

# Deck



a Go package for presentations

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## 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 for list, upload, stop, start, remove

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>
```

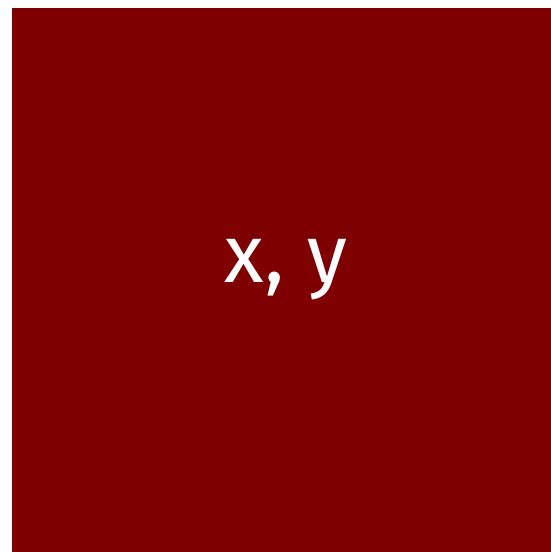
height



width

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

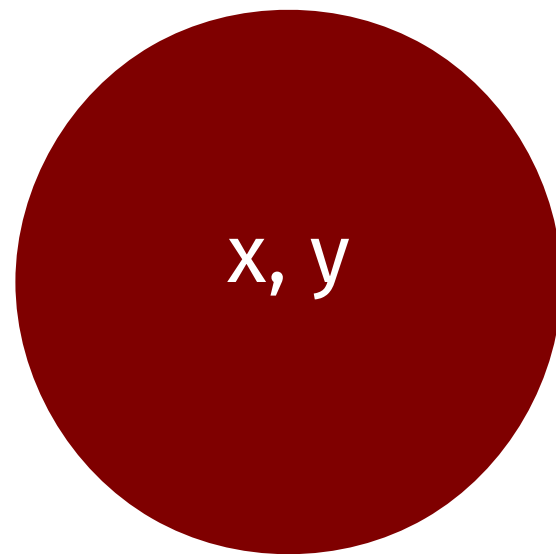
height (relative  
to element  
or canvas  
width)



width

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

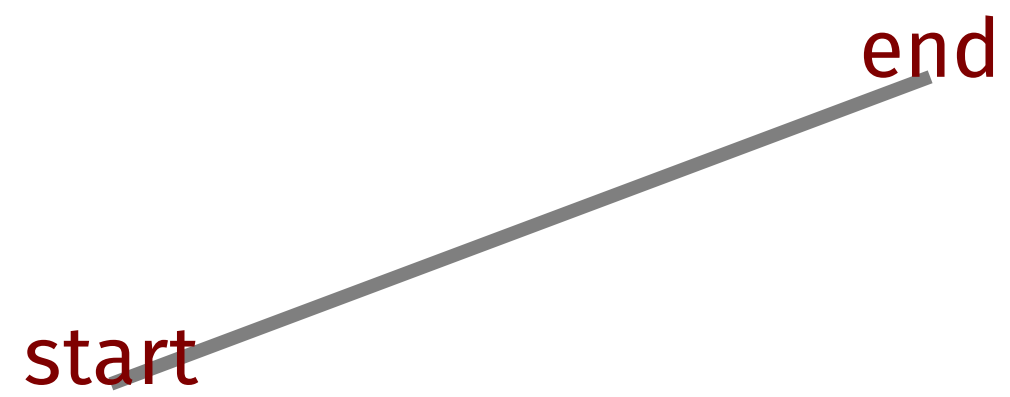
height (relative  
to element  
or canvas  
width)



width

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





`<line .../>`

angle2 (90 deg)

x, y   angle1 (0 deg)

A diagram showing a gray arc. The center of the arc is labeled 'x, y'. The starting point of the arc is labeled 'angle1 (0 deg)' and the ending point is labeled 'angle2 (90 deg)'. The arc is a quarter-circle, curving from the bottom-right towards the top-left.

