



**Appsilon**

DATA SCIENCE

# Why Is My Dashboard Ugly?

## A Crash Course in Shiny UI

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# Pedro Silva

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- Background in Web Development
- Tech Stack: R / SHINY / CSS / JAVASCRIPT



# Why UI Matters



# Why UI Matters

- The way your application looks and responds to user interactions is your first point of contact with users.
- Users don't know (and sometimes don't care) about what is on the back end of your application or how its written.
- Users need to feel engaged and comfortable when they visit your application. Frustration can be the difference between success and failure.



# UI Tips

# UI Tips

- Keep the interface simple (KISS)
- Create consistency and use common UI elements (DRY)
- Be purposeful in your layout
- Use color, texture, and typography to create hierarchy and clarity
- Provide feedback to the user about what is happening
- Think about the defaults

# UI Tips

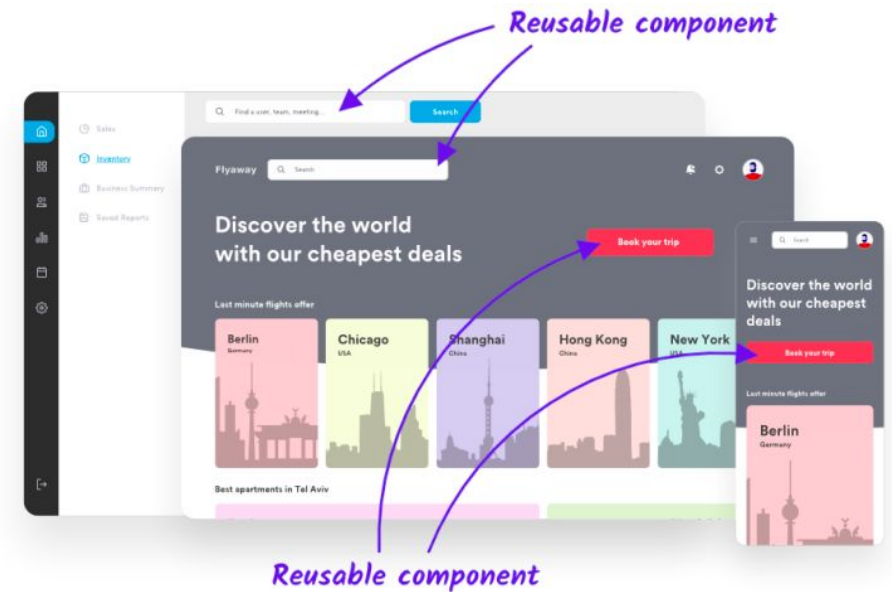
- Keep the interface simple
  - Avoid unnecessary elements
  - Be clear in your language



*The best interfaces are almost invisible to the user.*

# UI Tips

- Be consistent
  - Use common UI elements
  - Reuse components when possible
  - Create patterns in your structure and language





# UI Tips

- Be purposeful in your layout
  - Be spatially mindful
  - Create structure based on importance
  - Draw attention to important information
  - Aid scanning and readability

