

# 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

Elements

# Hello, World

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

```
package main
import "fmt"
func main() {
    fmt.Println("Hello, World")
}
```

<text>...</text>

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>
```

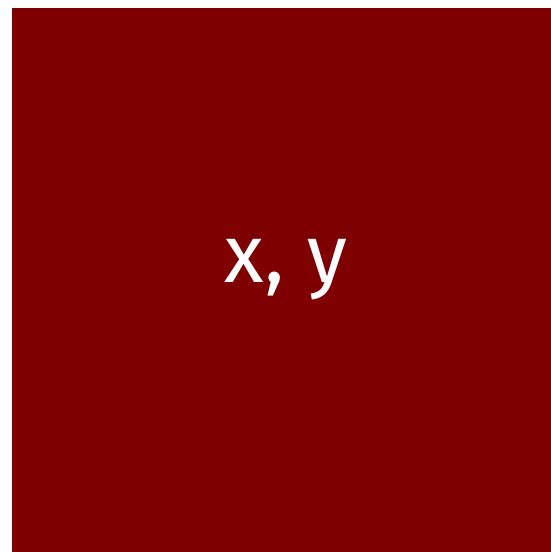
height



width

```
<image .../>
```

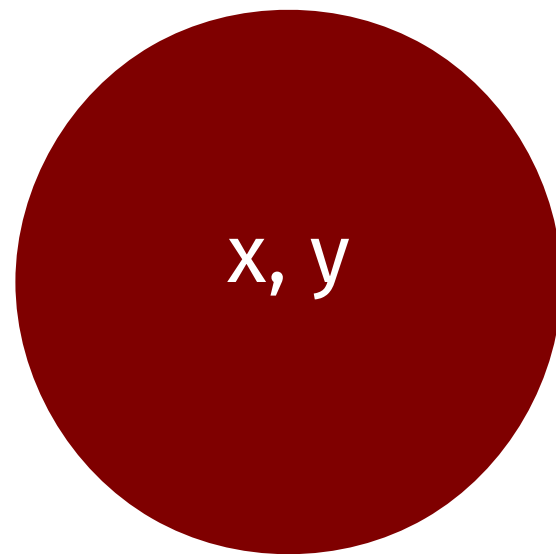
height (relative  
to element  
or canvas  
width)



width

```
<rect .../>
```

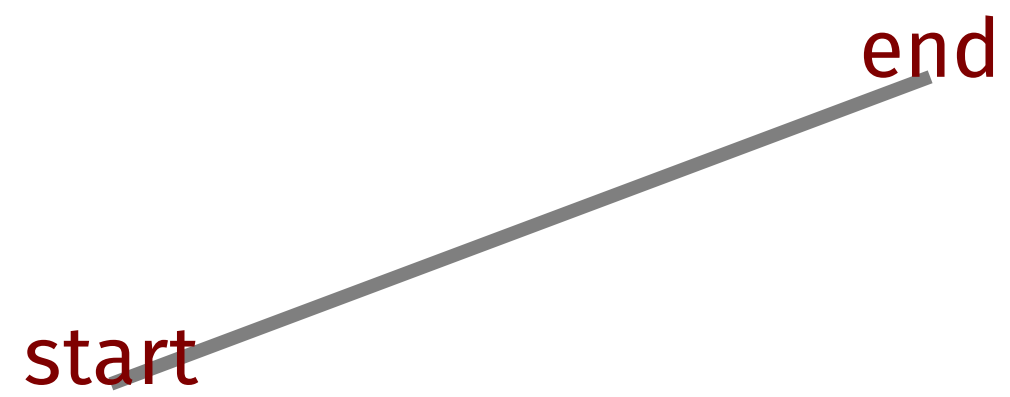
height (relative  
to element  
or canvas  
width)



width

