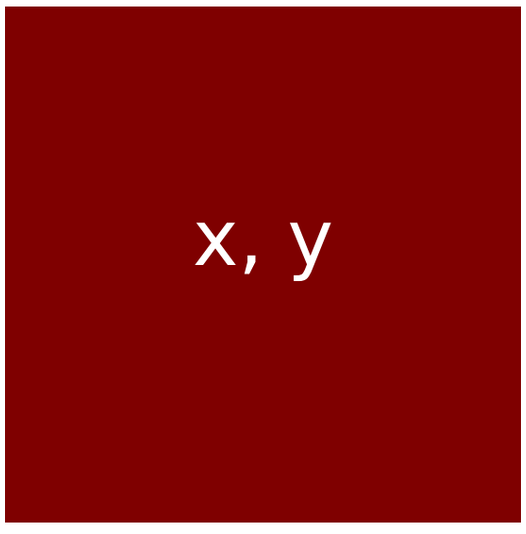
height

width

```
<image xp="50" yp="50" width="360" height="203" name="desert2.jpg"/>
```

rect element

height (relative to element or canvas width)

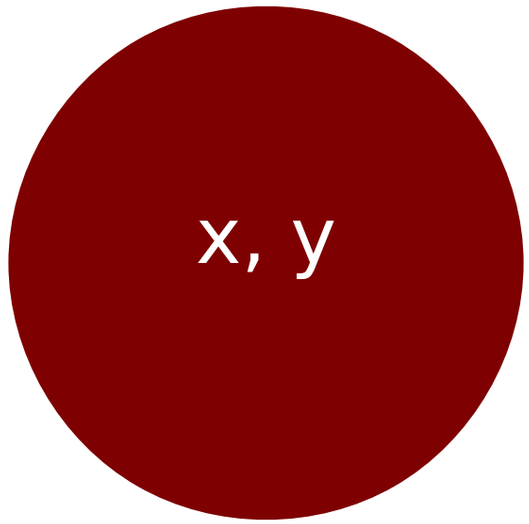


width

```
<rect xp="50" yp="50" wp="20" hr="100"/>
```

ellipse element

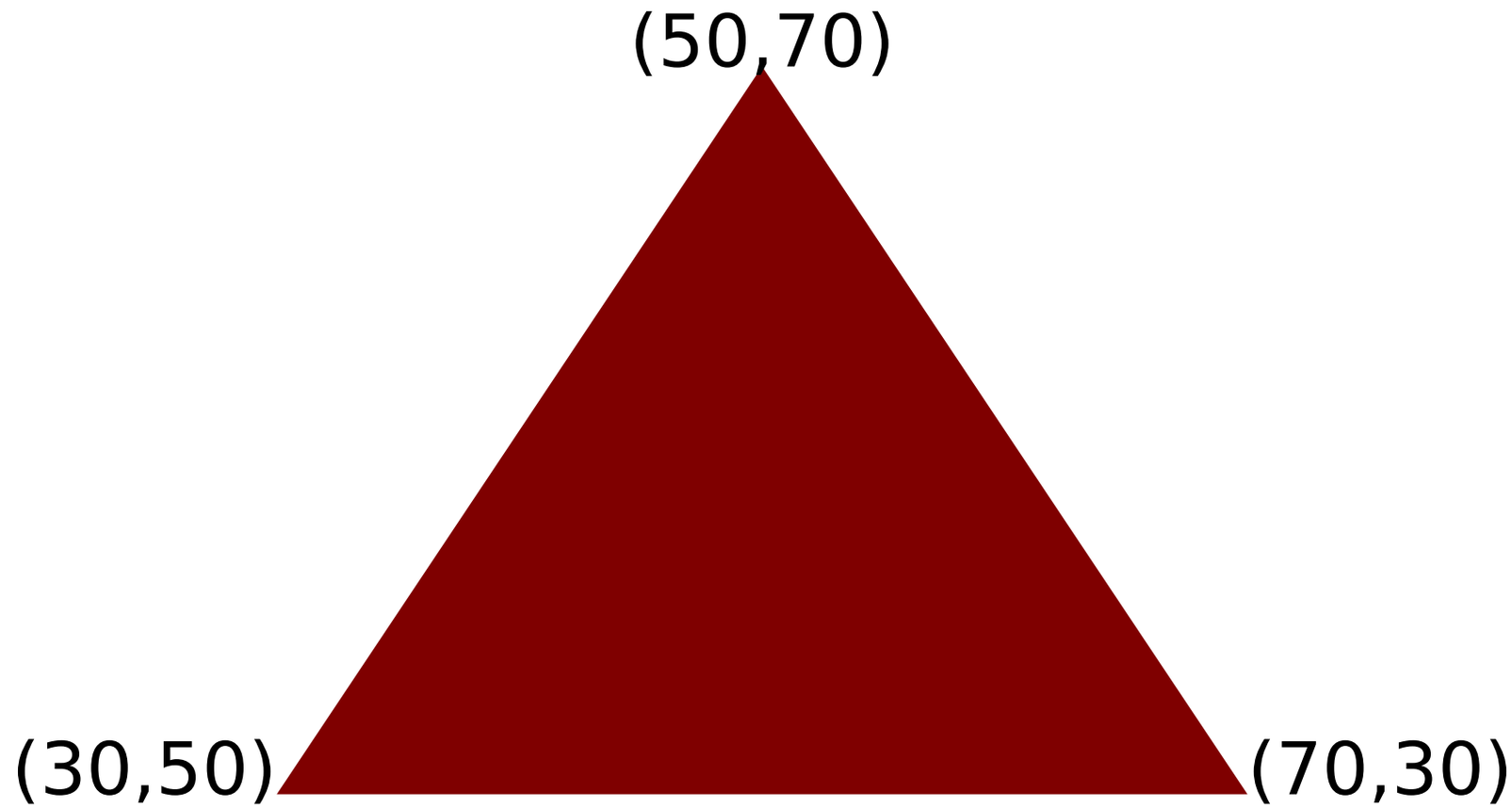
height (relative to element or canvas width)



