



Shiny is the answer!
...most of the time

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About me



Barbara Mikulášová
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- ❖ Enthusiastic R Shiny developer
- ❖ Member of the Risk Assessment Application dev team
- ❖ Recovering knitter



Is R Shiny the right solution for your project?



R Shiny boom



Initial release 2012

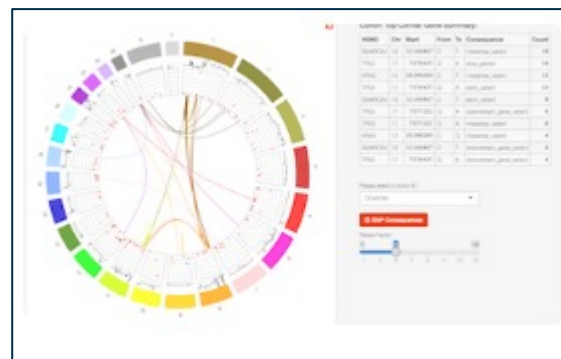
Production-grade
Shiny frameworks
{golem} 2021

Shiny for Python
released 2023

7 papers on
R Shiny presented at
PHUSE EU Connect
2024

414K downloads in
March 2024

```
1 library(shiny)
2 library(ggvis)
3 |
4 use_donors <- c("D033200", "D032887", "D049184")
5
6 options(shiny.table.class = "data table table-striped table-condensed ")
7
8 shinyUI(FluidPage(
9
10   tags$head(
11     includeCSS("www/styles.css")
12   ),
13   tags$head(
14     includeScript("www/ggcircos.js")
15   ),
16 ),
17 HTML("<h3>ICGC Pancreatic Cancer (Ductal Adenocarcinoma) - Genome Viewer</h3>"),
18 FluidRow(
19   column(7,
20     div(id = "app_info", class = "collapse out",
21       p("This visualisation is based on CircoS, a way of visualising whole
22         from various donors. See:"))
23 )
24 )
```



Source: [Shiny - Genome browser \(posit.co\)](https://posit.co/shiny-genome-browser/)

Is R Shiny the right tool for you?



Quiz time

1. Do you have R Shiny skillsets within your clinical programming teams?

Yes



Great! R Shiny may be for you

No



Consider other alternatives
or outsource R Shiny
development

Is R Shiny the right tool for you?



Quiz time

2. What problem do you want the application to solve?

Reporting



Maybe R Shiny,
maybe not

Analytics



R Shiny is a strong
candidate

Both



R Shiny is a strong
candidate

Is R Shiny the right tool for you?



Reporting tasks

Static Reports / Simple Dashboards

- Simple design
- Set graph types
- Quick development



Interactive Interface to Complex Processes

- Highly customised graphs
- Tools for additional data processing
- Non-standard data structures



Is R Shiny the right tool for you?



Quiz time

3. Does my company already use a different technology which can do what I want my R Shiny application to do?

Yes



Pause – how does R Shiny measure against the established software?

No

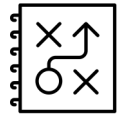


Great – let's develop the R Shiny application!



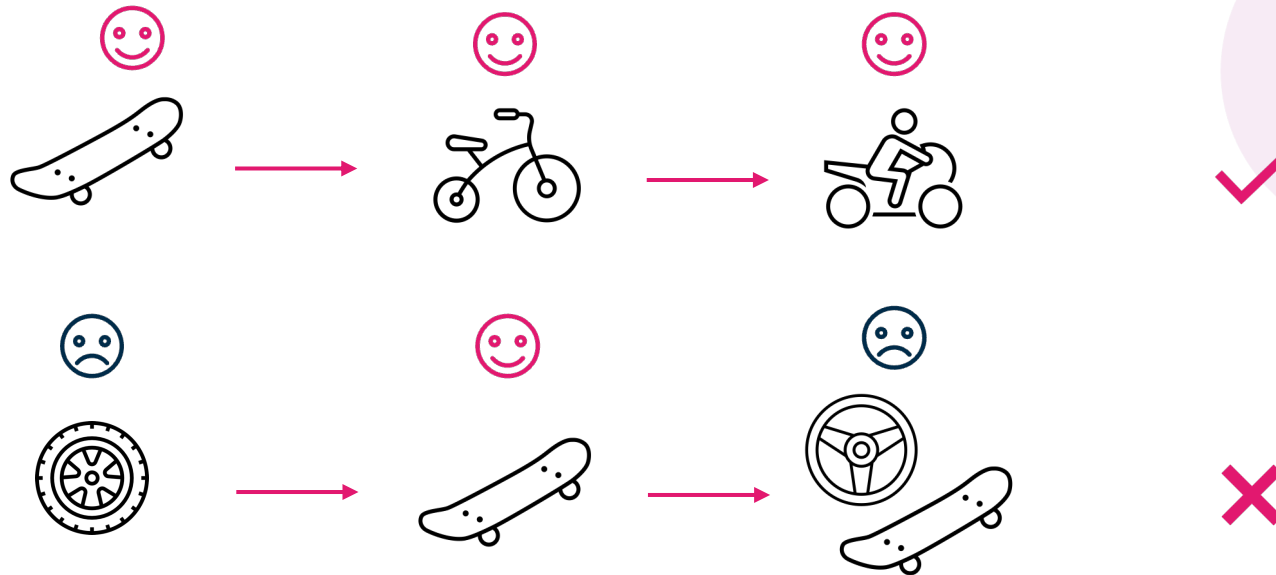
Where do we begin?

