

Validating User Input and Data



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Overview



We'll use Python Regex to do the following:

- Validate a username
- Validate numeric user input
- Validate email addresses and flag invalid entries
- Avoid code injection





A young woman with long brown hair, wearing a red blouse, is sitting at a table in a dimly lit cafe or restaurant. She is looking down at a laptop screen with a smile on her face. A glass of water is on the table next to her. The background is blurred, showing other tables and chairs.

Validating user input



Regex for Pattern Matching

Regex is a powerful tool for pattern matching and searching in text and this can also be used to ensure data integrity and prevent code injection.



Demo

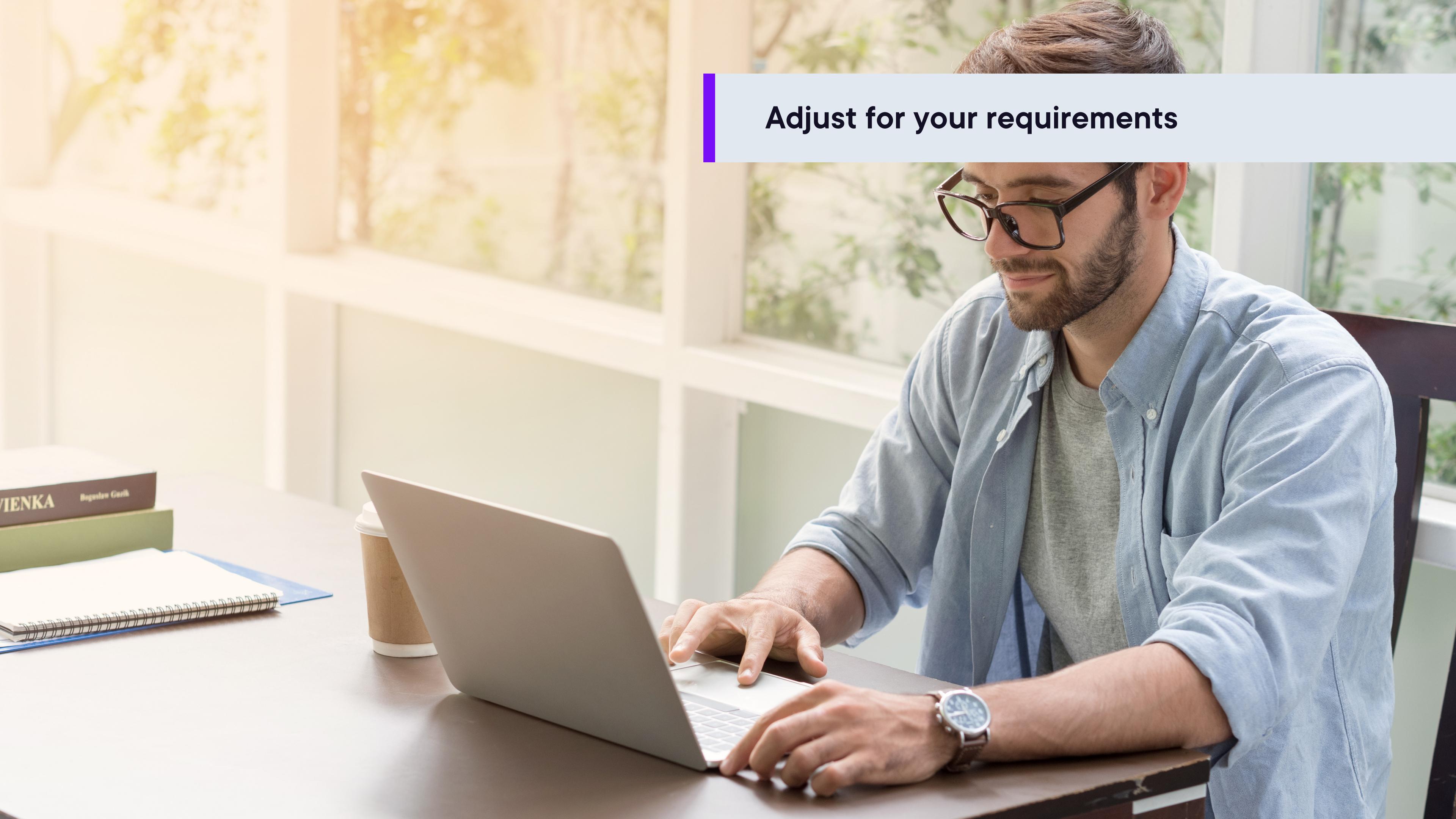


Check if a username meets the requirement

Steps:

- Create a function that holds the pattern and uses the fullmatch function
- Ask for user input
- Call the function and check if the input is valid



A young man with dark hair and a beard, wearing black-rimmed glasses and a light blue button-down shirt over a grey t-shirt, is seated at a wooden desk. He is looking down at a silver laptop keyboard. On the desk next to him is a white spiral-bound notebook, a brown paper coffee cup, and a stack of books. One book's cover is visible, showing the title "WIENKA" and the author's name "Bogusław Gasiński".

Adjust for your requirements



1

2

3

Checking Numeric Data

Sometimes you want to make sure the user only inputs numbers. This can be done with regular expressions.



Demo



Validate input to ensure it's numeric

Steps:

- Create a function that calls the search function with the numeric pattern to validate
- Get user input
- Check the user input with the validation function



Adjust the examples for your requirements





A close-up, profile shot of a man with dark hair and a beard, wearing black-rimmed glasses. He is looking upwards and to his left with a thoughtful expression. In the background, a computer monitor displays a complex interface with multiple windows open, showing lines of code and data structures, suggesting he is a developer or programmer.