width

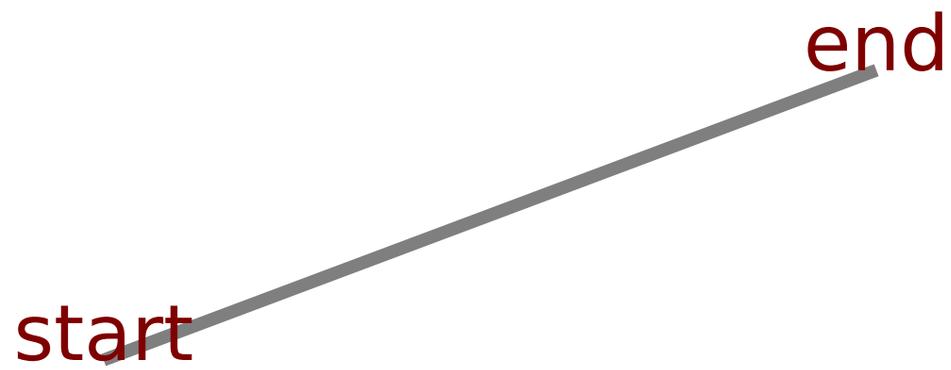
```
<ellipse xp="50" yp="50" wp="20" hr="100"/>
```

polygon element



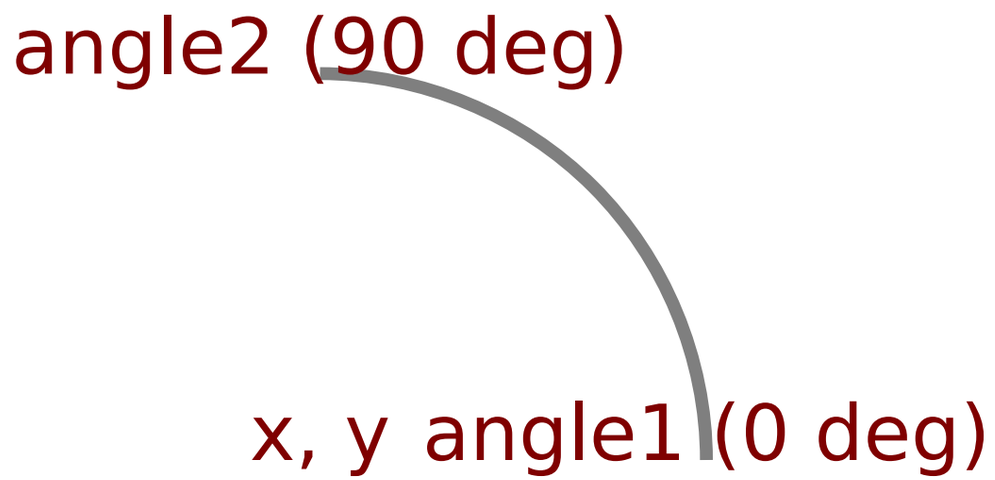

```
<polygon xc="30 50 70" yc="30 70 30"/>
```

line element



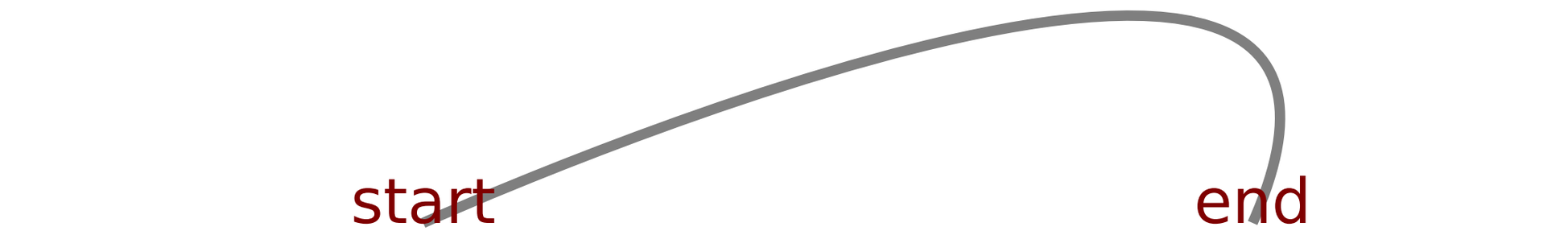

```
<line xp1="35" yp1="50" xp2="65" yp2="65"/>
```

arc element




```
<arc xp="50" yp="50" wp="30" hp="30" a1="0" a2="90"/>
```

curve element




```
<curve xp1="30" yp1="50" xp2="80" yp2="80" xp3="70" yp3="50"/>
```

Markup and Layout

Start the deck

Set the canvas size

Begin a slide

Place an image

Draw some text

Make a bullet list

End the list

Draw a line

Draw a rectangle

Draw an ellipse

Draw an arc

Draw a quadratic bezier

Draw a polygon

End the slide

End of the deck

```
<deck>
  <canvas width="1024" height="768" />
  <slide bg="white" fg="black">
      <image xp="70" yp="60" width="256" height="179" name="work.png" caption="Desk"/>
      <text  xp="20" yp="80" sp="3" link="http://goo.gl/Wm05Ex">Deck elements</text>
      <list  xp="20" yp="70" sp="2" type="bullet">
         <li>text, list, image</li>
         <li>line, rect, ellipse</li>
         <li>arc, curve, polygon</li>
      </list>
      <line    xp1="20" yp1="10" xp2="30" yp2="10"/>
      <rect    xp="35"  yp="10" wp="4" hr="75" color="rgb(127,0,0)"/>
      <ellipse xp="45"  yp="10" wp="4" hr="75" color="rgb(0,127,0)"/>
      <arc     xp="55"  yp="10" wp="4" hp="3" a1="0" a2="180" color="rgb(0,0,127)"/>
      <curve   xp1="60" yp1="10" xp2="75" yp2="20" xp3="70" yp3="10" />
      <polygon xc=75 75 80" yc="8 12 10" color="rgb(0,0,127)"/>
  </slide>
</deck>
```