```
<ellipse .../>
```





`<line .../>`

angle2 (90 deg)

x, y   angle1 (0 deg)



<arc .../>

control

start

end

<curve .../>

Markup and Layout

Start the deck	<deck>
Set the canvas size	<canvas width="1024" height="768" />
Begin a slide	<slide bg="white" fg="black">
Place an image	<image xp="70" yp="60" width="256" height="179" name="work.png" caption="Desk"/>
Draw some text	<text xp="20" yp="80" sp="3">Deck uses these elements</text>
Make a bullet list	<list xp="20" yp="70" sp="2" type="bullet">
	<li>text, list, image</li>
	<li>line, rect, ellipse</li>
	<li>arc, curve</li>
End the list	</list>
Draw a line	<line xp1="20" yp1="10" xp2="30" yp2="10"/>
Draw a rectangle	<rect xp="35" yp="10" wp="4" hr="75" color="rgb(127,0,0)"/>
Draw an ellipse	<ellipse xp="45" yp="10" wp="4" hr="75" color="rgb(0,127,0)"/>
Draw an arc	<arc xp="55" yp="10" wp="4" hp="3" a1="0" a2="180" color="rgb(0,0,127)"/>
Draw a quadratic bezier	<curve xp1="60" yp1="10" xp2="75" yp2="20" xp3="70" yp3="10" />
End the slide	</slide>
End of the deck	</deck>

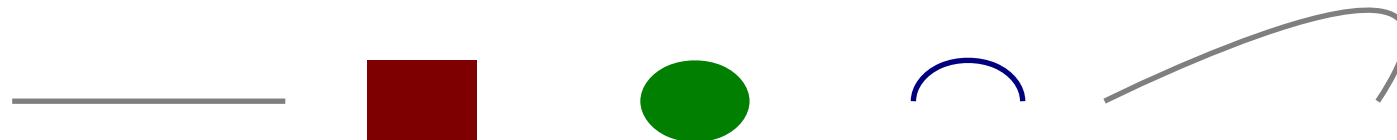
## Anatomy of a Deck

# Deck uses these elements

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



Desk



# Text and List Markup

Position, size	<code>&lt;text xp="..." yp="..." sp="..."&gt;</code>
Block of text	<code>&lt;text ... type="block"&gt;</code>
Lines of code	<code>&lt;text ... type="code"&gt;</code>
Attributes	<code>&lt;text ... color="..." opacity="..." font="..." align="..."&gt;</code>
Position, size	<code>&lt;list xp="..." yp="..." sp="..."&gt;</code>
Bullet list	<code>&lt;list ... type="bullet"&gt;</code>
Numbered list	<code>&lt;list ... type="number"&gt;</code>
Attributes	<code>&lt;list ... color="..." opacity="..." font="..." align="..."&gt;</code>

# Common Attributes for text and list

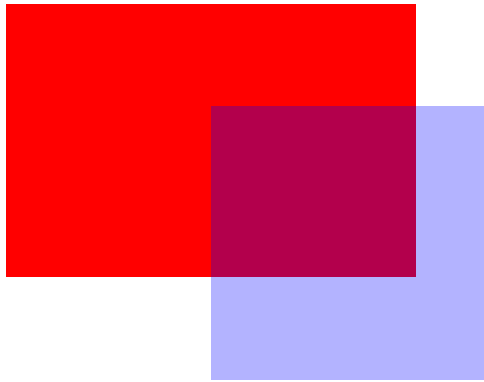
<b>xp</b>	horizontal percentage
<b>yp</b>	vertical percentage
<b>sp</b>	font size percentage
<b>type</b>	"bullet", "number" (list), "block", "code" (text)
<b>align</b>	"left", "middle", "end"
<b>color</b>	SVG names ("maroon"), or RGB "rgb(127,0,0)"
<b>opacity</b>	percent opacity (0-100, transparent -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



# Graphics Markup

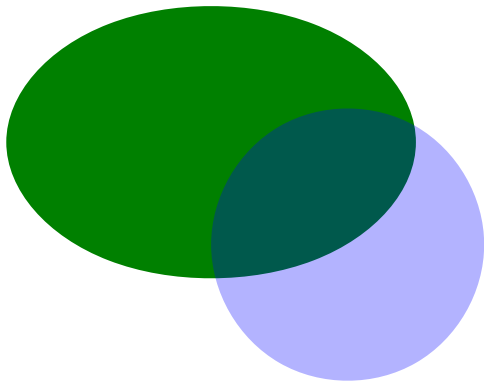