Next steps: planning your shiny app

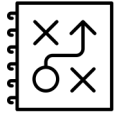


Plan minimum viable product (MVP)

- Bare-bone software product with only the most essential features



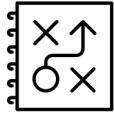
Next steps: planning your shiny app



List of important features

- A report download button
- Email notifications
- Interact with the parameters of a statistical model
- Pull and process data from 3 different sources
- Date filter
- Custom colour assignment feature
- Company logo
- User authentication system

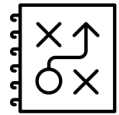
Next steps: planning your shiny app



Revised list of important features

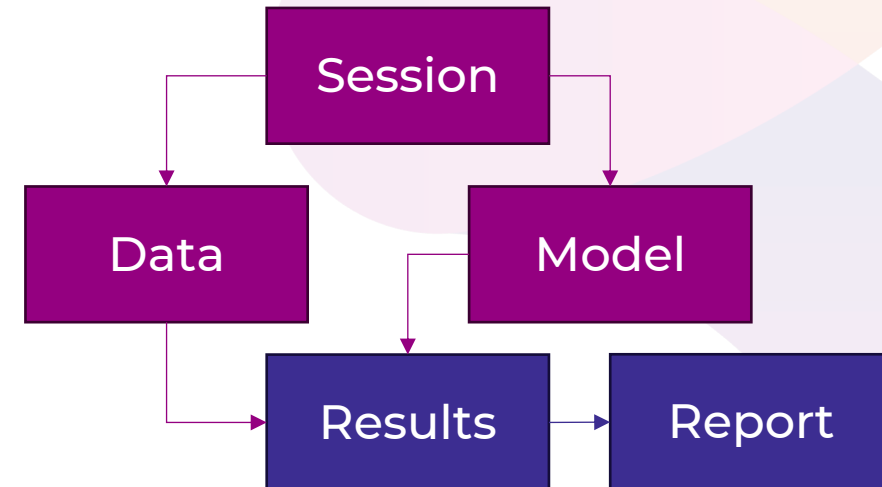
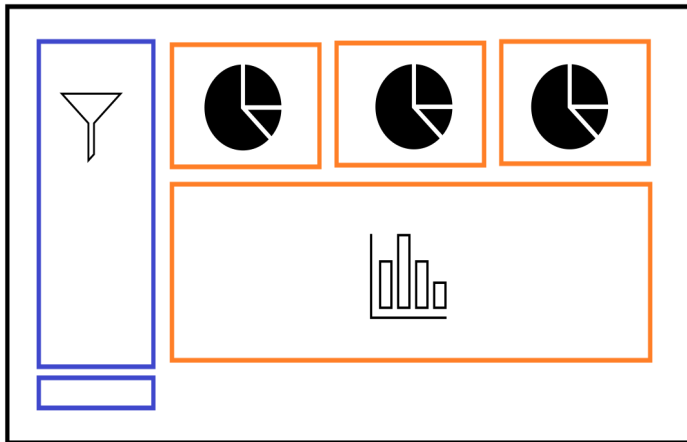
- A report download button ✓
- ~~Email notifications~~
- Interact with the parameters of a statistical model ✓
- Pull and process data from 3 different sources ✓
- ~~Custom colour assignment feature~~
- Date filter ✓
- ~~Company logo~~
- ~~User authentication system~~

Next steps: planning your shiny app



Draw minimum viable product (MVP)

- User interface
- Server logic and reactivity dependency tree



Takeaways

...Is R Shiny the answer to your problem? Depends!

1. List the functionalities you need your application or dashboard to have:
 - Is it the flexibility of the R Shiny framework and R language that you want to take advantage of?
 - Are other report building solutions sufficient?
2. Consider the abilities of your team:
 - Can you upskill your existing team member(s) in R Shiny?
 - Do you have the means to outsource the R Shiny application development?

Takeaways

If R Shiny is the answer, where do you start?

1. Identify the core functionalities of your application.
 - Design a minimum viable product
 - Use it to gather user's feedback early in the development process.
2. Carefully plan and sketch both the user interface and the server side of the shiny application.
 - Identify the individual components of the application and lay groundwork for modularization of the application

Thank you!
Q&A