<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"> <ul style="list-style-type: none"> <li>&lt;li&gt;text, list, image&lt;/li&gt;</li> <li>&lt;li&gt;line, rect, ellipse&lt;/li&gt;</li> <li>&lt;li&gt;arc, curve&lt;/li&gt;</li> </ul>
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>

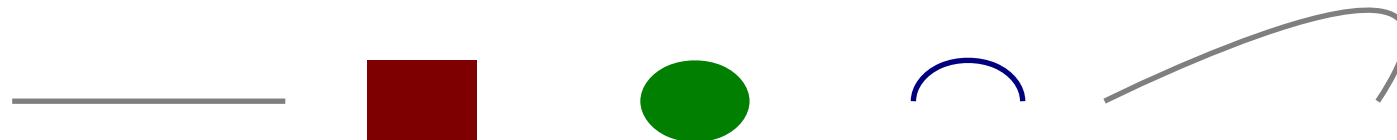
## Anatomy of a Deck

# 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

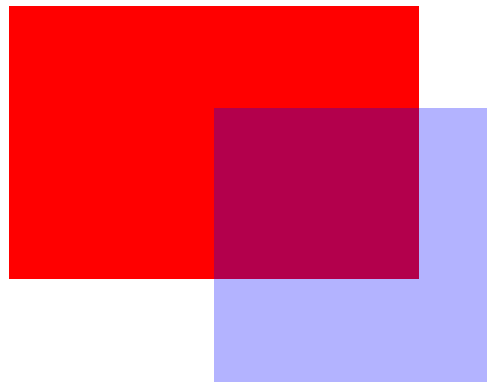
<b>xp</b>	horizontal percentage
<b>yp</b>	vertical percentage
<b>sp</b>	font size percentage
<b>type</b>	"bullet", "number" (list), "block", "code" (text)
<b>align</b>	"left", "middle", "end"
<b>color</b>	SVG names ("maroon"), or RGB "rgb(127,0,0)"
<b>opacity</b>	percent opacity (0-100, transparent -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



# Graphics Markup

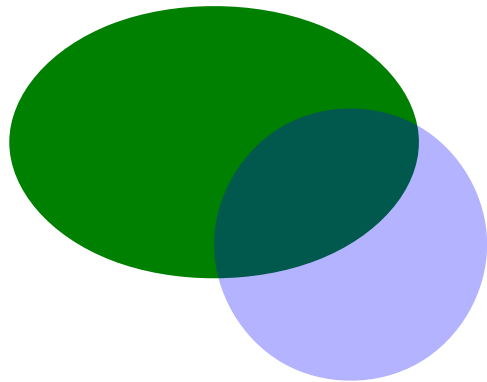