Anatomy of a Deck

Deck elements

- text, list, image
- line, rect, ellipse
- arc, curve, polygon

Desk

Text and List Markup

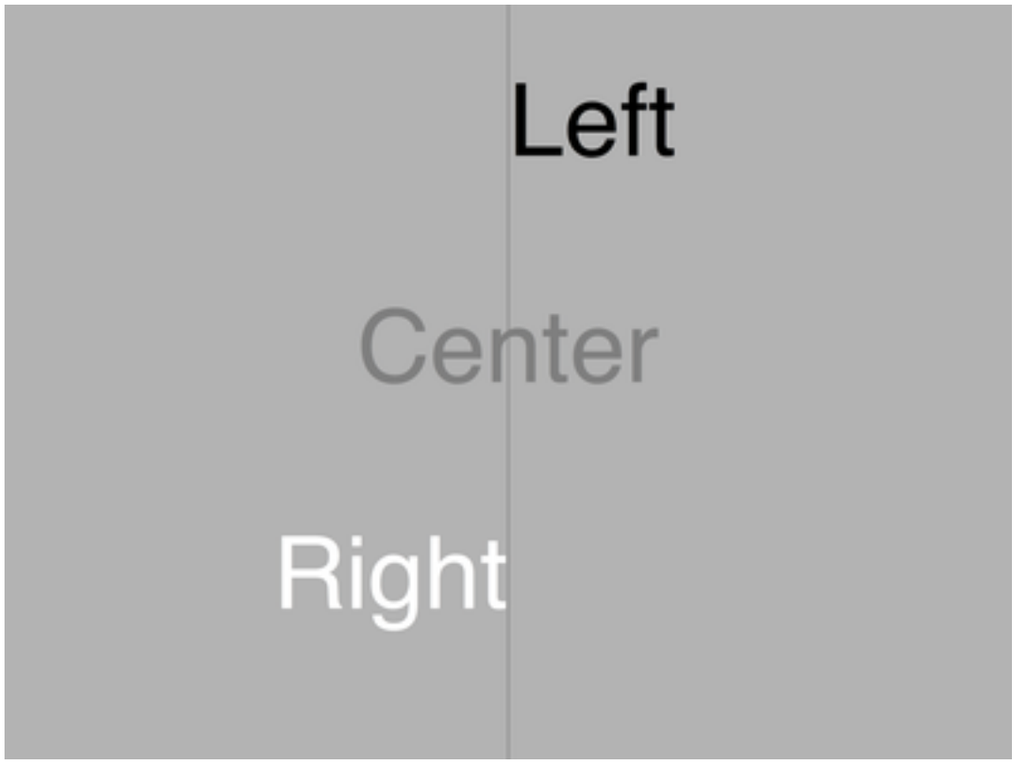
Position, size	`<text xp="..." yp="..." sp="...">`
Block of text	`<text ... type="block">`
Lines of code	`<text ... type="code">`
Attributes	`<text ... color="..." opacity="..." font="..." align="..." link="...">`

Position, size	`<list xp="..." yp="..." sp="...">`
Bullet list	`<list ... type="bullet">`
Numbered list	`<list ... type="number">`
Attributes	`<list ... color="..." opacity="..." font="..." align="..." link="...">`