```
<line xp1="5" yp1="75" xp2="20" yp2="70" sp="0.2"/>
```



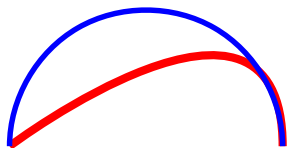
```
<rect xp="10" yp="60" wp="15" hr="66.6" color="red"/>
```

```
<rect xp="15" yp="55" wp="10" hr="100" color="blue" opacity="30"/>
```



```
<ellipse xp="10" yp="35" wp="15" hr="66.66" color="green"/>
```

```
<ellipse xp="15" yp="30" wp="10" hr="100" color="blue" opacity="30"/>
```



```
<curve xp1="5" yp1="10" xp2="15" yp2="20" xp3="15" yp3="10" sp="0.3" color="red"/>
```

```
<arc xp="22" yp="10" wp="10" wp="10" a1="0" a2="180" sp="0.2" color="blue"/>
```



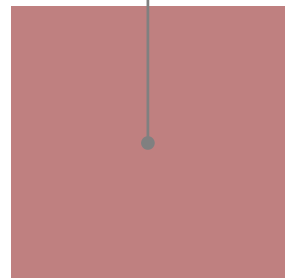
10%, 50%

Hello

50%, 50%



90%, 50%



Percentage-based layout

bullet

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

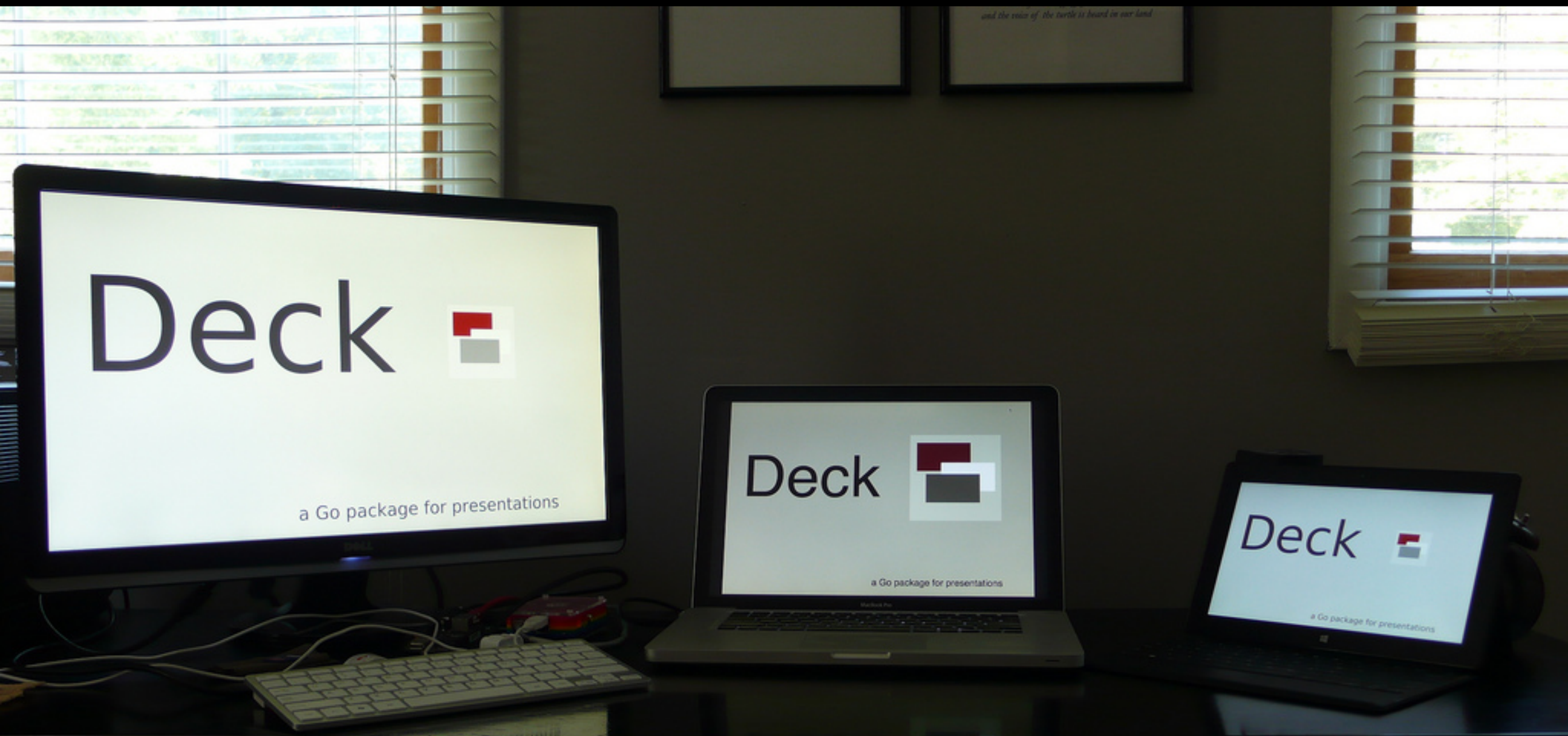
plain

First item  
Second item  
The third item  
the last thing

number

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

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



Clients

