

Program for Web Scraping and Data Extraction: Use R packages like rvest or httr to scrape data from a specific website or API.

- **Define the target website or API endpoints and specify the data to be extracted.**
- **Retrieve the HTML content or JSON response from the website or API.**
- **Parse and extract the desired data using CSS selectors, XPath, or JSON parsing techniques.**
- **Save the extracted data to a file or perform further analysis on it.**

```
# Load necessary libraries
library(rvest)

# Specify the URL of the website to scrape
url <- "http://books.toscrape.com/"

# Download the HTML content
html_content <- read_html(url)

# Define XPath selectors to extract data
title_xpath <- '//*[@class="product_pod"]/h3/a'
price_xpath <- '//*[@class="product_pod"]/div[2]/p[1]'

# Extract data using XPath selectors
titles <- html_content %>%
  html_nodes(xpath = title_xpath) %>%
  html_text() %>%
  trimws() # Remove leading/trailing whitespaces

prices <- html_content %>%
  html_nodes(xpath = price_xpath) %>%
  html_text() %>%
  trimws() # Remove leading/trailing whitespaces

# Combine the extracted data into a data frame
book_data <- data.frame(Title = titles, Price = prices)

# Print the extracted data
print(book_data)

# Save the extracted data to a CSV file
write.csv(book_data, "book_data.csv", row.names = FALSE)
```