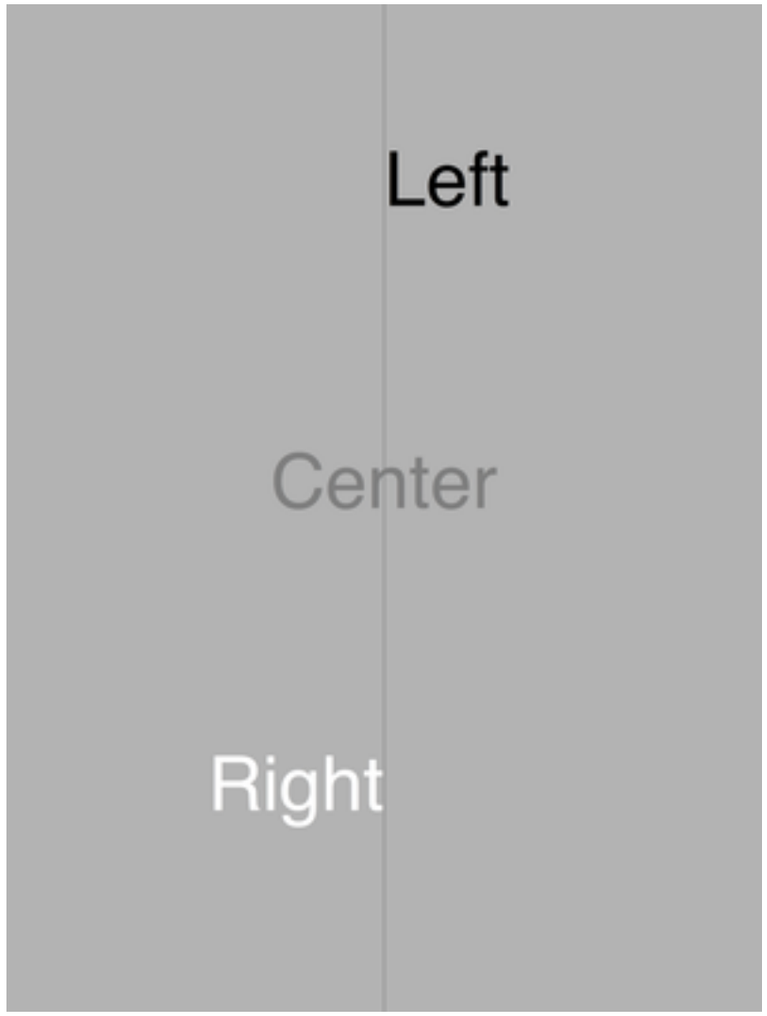
Common Attributes for text and list

`xp`	horizontal percentage
`yp`	vertical percentage
`sp`	font size percentage
`type`	"bullet", "number" (list), "block", "code" (text)
`align`	"left", "middle", "end"
`color`	SVG names ("maroon"), or RGB "rgb(127,0,0)"
`opacity`	percent opacity (0-100, transparent - opaque)
`font`	"sans", "serif", "mono"
`link`	URL