```

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

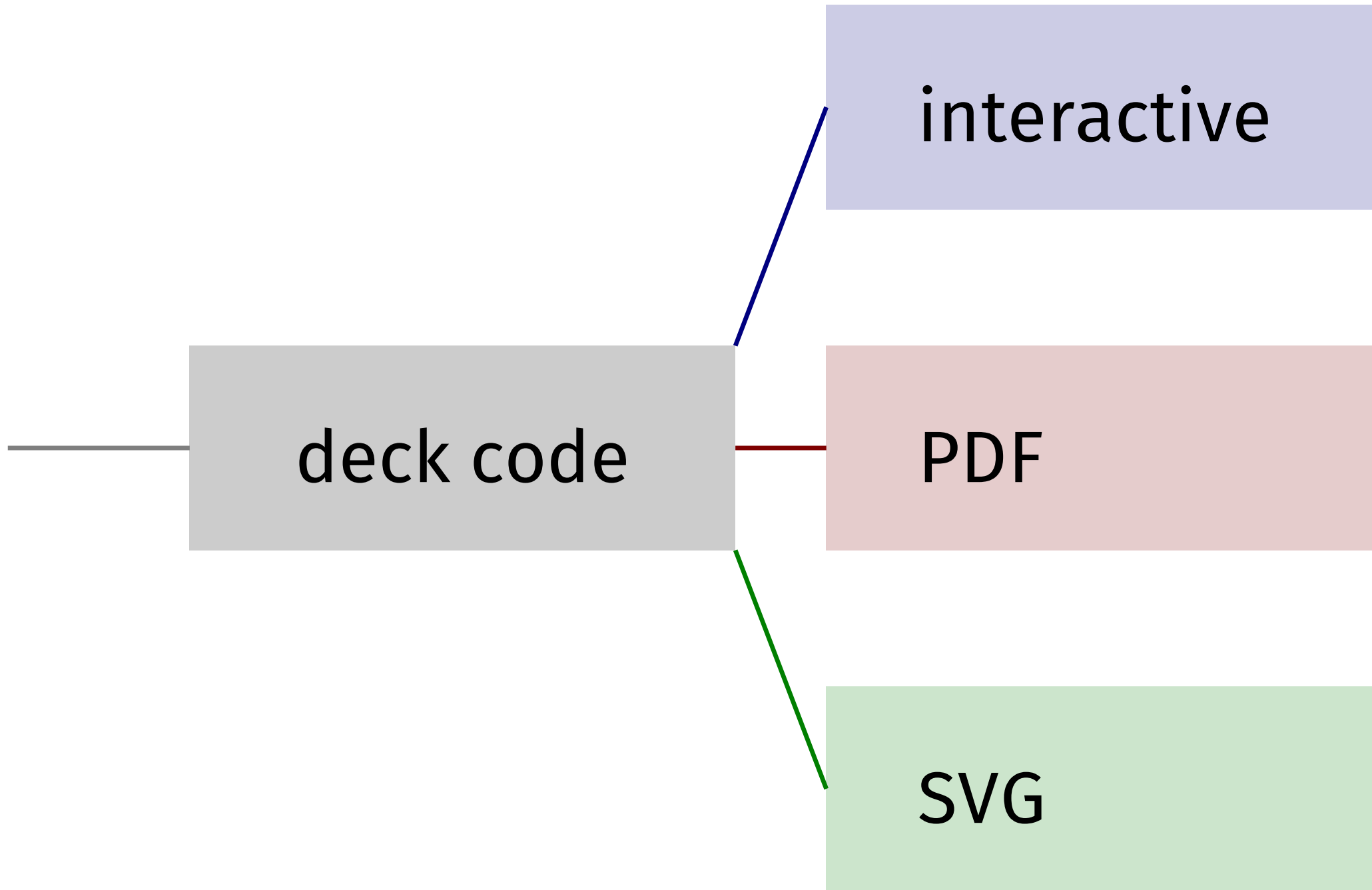
Process

deck code

interactive

PDF

SVG



```

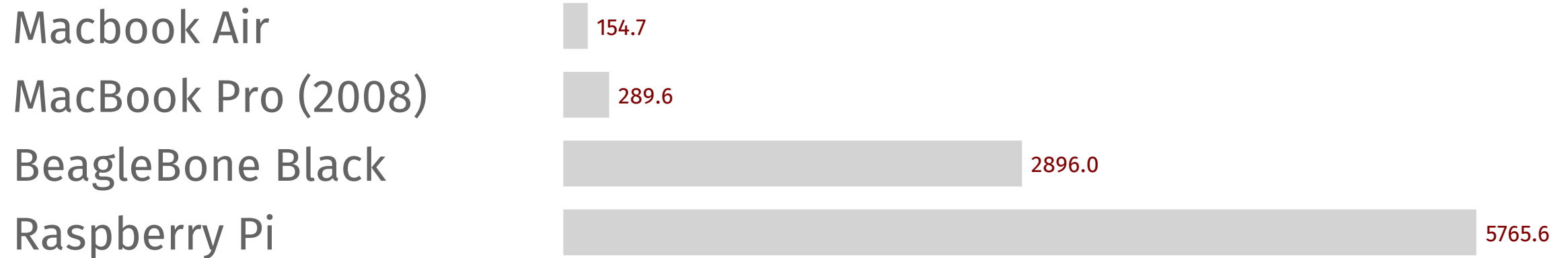
func main() {
    benchmarks := []Bardata{
        {"Macbook Air", 154.701},
        {"MacBook Pro (2008)", 289.603},
        {"BeagleBone Black", 2896.037},
        {"Raspberry Pi", 5765.568},
    }
    ts := 2.5
    hts := ts / 2
    x := 10.0
    bx1 := x + (ts * 12)
    bx2 := bx1 + 50.0
    y := 60.0
    maxdata := 5800.0
    linespacing := ts * 2.0
    text(x, y+20, "Go 1.1.2 Build and Test Times", ts*2, "black")
    for _, data := range benchmarks {
        text(x, y, data.label, ts, "rgb(100,100,100)")
        bv := vmap(data.value, 0, maxdata, bx1, bx2)
        line(bx1, y+hts, bv, y+hts, ts, "lightgray")
        text(bv+0.5, y+(hts/2), fmt.Sprintf("%.1f", data.value), hts, "rgb(127,0,0)")
        y -= linespacing
    }
}