```
<line xp1="5" yp1="75" xp2="20" yp2="70" sp="0.2"/>
```



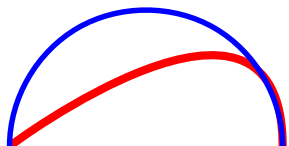
```
<rect xp="10" yp="60" wp="15" hr="66.6" color="red"/>
```

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



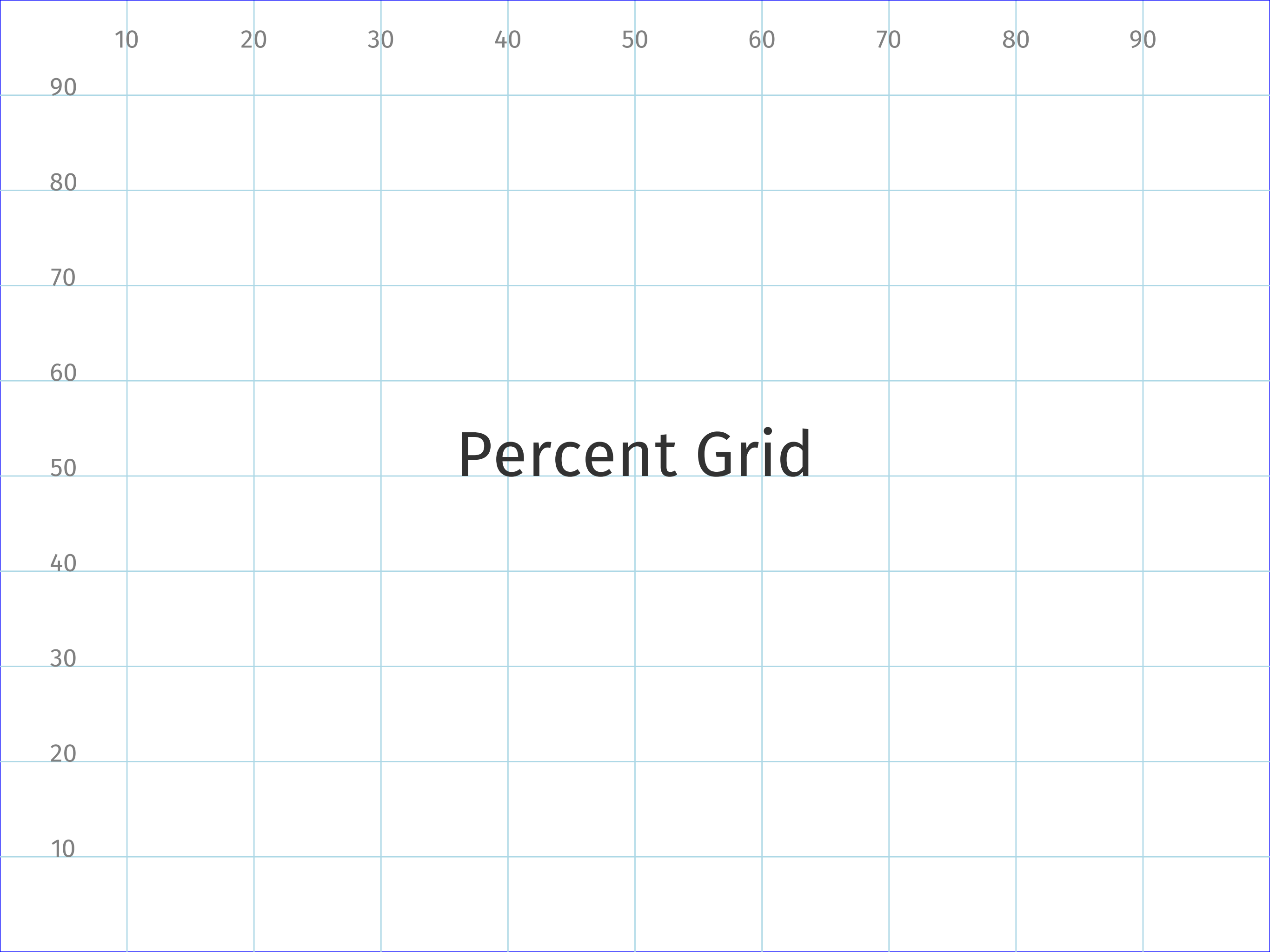
```
<ellipse xp="10" yp="35" wp="15" hr="66.66" color="green"/>
```