Scaling the canvas



Landscape



Portrait

Percent Grid

10 20 30 40 50 60 70 80 90

90

80

70

60

50

40

30

20

10

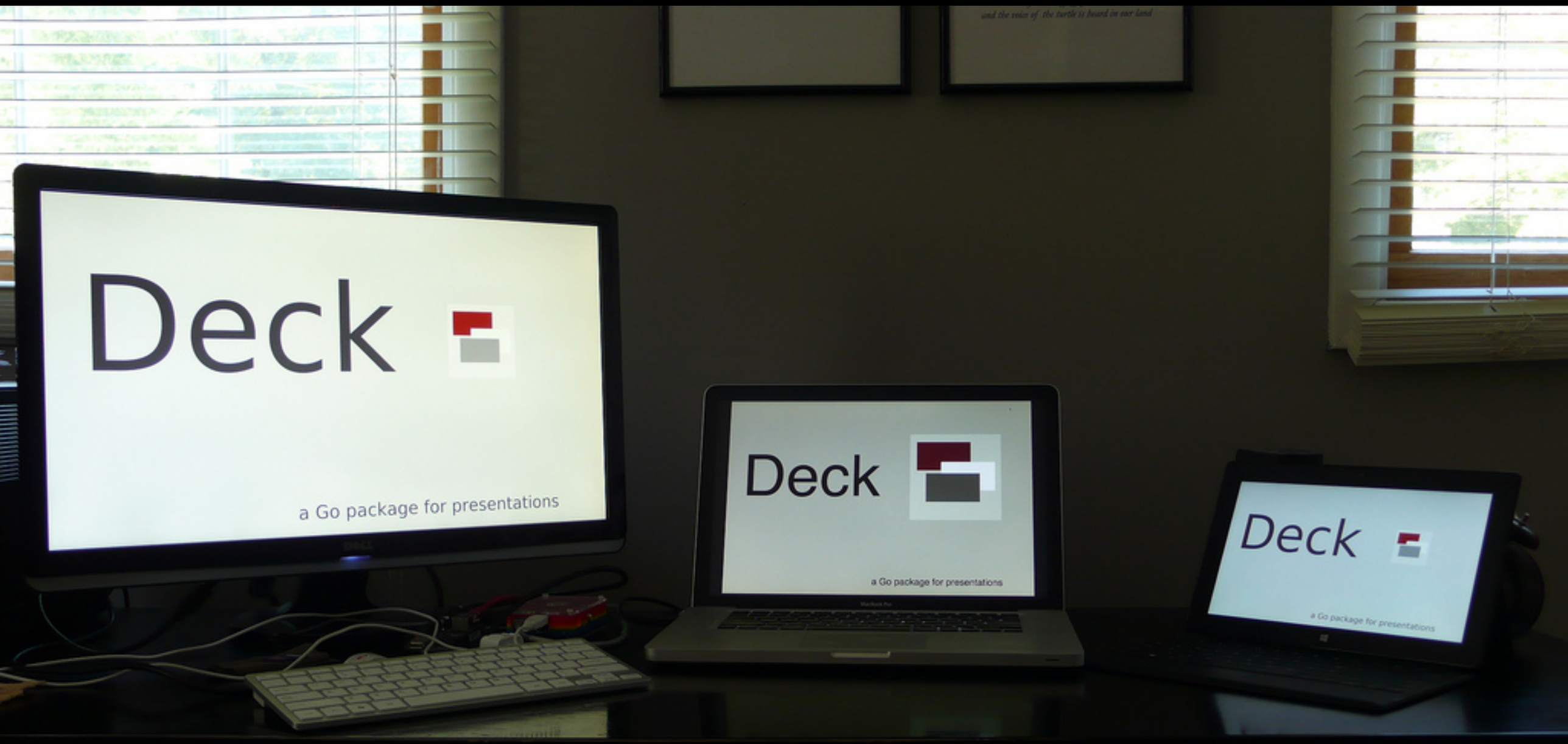
10%, 50%

Hello

50%, 50%

90%, 50%

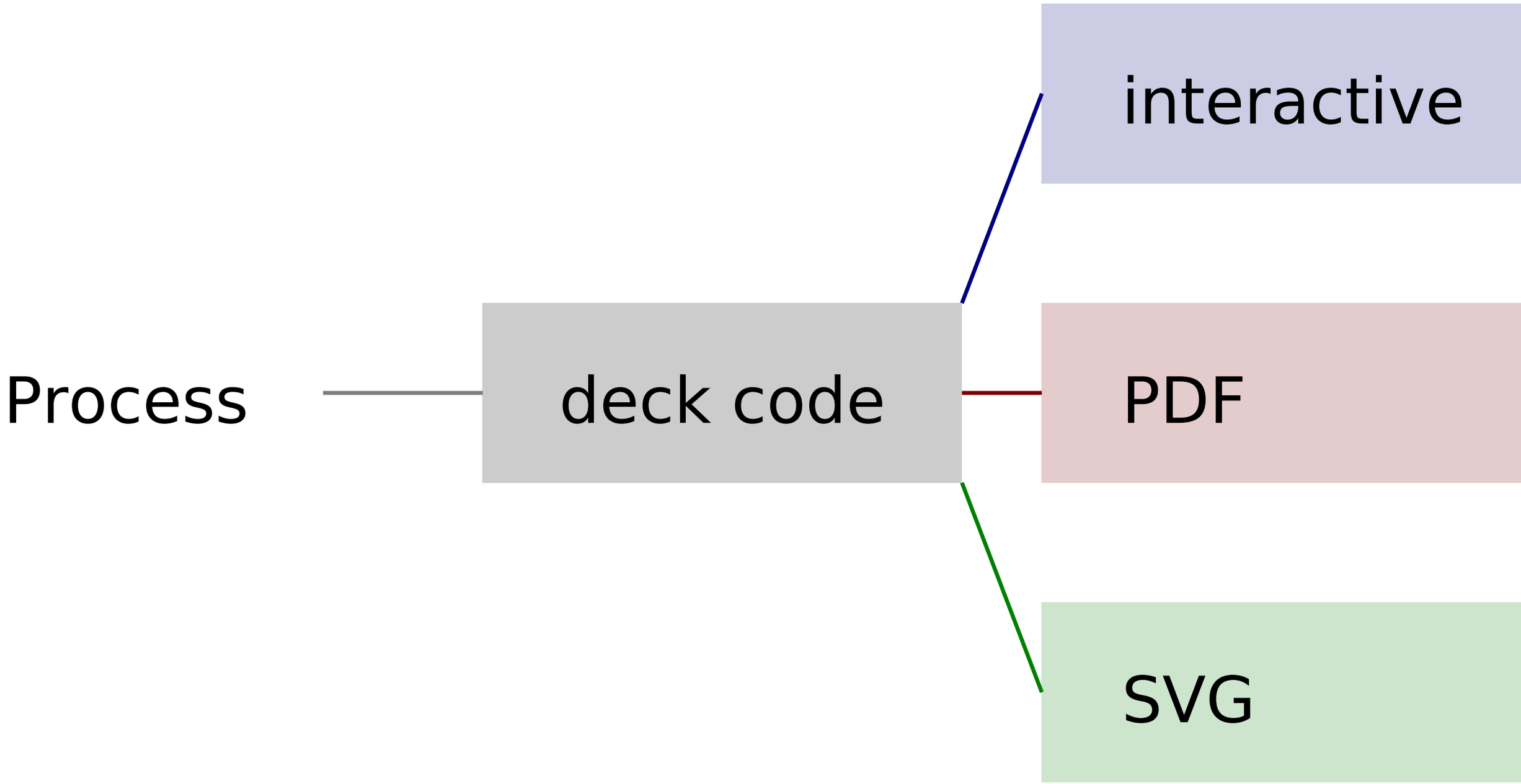
Percentage-based layout


Deck
a Go package for presentations
Deck
a Go package for presentations
Deck
a Go package for presentations

Clients

```
package main

import (
    "github.com/ajstarks/deck"
    "log"
)

func main() {
    presentation, err := deck.Read("deck.xml", 1024, 768) // open the deck
    if err != nil {
        log.Fatal(err)
    }
    for _, slide := range presentation.Slide { // for every slide...
        for _, t := range slide.Text { // process the text elements
            x, y, size := deck.Dimen(presentation.Canvas, t.Xp, t.Yp, t.Sp)
            slideText(x, y, size, t)
        }
        for _, l := range slide.List { // process the list elements
            x, y, size := deck.Dimen(presentation.Canvas, l.Xp, l.Yp, l.Sp)
            slideList(x, y, size, l)
        }
    }
}
```