```

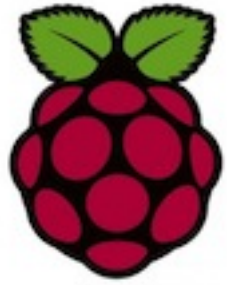
## Generating a Barchart



# Go 1.1.2 Build and Test Times



```
$ (echo '<deck><slide>'; go run deckbc.go; echo '</slide></deck>')
```



```
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

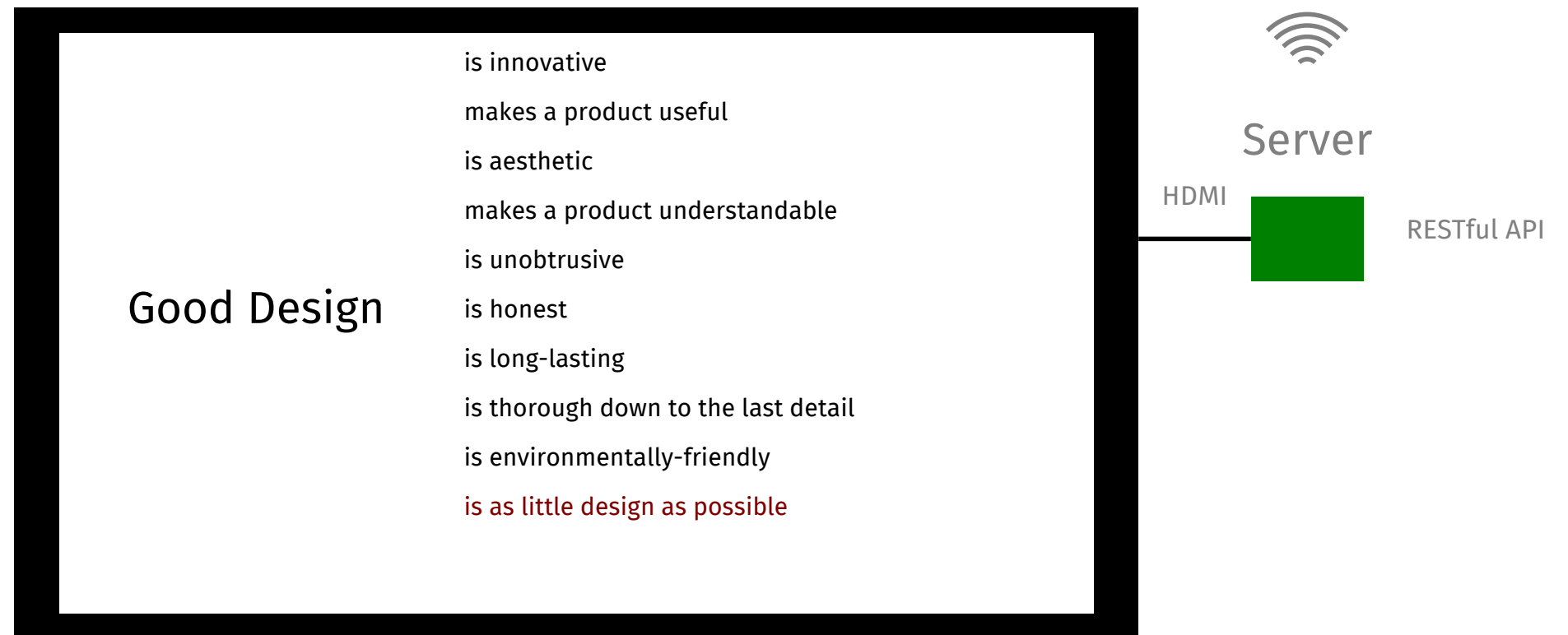
# deck [command] [argument]

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



