



# R PACKAGE VALIDATION WORKSHOP

Managing  
Validation Projects

# Welcome

- Multiple Reports
- Project Management Models
- Ordering validation elements
- Adding and removing users



# MULTIPLE REPORTS

# {valtools} Reports

- Key stake holders may not be programmers
- Not all stakeholders need a full report

# Managing multiple reports

- Requirements report – confirming with key stakeholders expectations
- Validation report – Runs code and versions outputs

# Validation Report Rendering

- 
- `Valtools::vt_validate_report()`
  - Automatically runs report
  - Versions and Dates
  - Runs in fresh R session

# vt\_validate\_report Behavior

```
package: sample.package  
working_dir: vignettes  
output_dir: inst  
report_rmd_name: Requirement_Adoption.Rmd  
report_naming_format: Requirement_Adoption_Report_{package}_v{version}_{date}  
- usernames:
```

- output\_dir
- report\_rmd\_name
- report\_naming\_format



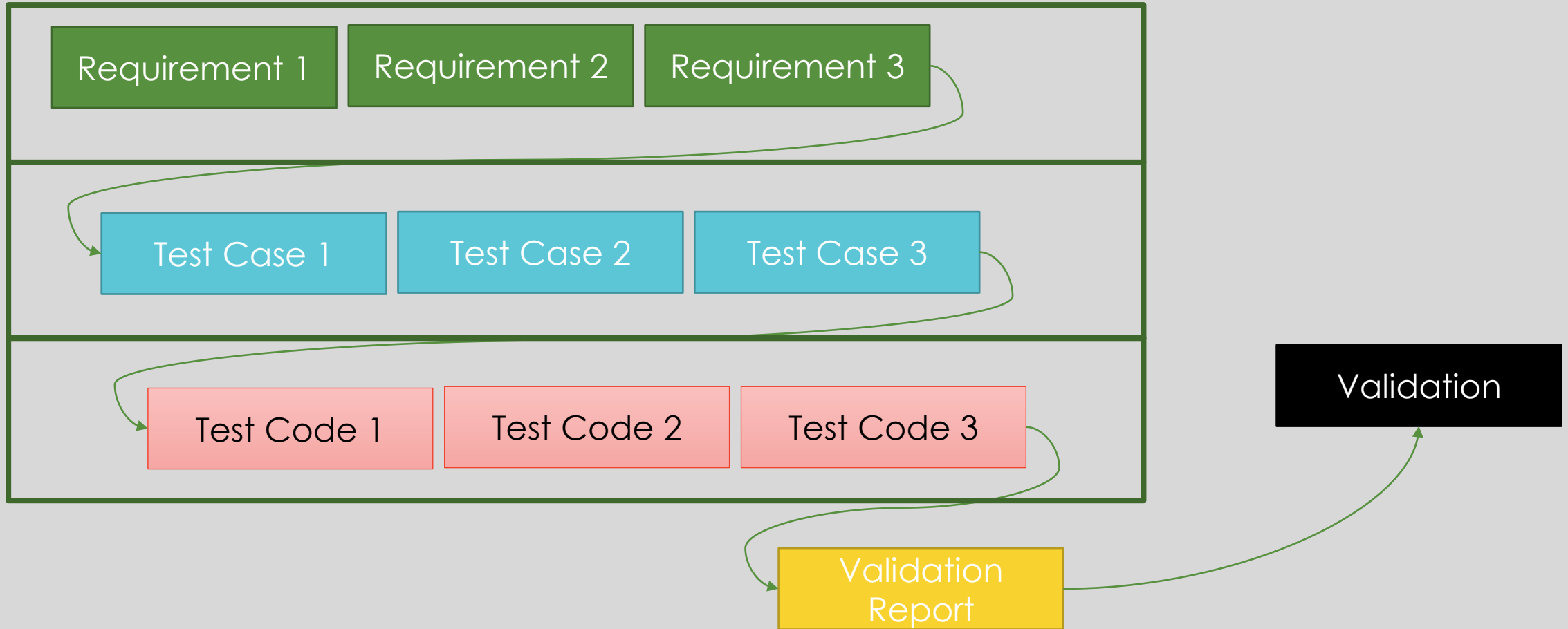
# PROJECT MANAGEMENT MODELS



# Project Development Models

- Waterfall Project Model
  - All Requirements designed up-front
  - Tests developed in once all requirements defined
  - Linear sequencing of events from requirement development to validation report