```
<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

20

30

40

50

60

70

80

90

90

80

70

60

50

40

30

20

10

Percent Grid

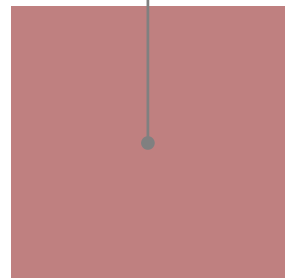
10%, 50%

Hello

50%, 50%



90%, 50%



Percentage-based layout

bullet

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

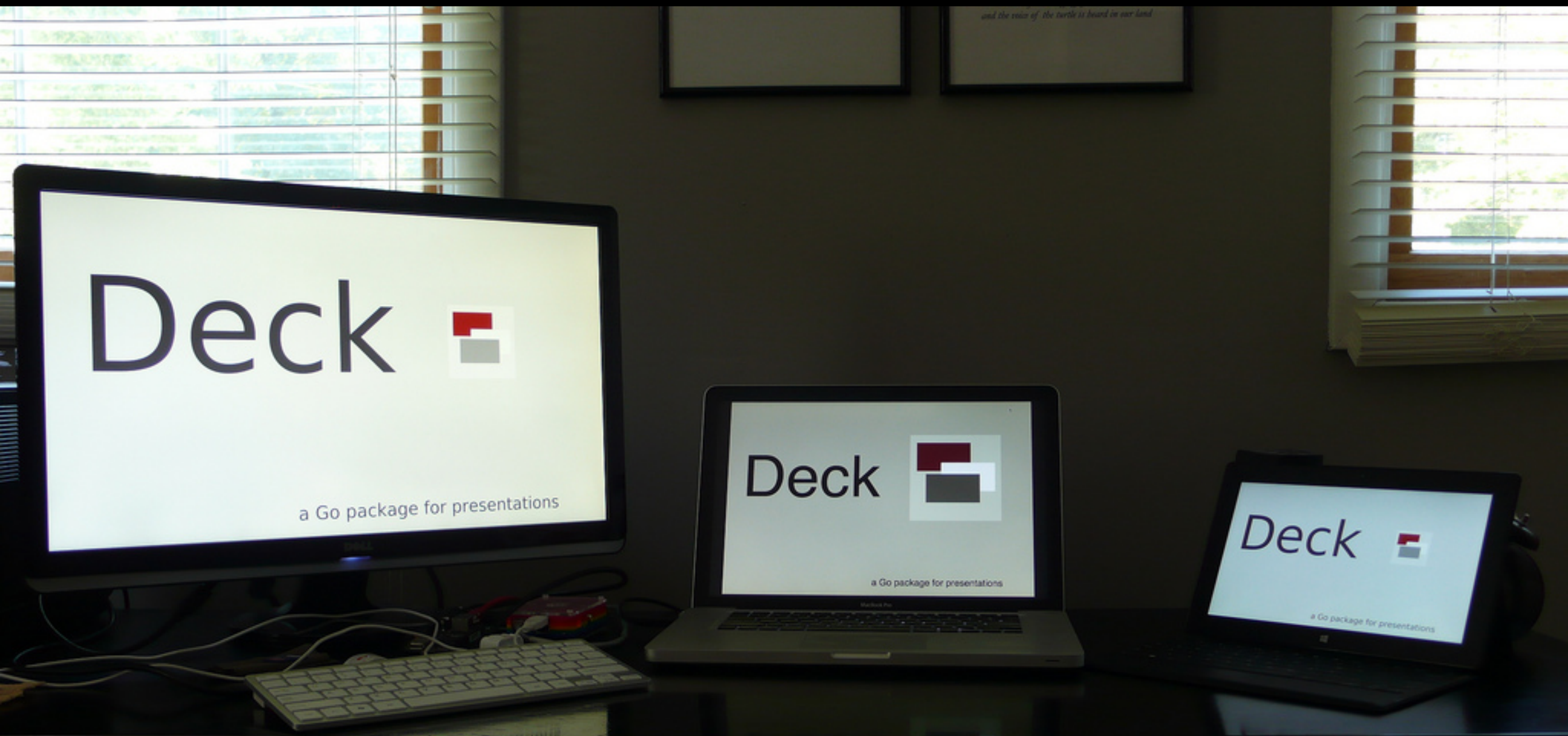
plain

