



# R PACKAGE VALIDATION WORKSHOP

Elements of  
Validation

# Welcome

- {valtools} infrastructure
- Elements of Validation
- Reports



# THE SETUP

# {valtools} infrastructure

- report .RMD
- validation folder
  - validation components
  - validation.yml
    - Working directory
    - Output directory
    - Users
    - Ordering of validation child files
  - [optional] change log
- [as needed] .gitignore, .here

```
· | - validation
· | · | - requirements/
· | · | - test_cases/
· | · | - test_code/
· | · | - validation.yml
· | · | - change_log.md
· | · | - .gitignore
· | ·
· | - validation.Rmd
```



# THE ELEMENTS

# Validation Components

“confirmation by examination and provision of objective evidence that software specifications conform to user needs and intended uses, and that the particular requirements implemented through software can be consistently fulfilled.”

# Validation Components – what needs to be authored?

- Requirements
- Test Cases
- Test Code

# Validation Reporting – what can be tracked by automating?

- Authorship
- Most recent edit dates
- Testing environment
- Test results



# Requirements - vt\_use\_req()

- **Key Arguments**

- **name** – Name of the new requirement. Automatically adds an `md` extension
- **username** – Name of the person creating the requirement

## \*\* interactive prompting

```
> 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()`

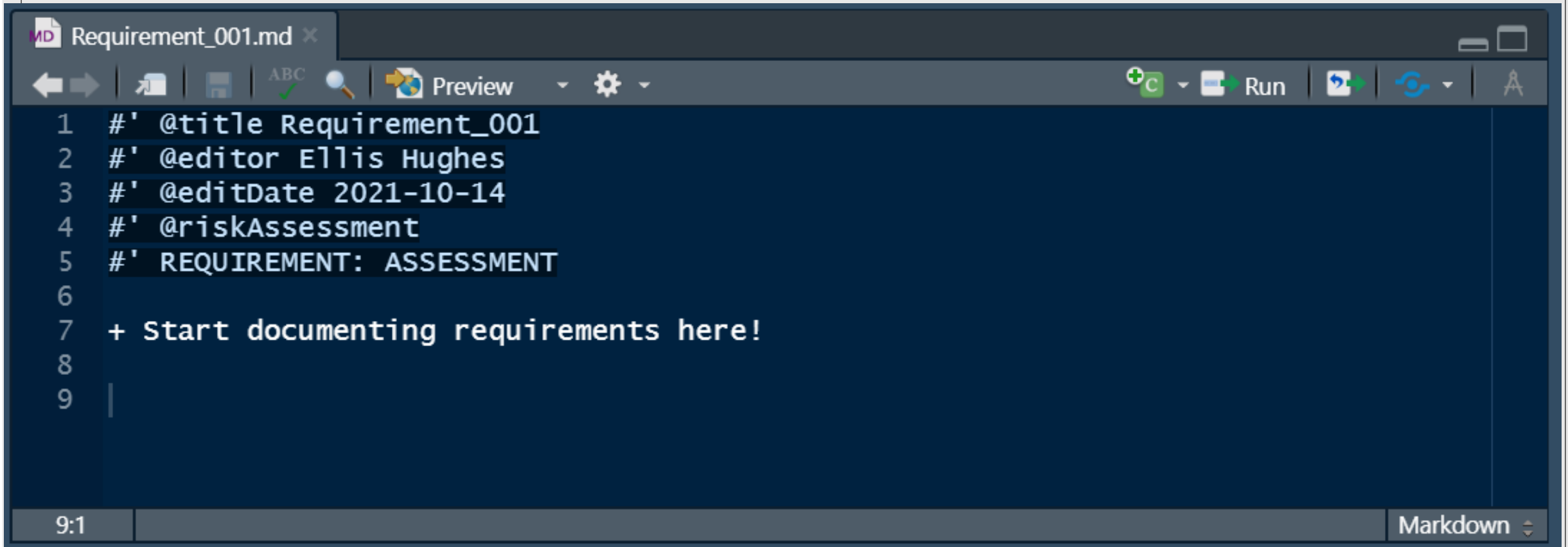
Please provide the name of the person associated with the username
`ehhughes` and press `Enter`.
Name: Ellis Hughes

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'
> |
```

# Requirements - vt\_use\_req()



The screenshot shows a markdown editor window titled 'Requirement\_001.md'. The editor has a dark blue background and a light gray toolbar at the top. The toolbar includes icons for undo, redo, save, search, and a 'Preview' button. On the right side of the toolbar, there are icons for a code editor, a 'Run' button, and a 'Markdown' dropdown menu. The main editing area contains the following text:

```
1 #' @title Requirement_001
2 #' @editor Ellis Hughes
3 #' @editDate 2021-10-14
4 #' @riskAssessment
5 #' REQUIREMENT: ASSESSMENT
6
7 + Start documenting requirements here!
8
9 |
```

The status bar at the bottom left shows '9:1' and the status bar at the bottom right shows 'Markdown'.



# COMPLETE EXERCISE 4