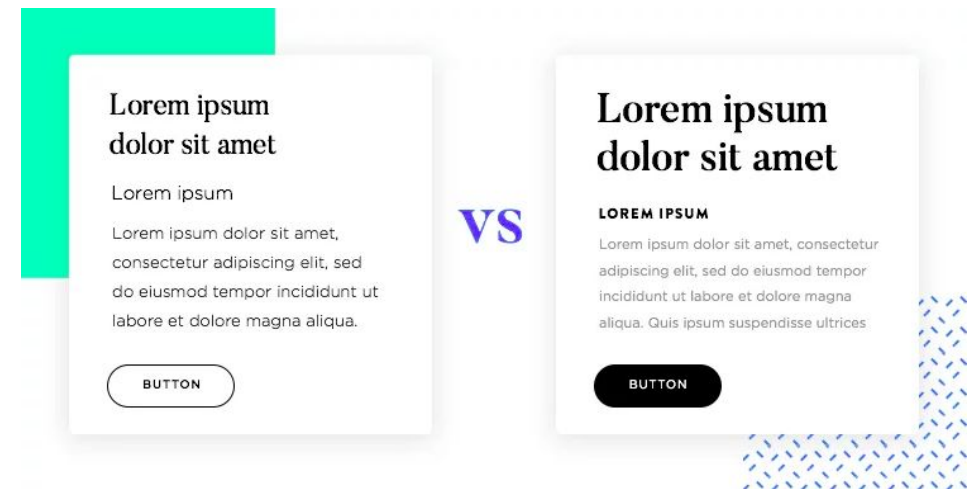


VS



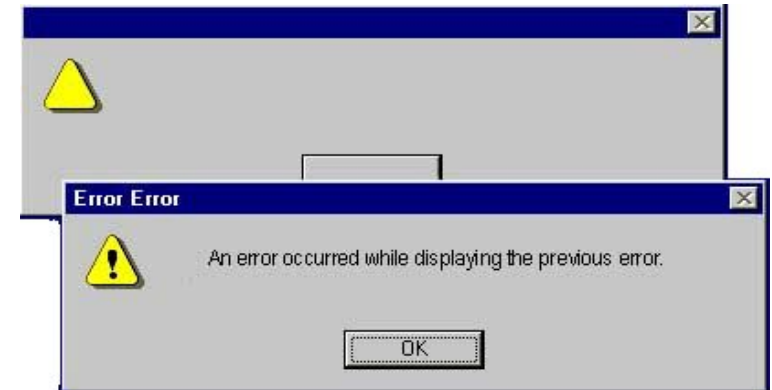
# UI Tips

- Use color, texture and typography strategically
  - Leverage color, light, contrast, and texture
  - Use them to direct attention toward / away from items
  - **Different fonts send different messages**
  - Size, fonts and text arrangement can improve scannability, legibility and readability



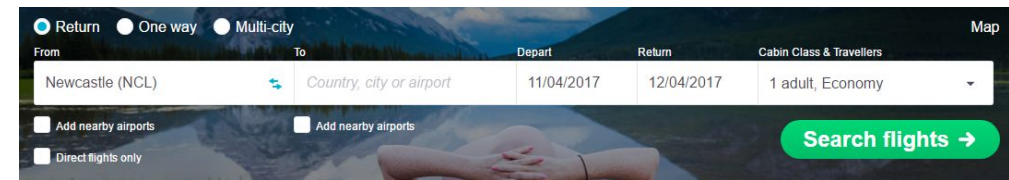
# UI Tips

- Provide feedback to the user about what is happening
  - **Always** inform your users of location, actions, changes in state, or errors
  - Use elements to communicate status
  - Use next steps to reduce frustration for your user



# UI Tips

- Think about the defaults
  - Anticipate the goals people bring to your site
  - Create defaults that reduce the burden on the user
  - When possible have some fields pre-chosen or filled out
  - Don't use defaults for input fields that require user attention



A flight search form with a dark background. At the top, there are radio buttons for "Return" (selected), "One way", and "Multi-city". Below this, there are input fields for "From" (containing "Newcastle (NCL)"), "To" (containing "Country, city or airport"), "Depart" (containing "11/04/2017"), "Return" (containing "12/04/2017"), and "Cabin Class & Travellers" (containing "1 adult, Economy"). There are also checkboxes for "Add nearby airports" and "Direct flights only". A green "Search flights →" button is on the right. A "Map" link is in the top right corner.

☒ I agree to receive the newsletter  
Don't

☐ I agree to receive the newslett  
Do

# Tools and tech



# Tools and tech

- Leverage existing UI packages
  - shinydashboard
  - shiny.semantic

The collage displays several UI elements:

- Tabs:** A set of three tabs labeled "First link", "Second link", and "Third link". The "First link" tab is active, showing "First content".
- Search Bar:** A search input field with the placeholder text "Search..." and a magnifying glass icon. To its right are two filter buttons: "Italy x" and "China x".
- Cards:** Two cards representing car specifications. The first card is for a "Mazda RX4" with "Number of cylinders: 6" and "1/4 mile time: 16.46". The second card is for a "Hornet 4 Drive" with "Number of cylinders: 6" and "1/4 mile time: 19.44".
- Calendar:** A calendar for February 2020, showing the days of the week (S, M, T, W, T, F, S) and the dates. The 20th is highlighted.
- Social Media Post:** A post by a user named "Elliot" (14h ago) featuring a placeholder image, "3 comments", and "17 likes". There is an "Add Comment..." button.
- Code Snippet:** A snippet of R code using shiny.semantic to create a UI element with a green ribbon label and a button.
- Notification/Alert:** A green box with the text "Link" and a "Click" button below it.

```
library(shiny.semantic)
ui <- semanticPage(
  div(class = "ui raised segment",
    div(
      a(class="ui green ribbon label", "Link"),
      p("Lorem ipsum, lorem ipsum, lorem ipsum"),
      actionButton("button", "Click")
    )
  )
)
```

# Tools and tech

- Create your own layouts and components!
  - Working with premade HTML templates?  
**htmltools::htmlTemplate()**
  - Looking to change the way elements work?
    - Small changes? Use **CSS**
    - Full project? Try **SASS**!
  - Adding custom behavior?
    - **HTMLWidgets** for free widget scaffolding
    - Vanilla **JAVASCRIPT** for simple behaviors

```
<!DOCTYPE html>
<!-- template.html -->
<html>
  <head>
    {{ headContent() }}
  </head>
  <body>
    <div>
      {{ button }}
      {{ slider }}
    </div>
  </body>
</html>
```

```
## ui.R ##
htmlTemplate("template.html",
  button = actionButton("action", "Action"),
  slider = sliderInput("x", "X", 1, 100, 50)
)
```