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

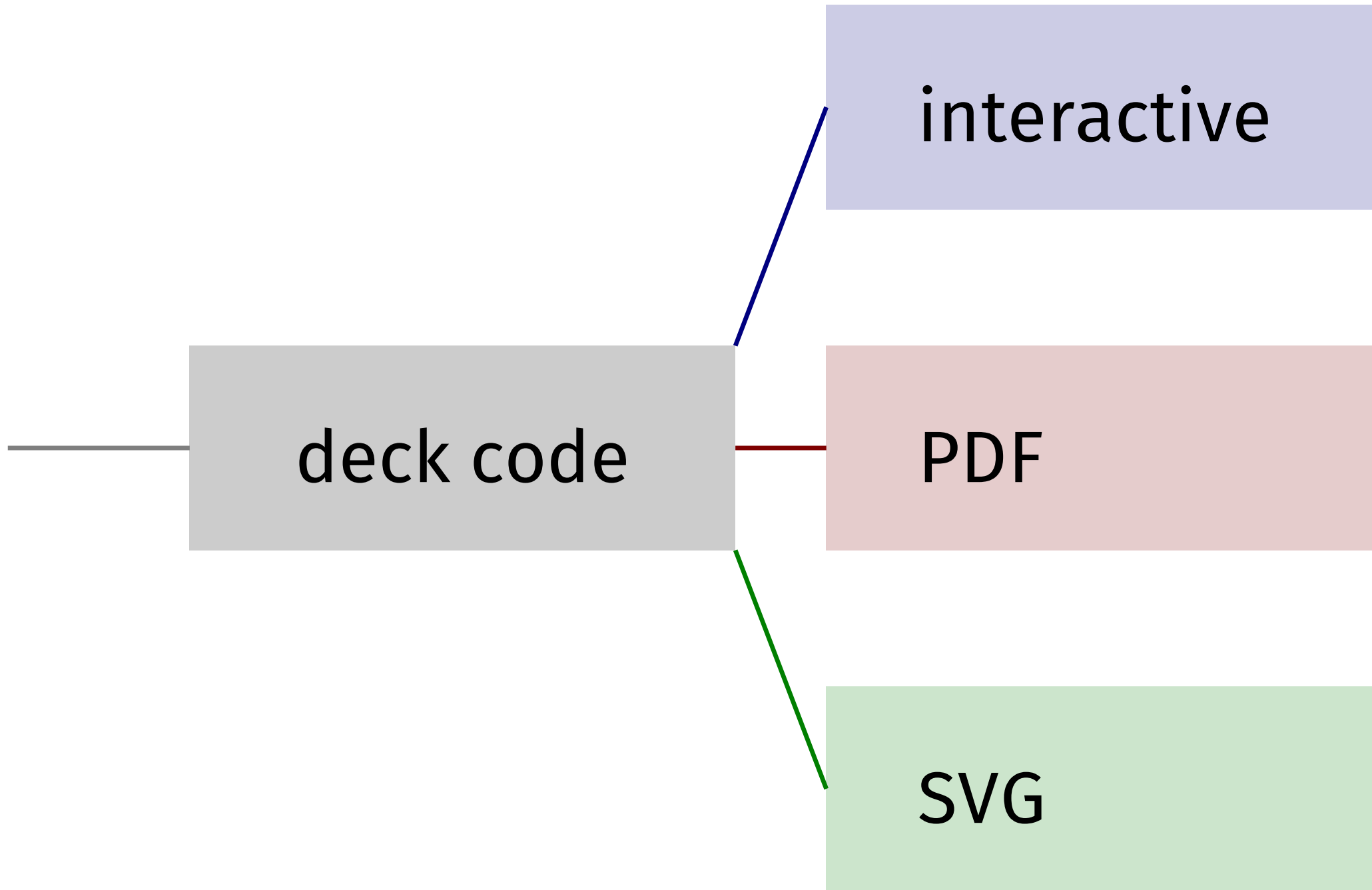
Process

deck code

interactive

PDF

SVG



```

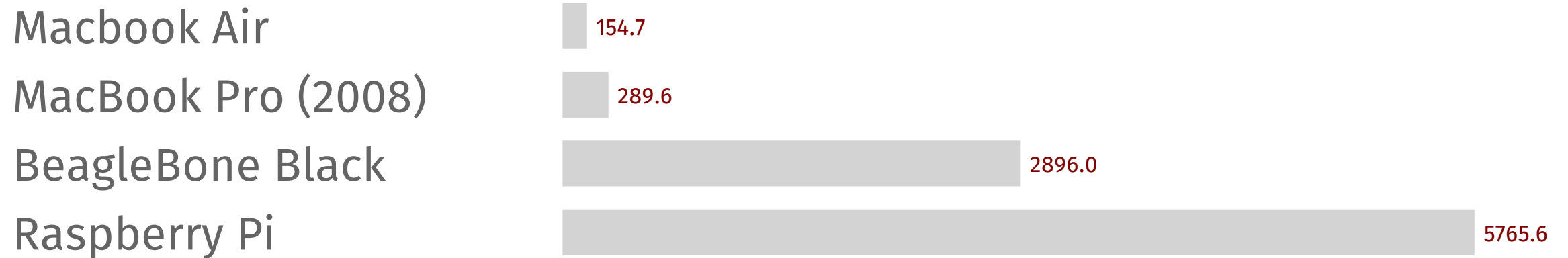
func main() {
    benchmarks := []Bardata{
        {"Macbook Air", 154.701},
        {"MacBook Pro (2008)", 289.603},
        {"BeagleBone Black", 2896.037},
        {"Raspberry Pi", 5765.568},