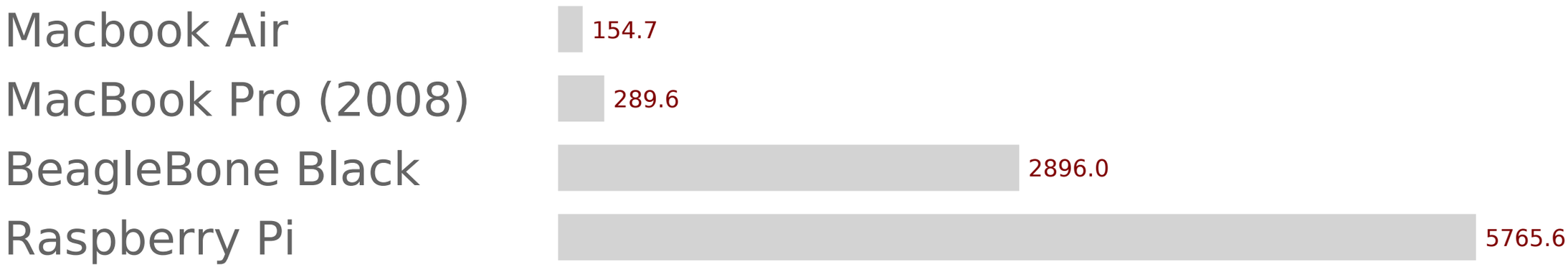
A Deck Client

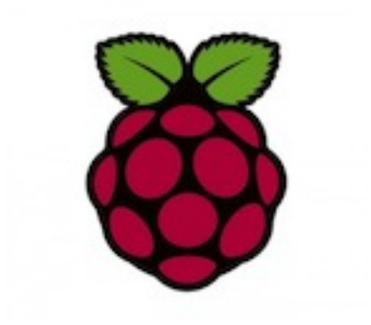

Process
deck code
interactive
PDF
SVG

Generating a Barchart

```
package main

import (
    "fmt"
    "github.com/ajstarks/deck/generate"
    "os"
)

type Bardata struct {
    label string
    value float64
}

func vmap(value float64, low1 float64, high1 float64, low2 float64, high2 float64) float64 {
    return low2 + (high2-low2)*(value-low1)/(high1-low1)
}
func main() {
    benchmarks := []Bardata{
        {"Macbook Air", 154.701}, {"MacBook Pro (2008)", 289.603}, {"BeagleBone Black", 2896.037}, {"Raspberry Pi", 5765.568},
    }
    maxdata := 5800.0
    ts := 2.5
    hts := ts / 2
    x, y := 10.0, 60.0
    bx1 := x + (ts * 12)
    bx2 := bx1 + 50.0
    linespacing := ts * 2.0
    deck := generate.NewSlides(os.Stdout, 0, 0)
    deck.StartDeck()
    deck.StartSlide("rgb(255,255,255)")
    deck.Text(x, y+20, "Go 1.1.2 Build and Test Times", "sans", ts*2, "black")
    for _, data := range benchmarks {
        deck.Text(x, y, data.label, "sans", ts, "rgb(100,100,100)")
        bv := vmap(data.value, 0, maxdata, bx1, bx2)
        deck.Line(bx1, y+hts, bv, y+hts, ts, "lightgray")
        deck.Text(bv+0.5, y+(hts/2), fmt.Sprintf("%.1f", data.value), "sans", hts, "rgb(127,0,0)")
        y -= linespacing
    }
    deck.EndSlide()
    deck.EndDeck()
}
```

Go 1.1.2 Build and Test Times





```
go get github.com/ajstarks/deck/cmd/vgdeck
```


```
go get github.com/ajstarks/deck/cmd/pdfdeck
```


```
go get github.com/ajstarks/deck/cmd/svgdeck
```

pdfdeck [options] file.xml...

-sans, -serif, -mono [font] specify fonts

-pagesize [w,h, or Letter, Legal, Tabloid, A2-A5, ArchA, Index, 4R, Widescreen]

-stdout (output to standard out)

-outdir [directory] directory for PDF output

-fontdir [directory] directory containing font information

-author [author name] set the document author

-title [title text] set the document title

-grid [percent] draw a percent grid on each slide

svgdeck [options] file.xml...

-sans, -serif, -mono [font] specify fonts

-pagesize [Letter, Legal, A3, A4, A5]

-pagewidth [canvas width]

-pageheight [canvas height]

-stdout (output to standard out)

-outdir [directory] directory for PDF output

-title [title text] set the document title

-grid [percent] draw a percent grid on each slide

vgdeck [options] file.xml...

-loop [duration] loop, pausing [duration] between slides

-slide [number] start at slide number

-w [width] canvas width

-h [height] canvas height

-g [percent] draw a percent grid

vgdeck Commands

`+, Ctrl-N, [Return]`	Next slide
`-, Ctrl-P, [Backspace]`	Previous slide
`^, Ctrl-A`	First slide
`$, Ctrl-E`	Last slide
`r, Ctrl-R`	Reload
`x, Ctrl-X`	X-Ray
`/, Ctrl-F [text]`	Search
`s, Ctrl-S`	Save
`q`	Quit

Deck Web API

```
sex -dir [start dir] -listen [address:port] -maxupload [bytes]
```

GET	/	List the API
GET	/deck/	List the content on the server
GET	/deck/?filter=[type]	List content filtered by deck, image, video
POST	/deck/content.xml?cmd=1s	Play a deck with the specified duration
POST	/deck/content.xml?cmd=stop	Stop playing a deck
POST	/deck/content.xml?slide=[num]	Play deck starting at a slide number
DELETE	/deck/content.xml	Remove content
POST	/upload/ Deck:content.xml	Upload content
POST	/table/ Deck:content.txt	Generate a table from a tab-separated list
POST	/table/?textsize=[size]	Specify the text size of the table
POST	/media/ Media:content.mov	Play the specified video

deck [command] [argument]

`deck play file [duration]`	Play a deck
`deck stop`	Stop playing a deck
`deck list [deck|image|video]`	List contents
`deck upload file...`	Upload content
`deck remove file...`	Remove content
`deck video file`	Play video
`deck table file [textsize]`	Make a table

```
$ deck upload *.jpg                                  # upload images
$ mkpicdeck *.jpg | deck upload /dev/stdin           # generate the slide show deck
$ deck play stdin                                    # play it
```

Display

Good Design

is innovative

makes a product useful

is aesthetic

makes a product understandable

is unobtrusive

is honest

is long-lasting

is thorough down to the last detail

is environmentally-friendly

is as little design as possible

Server

HDMI

RESTful API

Controller

> list

> upload

> play/stop

> delete

Design Examples

hello, world

Top

Left

Right

Bottom

20%

30%

70%

20%

Header (top 20%)

Summary
(30%)

Detail
(70%)

Footer (bottom 20%)

bullet

- Point A
- Point B
- Point C
- Point D

plain

First item

Second item

The third item

the last thing

number

1. This
2. That
3. The other
4. One more

```
<list>...</list>
```

BOS

SFO

Virgin America 351

Gate B38

8:35am

On Time

JFK

US Airways 1207

Gate C31C

5:35pm

IND

Delayed

AAPL	503.73	-16.57 (3.18%)
AMZN	274.03	+6.09 (2.27%)
GOOG	727.58	-12.41 (1.68%)

Two Columns

One

Two

Three

Four

Tree and Sky

Five

Six

Seven

Eight

Rocks

go

`build`	compile packages and dependencies
`clean`	remove object files
`env`	print Go environment information
`fix`	run go tool fix on packages
`fmt`	run gofmt on package sources
`get`	download and install packages and dependencies
`install`	compile and install packages and dependencies
`list`	list packages
`run`	compile and run Go program
`test`	test packages
`tool`	run specified go tool
`version`	print Go version
`vet`	run go tool vet on packages