# Tools and tech

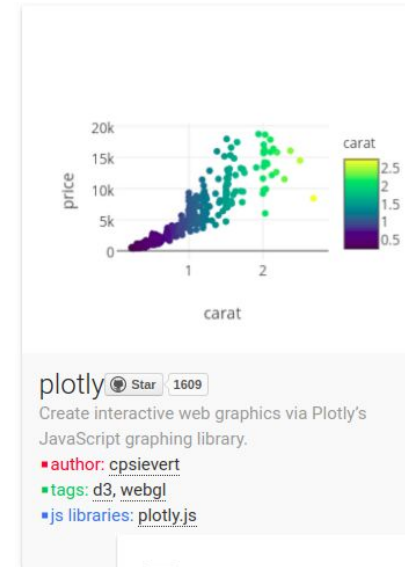
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```
install.packages("sass")
```

```
library(sass)
sass(input = "
  $size: 50%;
  foo { margin: $size * .33; }
")
```

# Tools and tech

- Create your own layouts and components!
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Show 10 entries

	Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
1	5.1	3.5	1.4	0.2	setosa
2	4.9	3	1.4	0.2	setosa
3	4.7	3.2	1.3	0.2	setosa
4	4.6	3.1	1.5	0.2	setosa
5	5	3.6	1.4	0.2	setosa
6	5.4	3.9	1.7	0.4	setosa
7	4.6	3.4	1.4	0.3	setosa
8	5	3.4	1.5	0.2	setosa
9	4.4	2.9	1.4	0.2	setosa
10	4.9	3.1	1.5	0.1	setosa

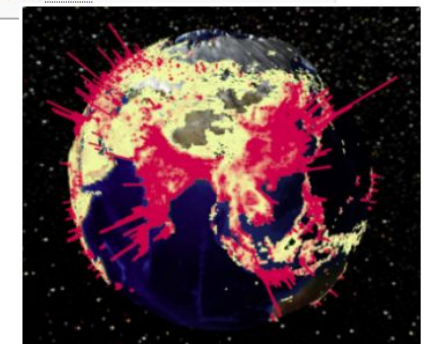
Showing 1 to 10 of 150 entries

Previous 1 2 3 4 5 ... 15 Next

DT  Star 385

This package provides a function `datatable()` to display R data via the DataTables javascript library.