    }
    ts := 2.5
    hts := ts / 2
    x := 10.0
    bx1 := x + (ts * 12)
    bx2 := bx1 + 50.0
    y := 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
    }
}

```

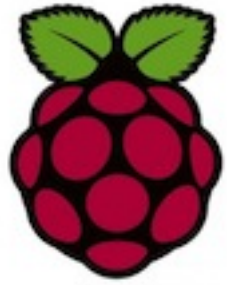
## Generating a Barchart



# 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

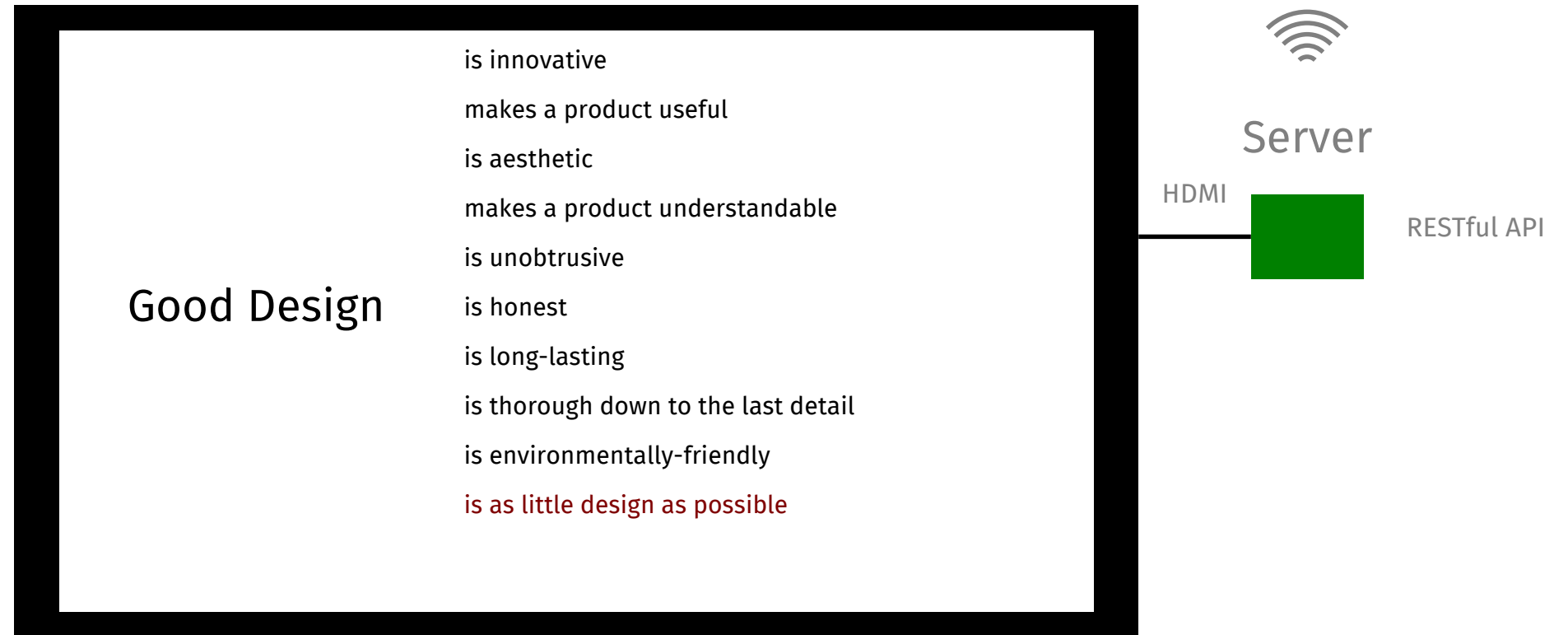
# deck [command] [argument]