This is not a index card

Rich

Can't buy me love

Bliss

Worse

Better

Misery

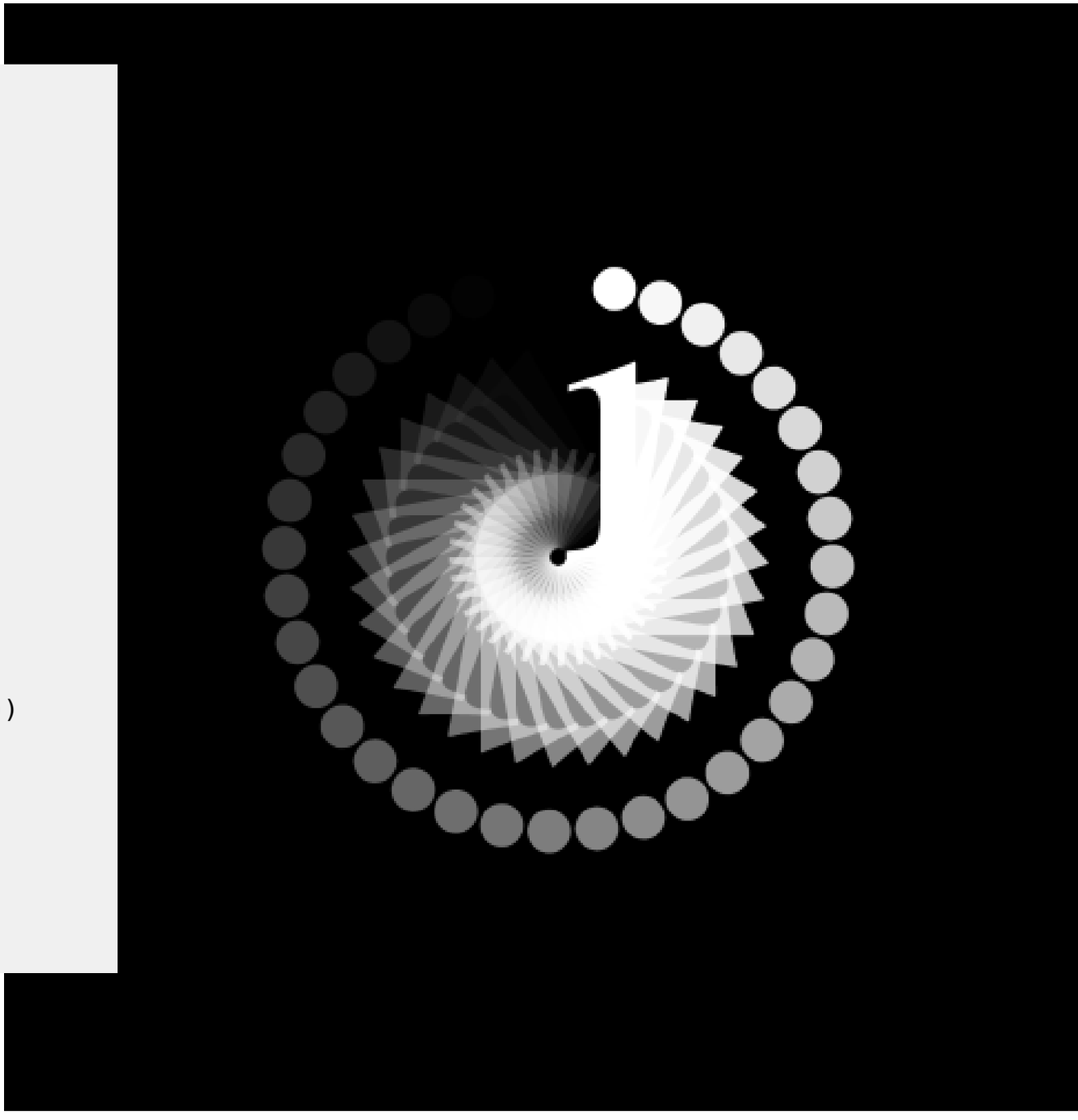
We have each other

Poor

Code

```
package main

import (
    "github.com/ajstarks/svgo"
    "os"
)

func main() {
    canvas := svg.New(os.Stdout)
    width, height := 500, 500
    a, ai, ti := 1.0, 0.03, 10.0

    canvas.Start(width, height)
    canvas.Rect(0, 0, width, height)
    canvas.Gstyle("font-family:serif;font-size:144pt")

    for t := 0.0; t <= 360.0; t += ti {
        canvas.TranslateRotate(width/2, height/2, t)
        canvas.Text(0, 0, "i", canvas.RGBA(255, 255, 255, a))
        canvas.Gend()
        a -= ai
    }
    canvas.Gend()
    canvas.End()
}
```

Output



So, the next time you're about to make a subclass, think hard and ask yourself

what would Go do

Andrew Mackenzie-Ross, http://pocket.co/sSc56

Python and Ruby programmers come
to Go because they don't have to surrender
much expressiveness, but gain performance
and get to play with concurrency.

Less is exponentially more
Rob Pike

You must not blame me if I do talk to the clouds.

FOR, LO,

the winter is past,
the rain is over and gone;
The flowers appear on the earth;
the time for the singing of birds is come,
and the voice of the turtle is heard in our land.