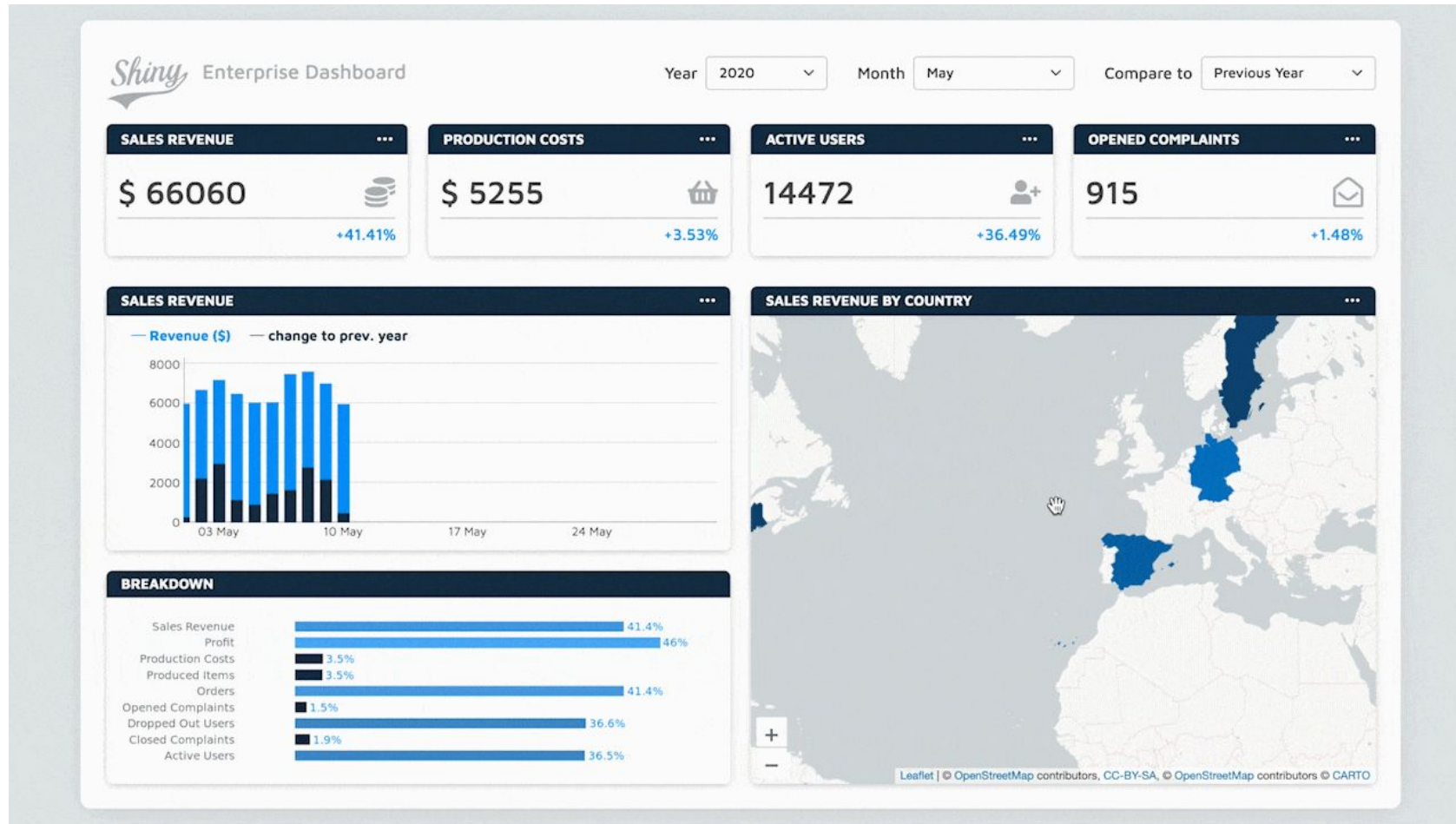
author: rstudio  
tags: tables  
js libraries: DataTables



# Examples



# Examples



- Appsilon Shiny Dashboard (shiny.semantic)

# Examples

## Hiring Funnel

**Start date**  
2019-02-01

**End date**  
2019-12-06

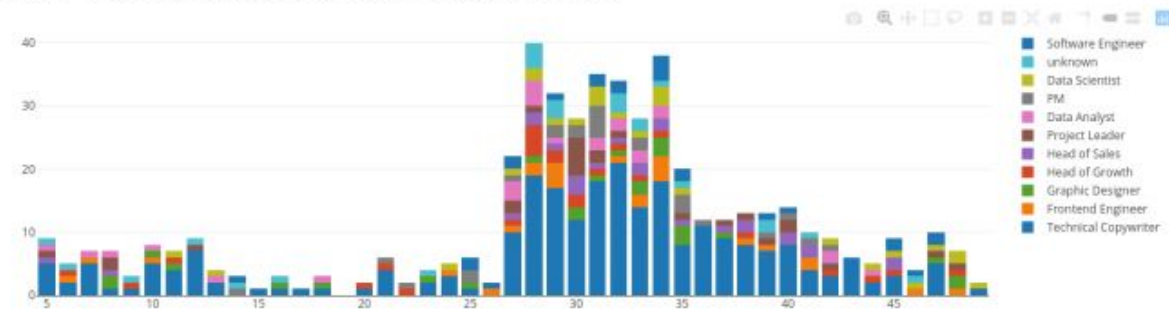
**Group by**  
☐ date  
☒ week  
☐ month  
☐ total

**Job title**  
☒ Technical Copywriter  
☒ Frontend Engineer  
☒ Graphic Designer  
☒ Head of Growth  