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

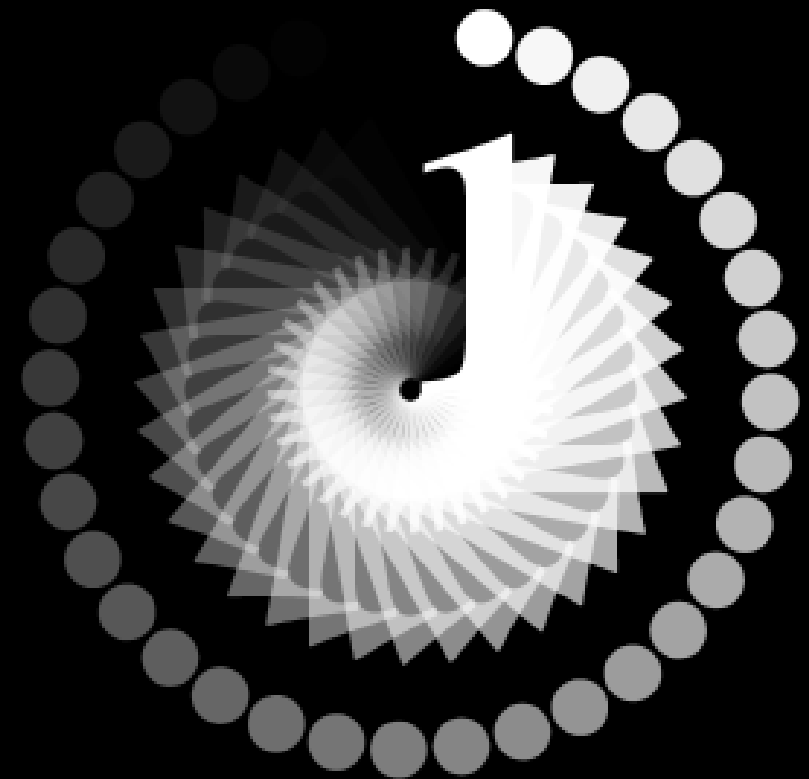
```
package main
import (
    "github.com/ajstarks/svgo"
    "os"
)

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