# Controller



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



Virgin America 351

Gate B38

8:35am

SFO

On Time



JFK



IND

US Airways 1207

Gate C31C

5:35pm

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

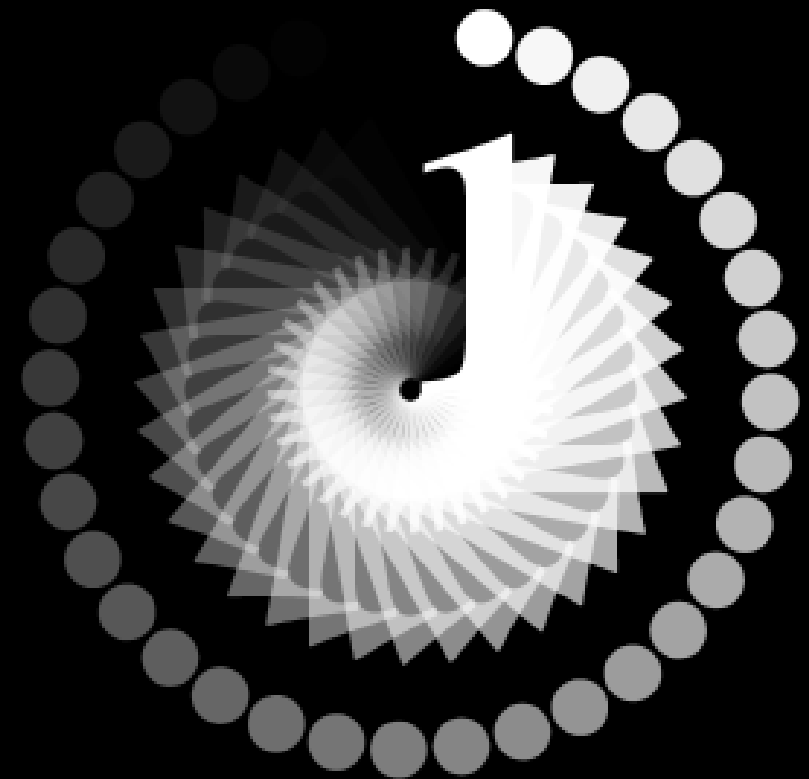
```
package main
import (
    "github.com/ajstarks/svgo"
    "os"
)