☒ Head of Sales  
☒ Project Leader  
☒ Data Analyst  
☒ PM  
☒ Data Scientist  
☒ unknown  
☒ Software Engineer

Job titles Channels

General overview Channels overview Days to decision Funnel visualization

### Timeline - how many candidates we had for each job position?



### What is candidates gender?

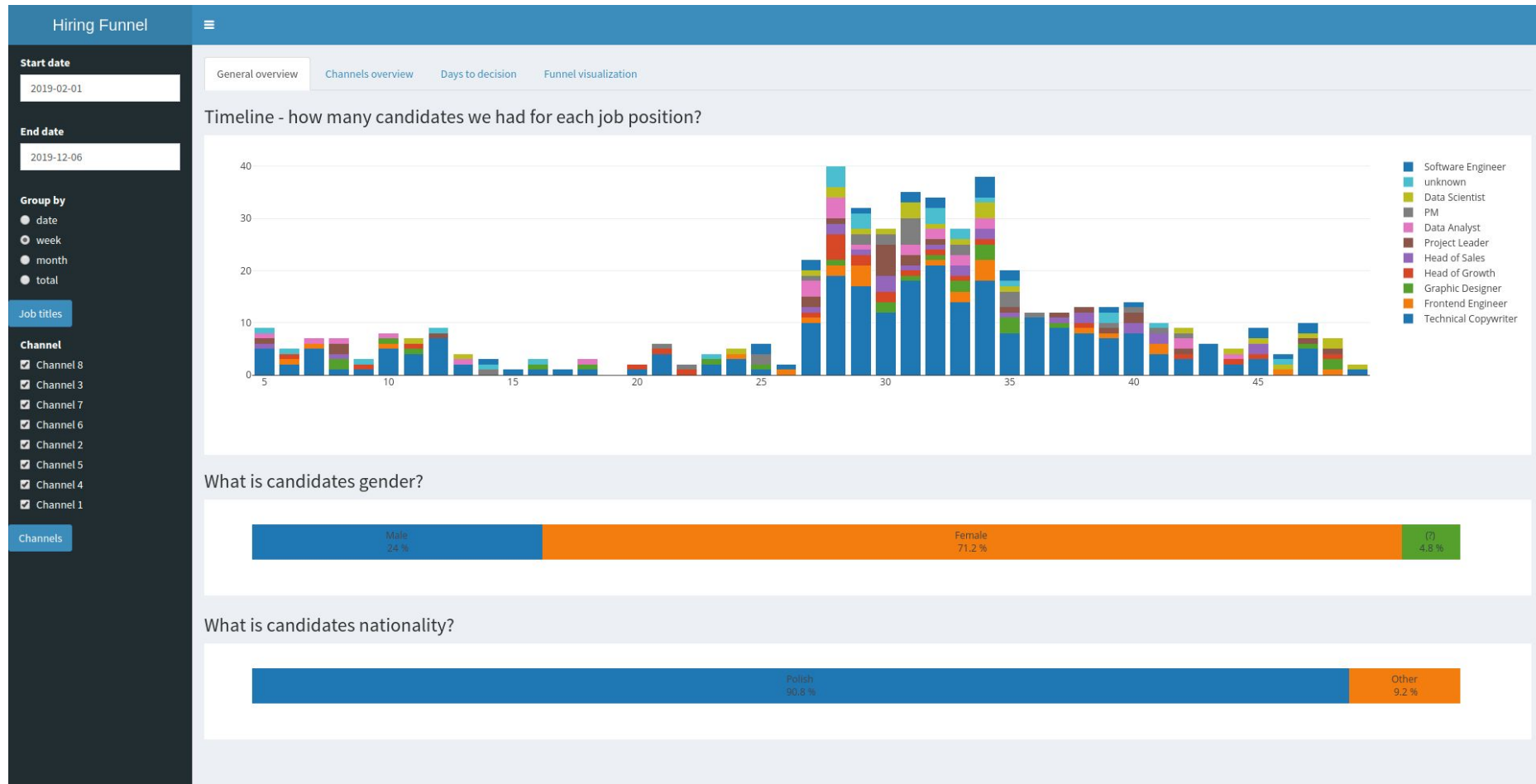


### What is candidates nationality?



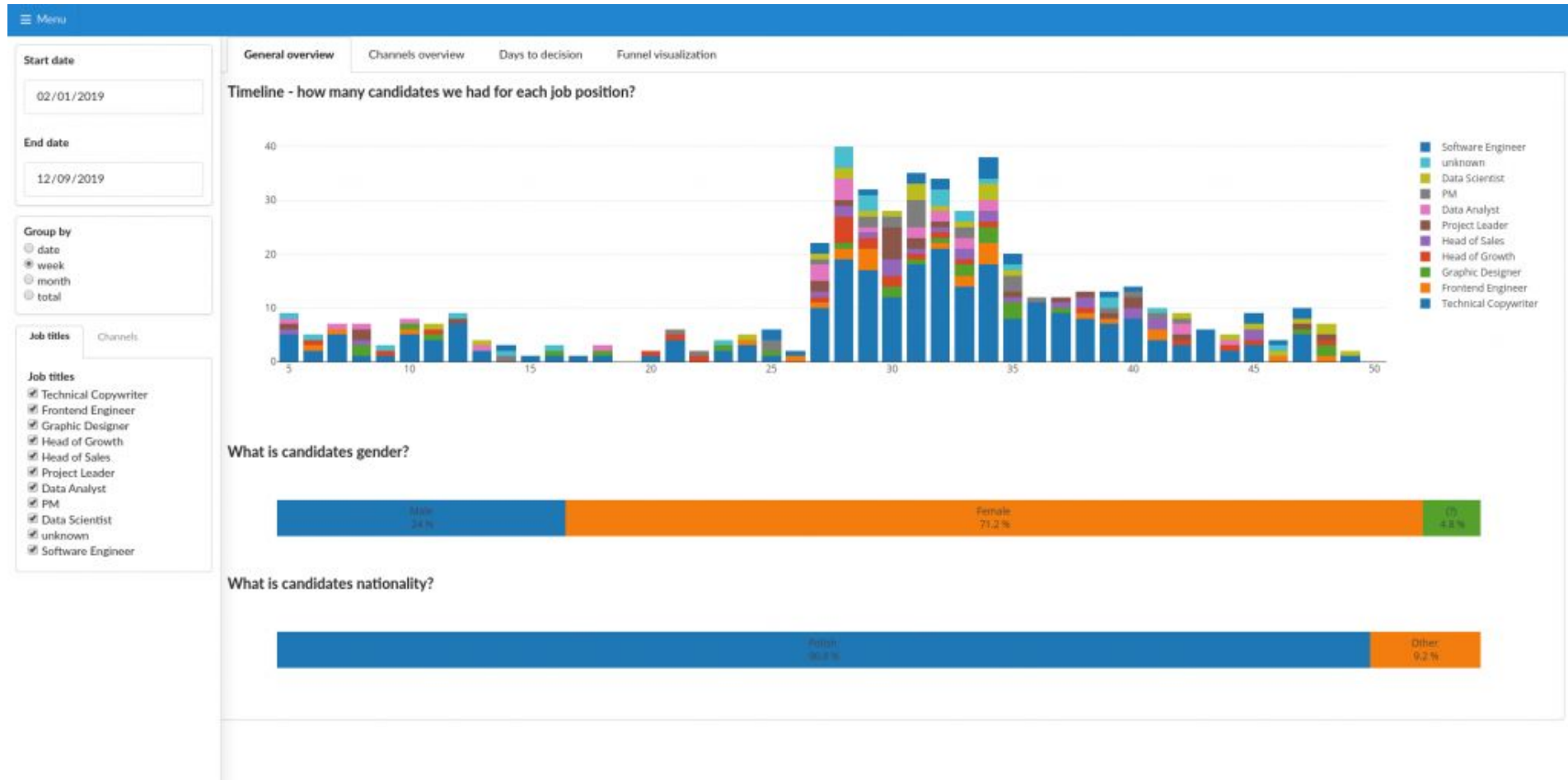