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---

# 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

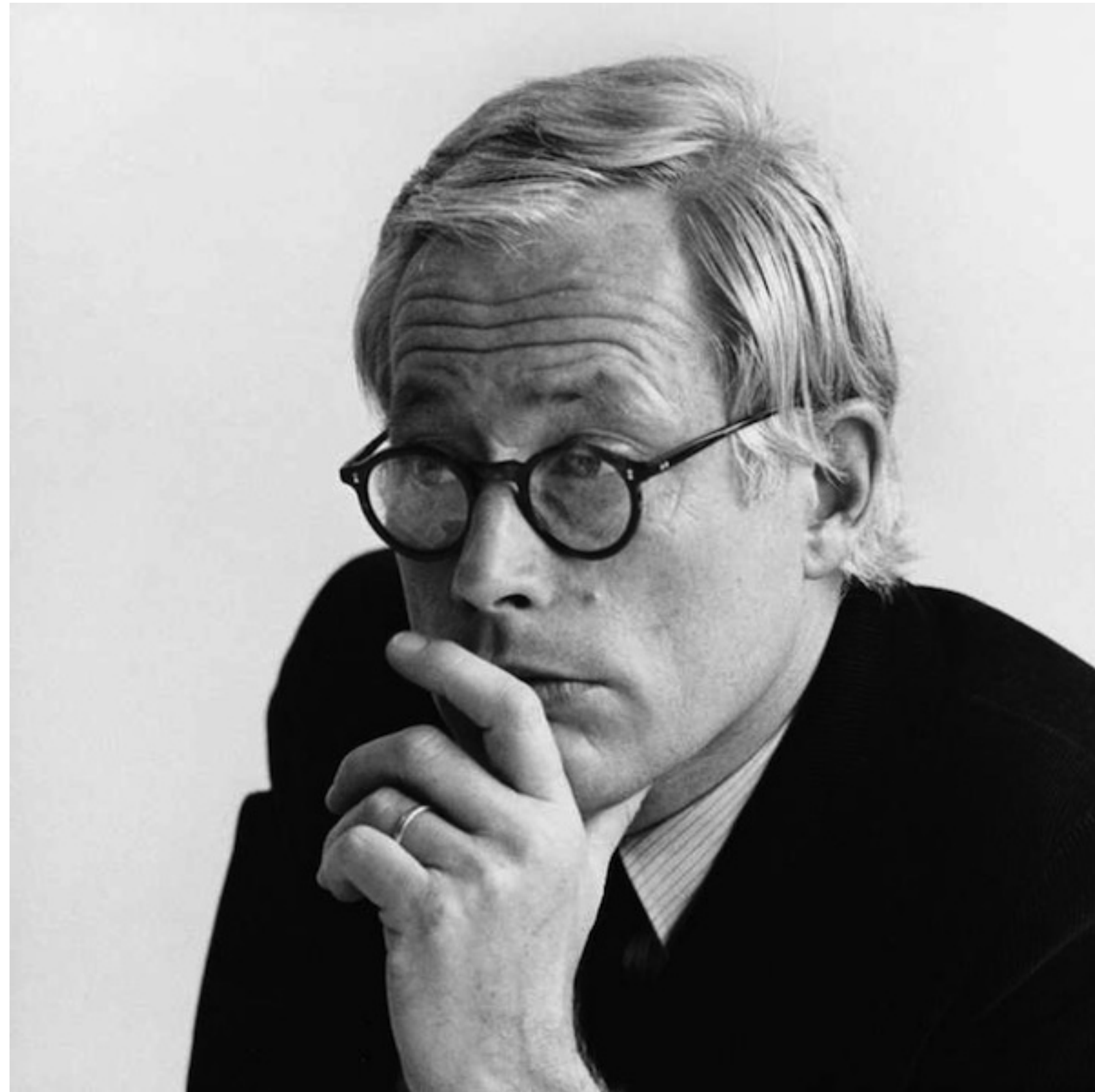
is honest

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)



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