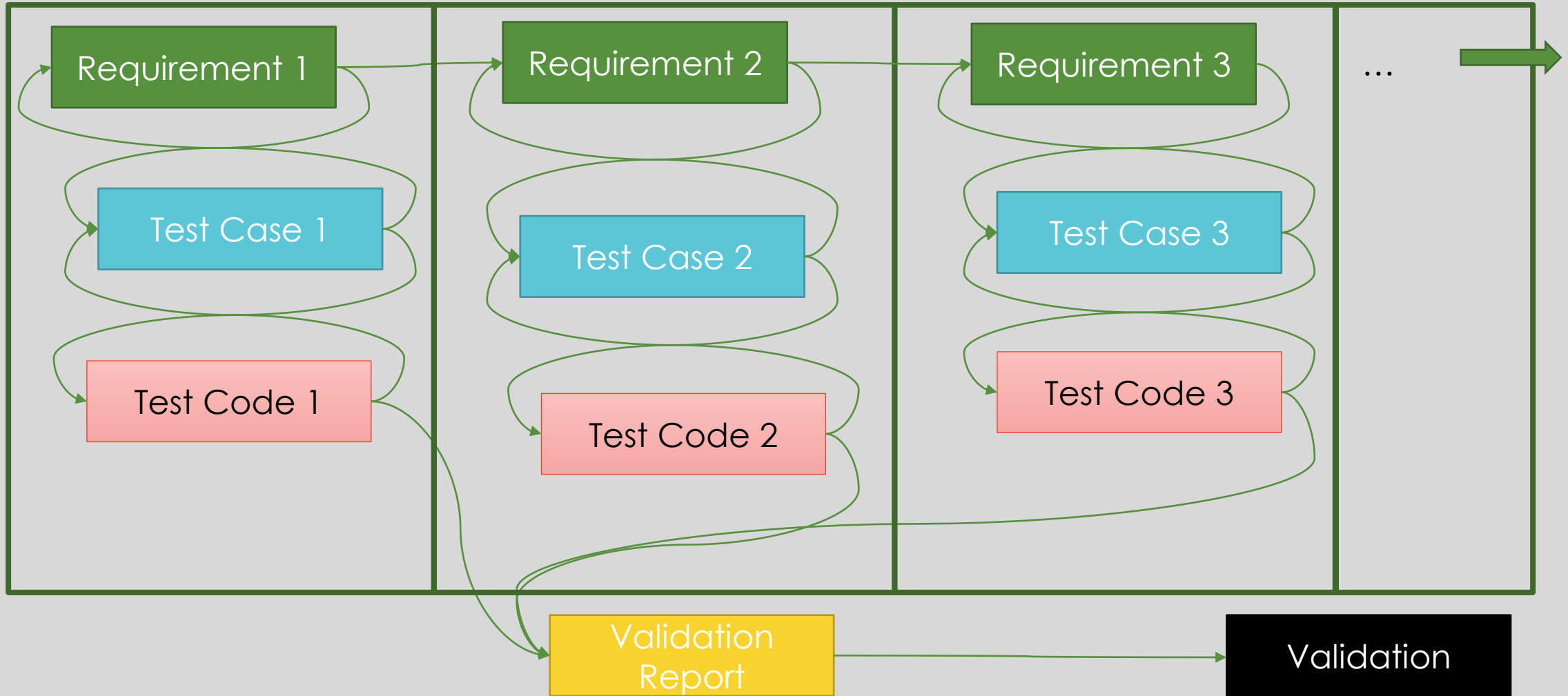
# Project Development Models



# Project Development Models

- Agile Project Model
  - Iterate on all elements based on user feedback
  - Short sprints to design and add/test features until users needs are met
  - Validation documentation may be generated and rerun after each sprint

# Project Development Models





# VALIDATION ELEMENT ORDERING

# Ordering options

- Requirements, Test Cases and Test Code are developed over time
- Order/Importance of each changes over time