- Hiring funnel UI update (Shiny)  
<https://appsilon.com/journey-from-basic-prototype-to-production-ready-shiny-dashboard/>

# Examples



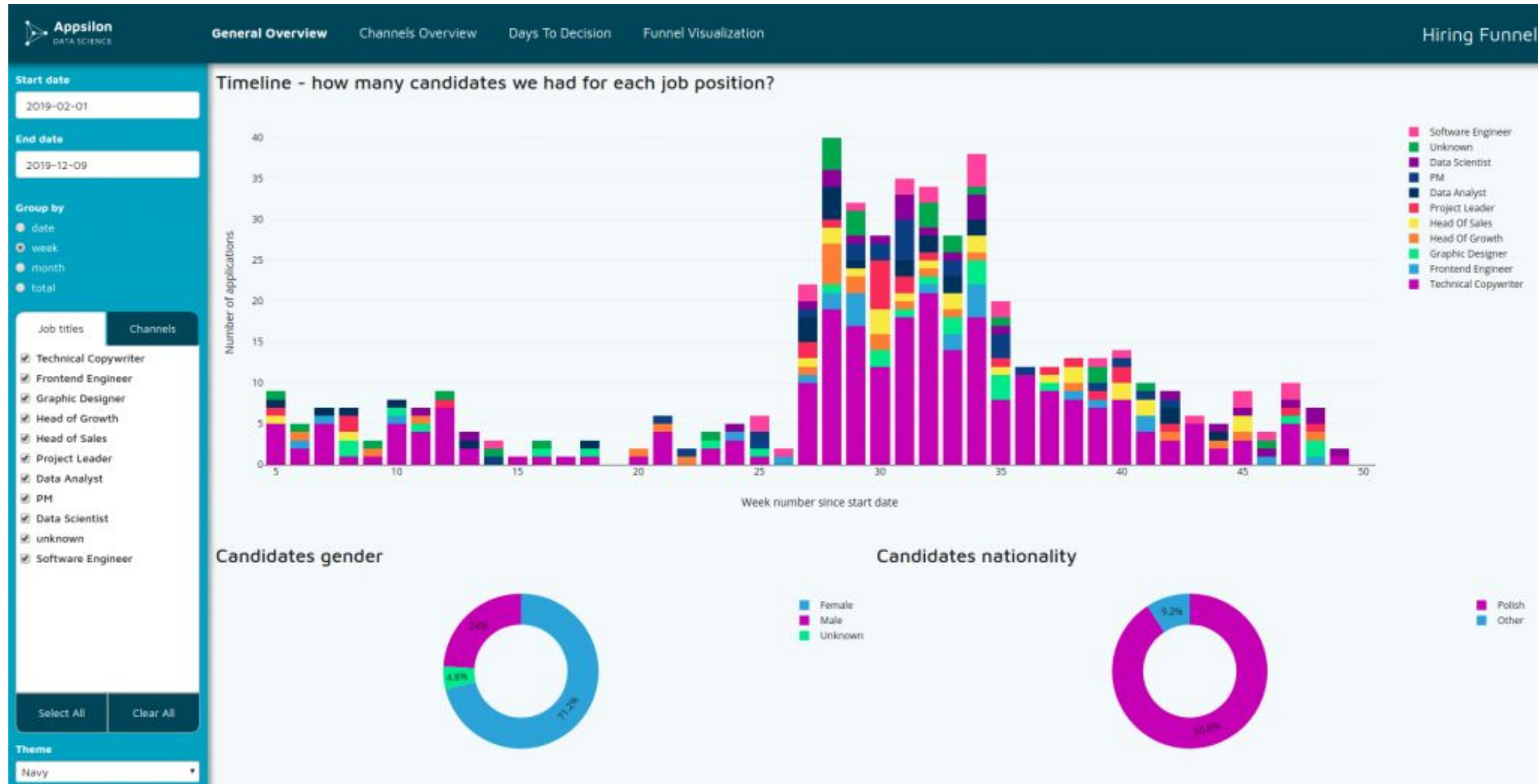
- Hiring funnel UI update (shinydashboard)

# Examples



- Hiring funnel UI update (semantic.dashboard)

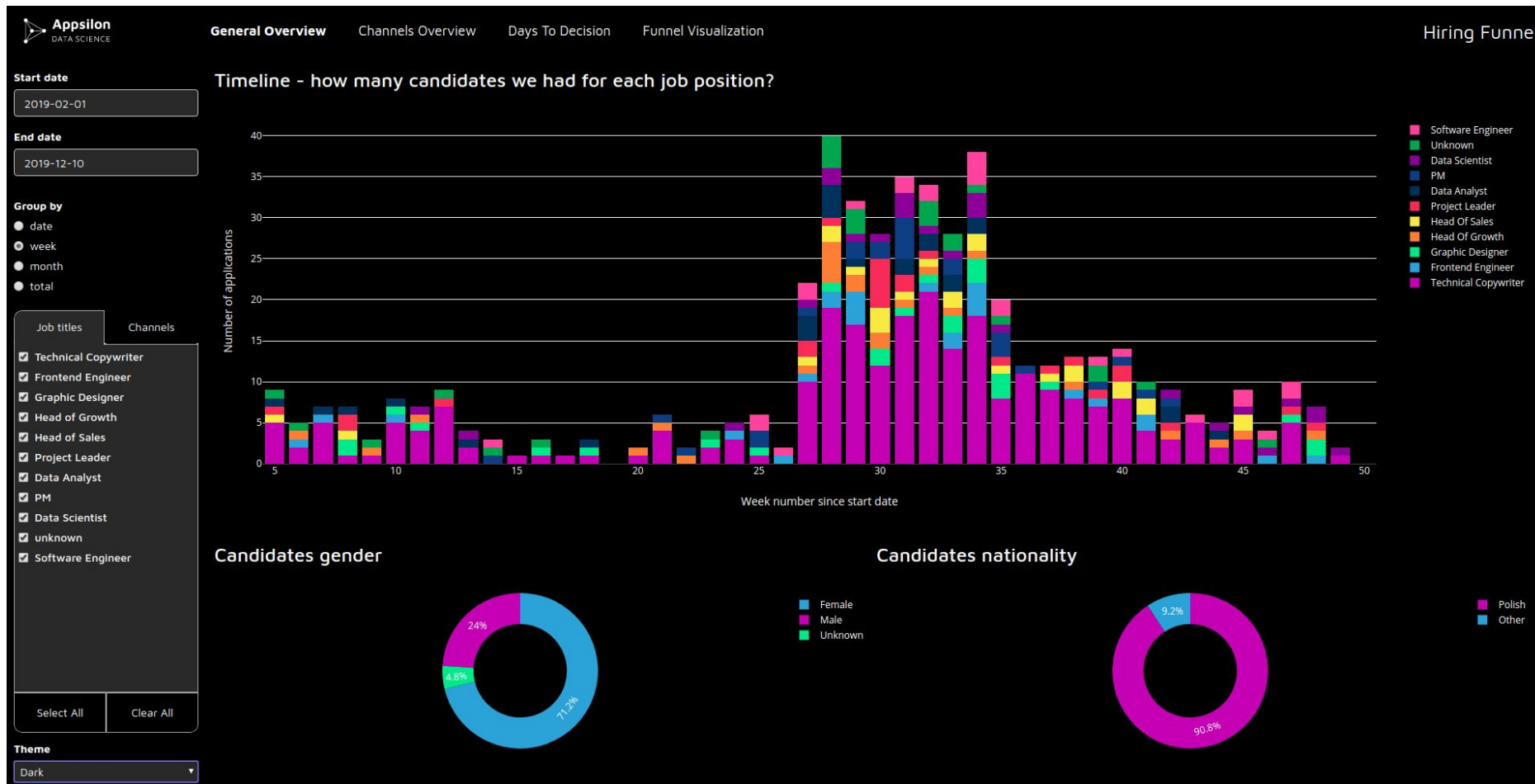
# Examples



- Hiring funnel UI update (custom built)

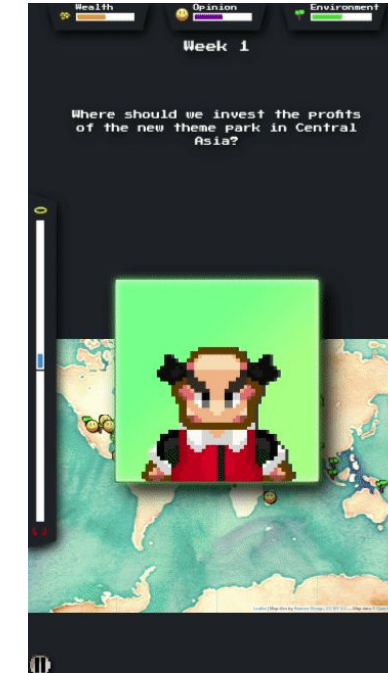
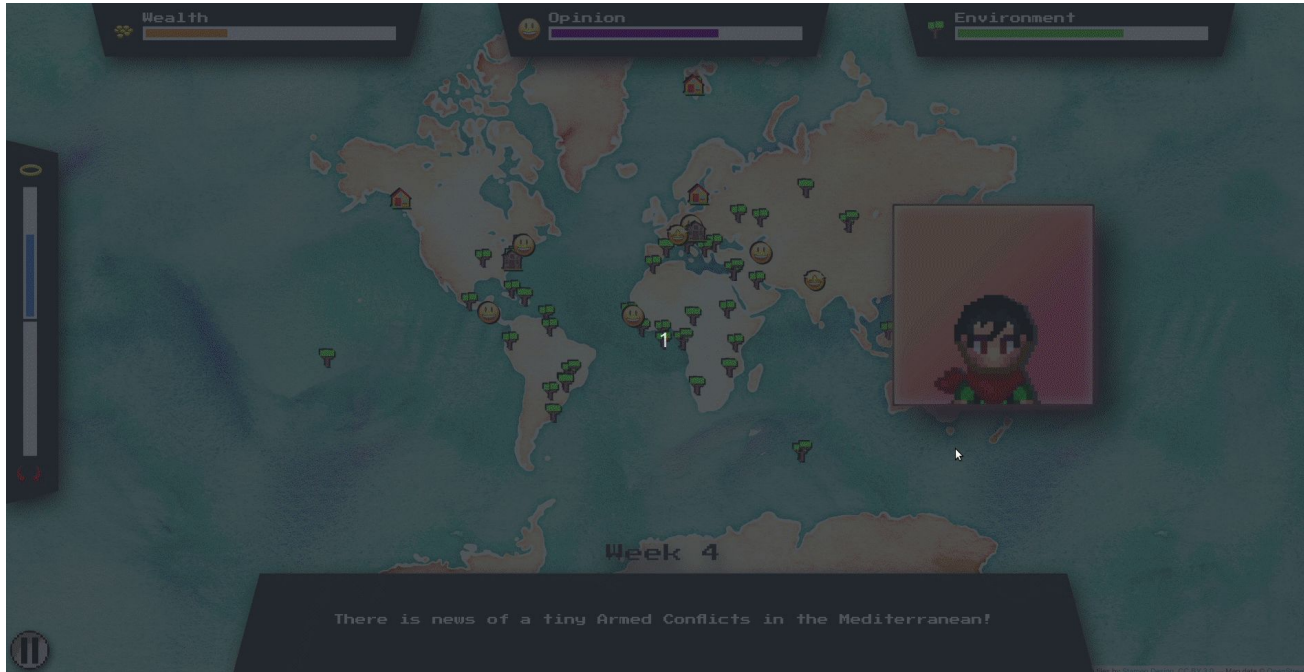


# Examples



- Hiring funnel UI update (custom built)  
<https://appsilon.com/journey-from-basic-prototype-to-production-ready-shiny-dashboard/>

# Examples



- Shiny Decisions
    - Reuses existing CSS framework (nes.css)
    - Custom built layouts and behavior
- <https://appsilon.com/is-it-possible-to-build-a-video-game-in-r-shiny/>

# Want to know more?

 @sparktuga

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