Song of Solomon 2:11-12

Good Design

is innovative

makes a product useful

is aesthetic

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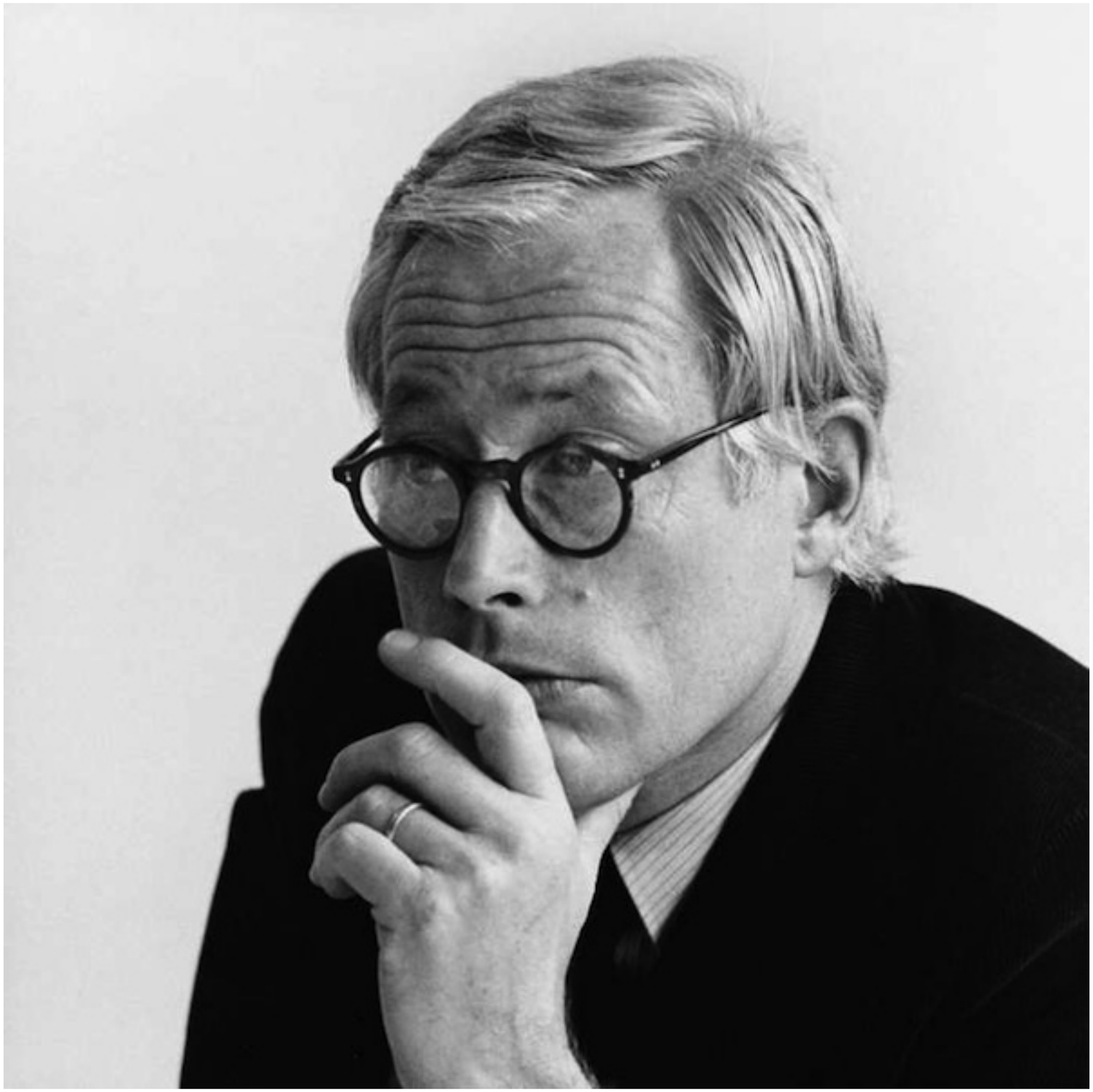
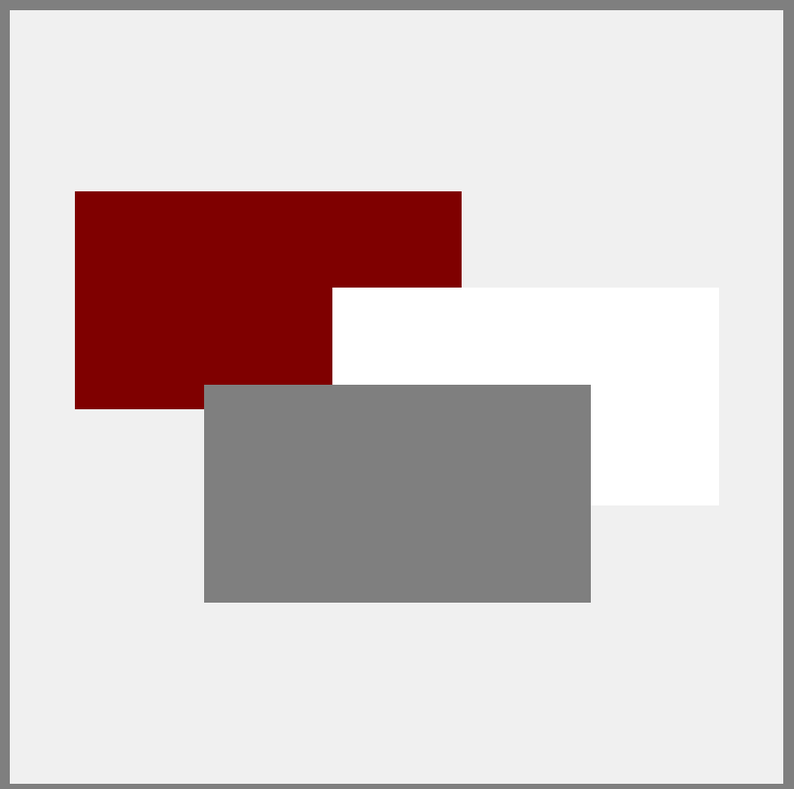
is as little design as possible



Dieter Rams

github.com/ajstarks/deck



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@ajstarks