# Given Set of Requirements, How would you order them?

- Numeric Vector Expectations
- Data Ingestion Expectations
- Character Vector Expectations
- Data Writing Expectations

# Ordering options

- Updating Requirements and Validation Reports by hand
  - Ensure order matches across updates
  - If any numbering impacted, need to update

```
1  ---
2  title: "Requirement Report"
3  author: "Validation Author"
4  date: "10/18/2021"
5  output: pdf_document
6  ---
7  {r setup, echo=FALSE, warning=FALSE}
8  library(valtools)
9  library(knitr)
10 opts_chunk$set(echo = FALSE,
11                results="asis")
12  ...
13
14  {r requirement-1}
15  vt_file(vt_path("requirements", "req1.md"))
16  ...
17
18  {r requirement-2}
19  vt_file(vt_path("requirements", "req2.md"))
20  ...
21
22  {r requirement-3}
23  vt_file(vt_path("requirements", "req3.md"))
24  ...
25
```



# Ordering options

- `vt_get_child_files(loc="yaml")`
  - Vector of files in order of yaml
- `vt_file()`
  - Serialized across vectors

```
1 ---
2 title: "Requirement Report"
3 author: "Validation Author"
4 date: "10/18/2021"
5 output: pdf_document
6 ---
7 {r setup, echo=FALSE, warning=FALSE}
8 library(valtools)
9 library(knitr)
10
11 opts_chunk$set(echo = FALSE,
12               results="asis")
13
14
15 child_files <- vt_get_child_files(loc="yaml")
16
17 ---
18
19 {r requirements}
20 vt_file(vt_path(child_files[grepl("^requirements",child_files)]))
21 ---
22
```

```
19 validation_files:
20 - req1.md
21 - req2.md
22 - req3.md
23 - TestCase1.md
24 - TestCode1.R
25
```

# Validation File Order options

- `vt_add_file_to_config()`
  - filename
  - before, after (tidyselect verbs)

```
vt_add_file_to_config("req04.md", after = endswith("02.md"))
```

```
19 validation_files:  
20 - req1.md  
21 - req2.md  
22 - req3.md  
23 - TestCase1.md  
24 - TestCode1.R  
25
```

- `vt_drop_file_from_config()`
  - filename

```
19 validation_files:  
20 - req1.md  
21 - req2.md  
22 - req4.md  
23 - req3.md  
24 - TestCase1.md  
25 - TestCode1.R
```



# USERS ACROSS TIME



Change is the only constant.

Heraclitus

“ quote fancy

# interactive prompting from vt\_use\_\*

```
> vt_use_req("requirement_001")
Item created:requirements/requirement_001.md
User `ehhughes` does not exist in the config file
Add user to config file?
[Y/n]: Y
Please supply some information for recording users within the package.
Note, that this information can be updated at any time though
`vt_add_user_to_config()`

Please provide the name of the person associated with the username
`ehhughes` and press `Enter`.
Name: Ellis Hughes

Please provide the title of the person associated with the username
`ehhughes` and press `Enter`.
Title: Programmer

Please provide the role of the person for this validation associated with
the username `ehhughes` and press `Enter`:
Role: Requirements writer

User `ehhughes` added to validation config file.
Filename(s): requirement_001.md added to validation config file.
* Modify 'C:/Users/ehhughes/Documents/Projects/R PACKAGE VALIDATION FRAMEWORK/test1234/vig
nettes/validation/requirements/requirement_001.md'
> |
```

# Validation Users

```
1 package: sample.package
2 working_dir: vignettes
3 output_dir: inst
4 report_rmd_name: Requirement_Adoption.Rmd
5 report_naming_format: Requirement_Adoption_Report_{package}_v{version}_{date}
6 usernames:
7   a_user:
8     name: A user
9     title: Programmer
10    role: Validation Lead
11   b_user:
12     name: B user
13     title: Manager
14     role: Requirement Author
15   user_b:
16     name: Val A Dashun
17     title: Programmer II
18     role: Tester
```

# Validation Team Recording options

- vt\_add\_user\_to\_config()
- vt\_drop\_user\_from\_config()



# COMPLETE EXERCISE 06