Validating email addresses



Email addresses

Common part of many datasets and ensuring that they're valid is crucial to maintaining the quality and integrity of your data.



Demo



Validate email addresses from a file and save entries that don't match separately

Steps:

- Define the pattern



Email Pattern

`^ [a-zA-Z0-9._%+-]+`



Email Pattern

`^ [a-zA-Z0-9._%+-]+@`



Email Pattern

`^ [a-zA-Z0-9._%+-]+@[a-zA-Z0-9.-]+`



Email Pattern

`^ [a-zA-Z0-9._%+-]+@[a-zA-Z0-9.-]+\.`



Email Pattern

`^ [a-zA-Z0-9._%+-]+@[a-zA-Z0-9.-]+\.[a-zA-Z]{2,}$`



Demo

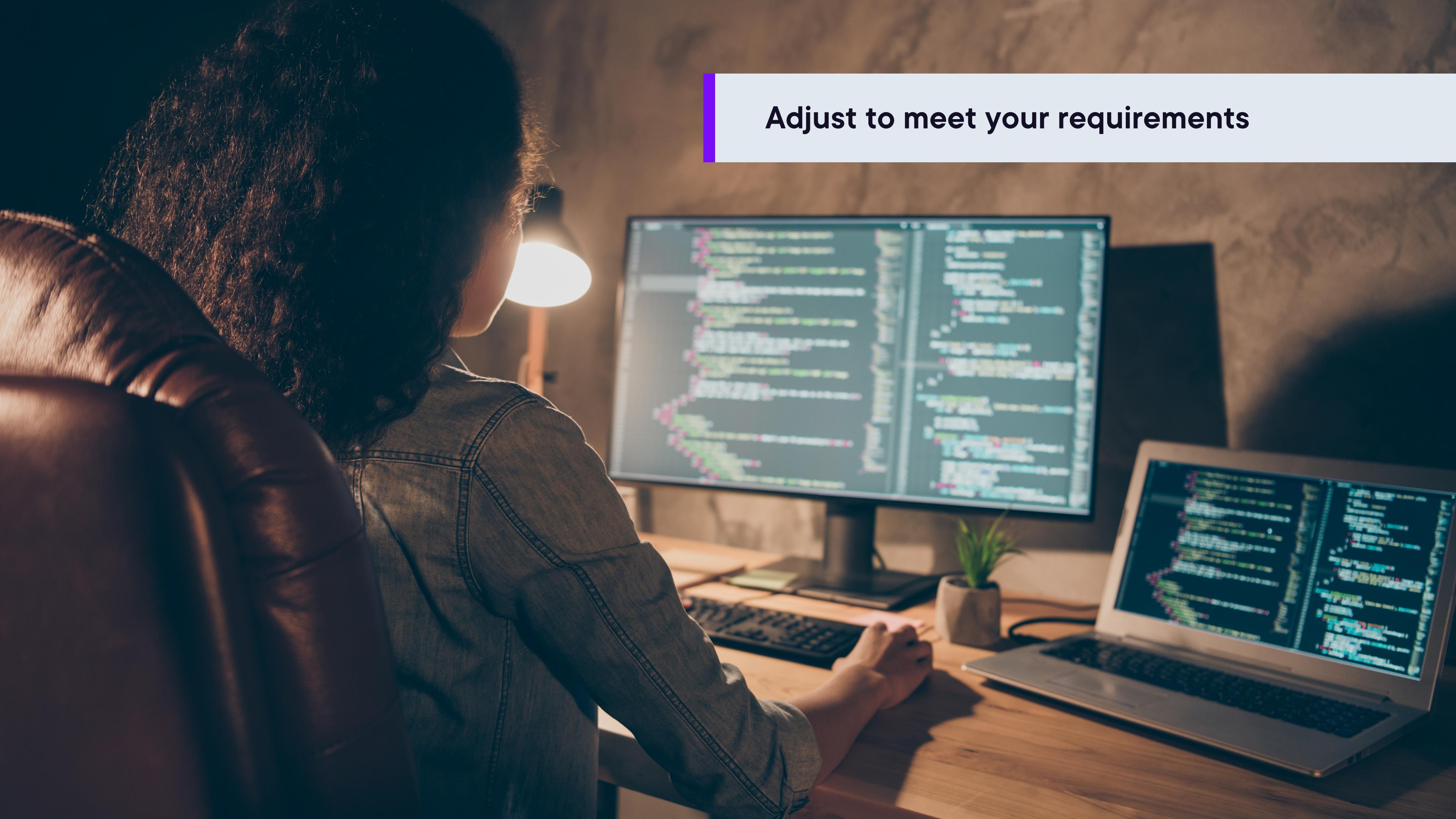


Validate email addresses from a file and save entries that don't match separately

Steps:

- Define the pattern
- Read the list of email addresses
- Filter invalid email addresses
- Save these to a file



A person with long dark hair tied back is seen from the side, working at a wooden desk. They are wearing a denim jacket over a light-colored shirt. In front of them is a large monitor and a laptop, both displaying multiple windows of code in a dark-themed IDE. A small potted plant sits between the two screens. The background is a warm, dimly lit room.

Adjust to meet your requirements





Code Injection

Happens when you directly insert user input in lines of code you're going to execute

Use regex to avoid dangerous statements and
sanitize them



Demo



Validate input and prevent code injection

Steps:

- Create a function for sanitizing the user input
- Create a function to check for dangerous characters
- Ask for user input, sanitize it and check for code injection



This should not be the only safeguard.