func main() {
    canvas := svgo.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



A few months ago, I had a look at the brainchild of a few serious heavyweights working at Google. Their project, the Go programming language, is a static typed, c lookalike, semicolon-less, self formatting, package managed, object oriented, easily parallelizable, cluster fuck of genius with an unique class inheritance system. It doesn't have one.



# The Go Programming Language

is a static typed,  
c lookalike,  
semicolon-less,  
self formatting,  
package managed,  
object oriented,  
easily parallelizable,  
cluster fuck of genius  
with an unique class inheritance system.

# The Go Programming Language

is a static typed,  
c lookalike,  
semicolon-less,  
self formatting,  
package managed,  
object oriented,  
easily parallelizable,  
cluster fuck of genius  
with an unique class inheritance system.

---

# The Go Programming Language

is a static typed, c lookalike, semicolon-less, self formatting,  
package managed, object oriented, easily parallelizable,  
cluster fuck of genius with an unique class inheritance system.

It doesn't have one.

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



A full-page background image of a sky. In the center, a bright sunburst or light source is breaking through a dense layer of white and grey clouds. The sky transitions from a deep blue at the top to a lighter blue near the horizon. The clouds are textured and voluminous, with some catching the light from the sunburst.

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.



# Good Design

is innovative

makes a product useful

is aesthetic

makes a product understandable

is unobtrusive

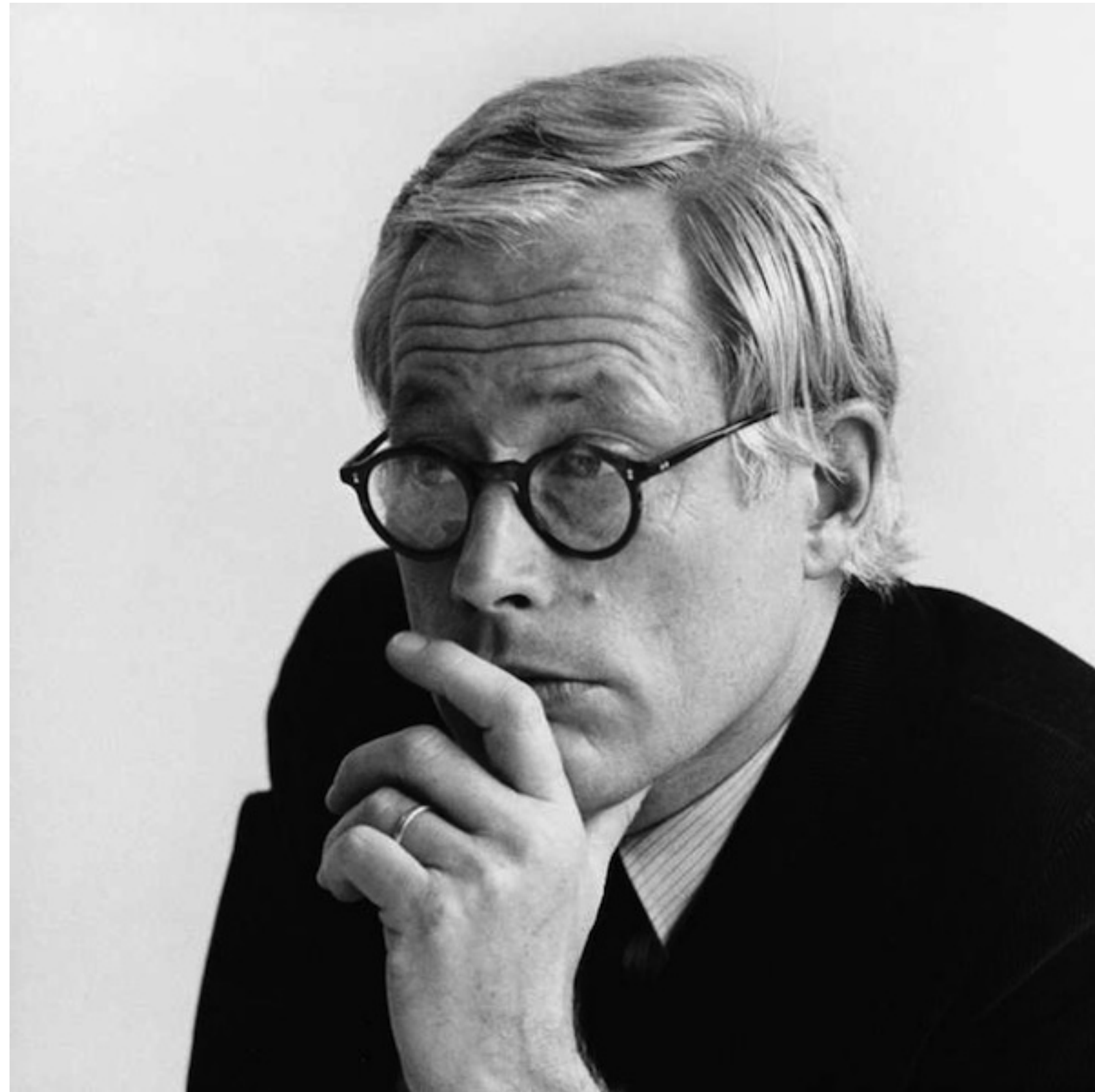
is honest

is long-lasting

is thorough down to the last detail

is environmentally-friendly

is as little design as possible



Dieter Rams



[github.com/ajstarks/deck](https://github.com/ajstarks/deck)



[ajstarks@gmail.com](mailto:ajstarks@gmail.com)

@ajstarks