

# Web Scraping Project with Python on Amazon

## Overview

This project involves scraping data from Amazon's website for educational purposes, showcasing the ability to extract and work with information using web scraping techniques in Python. The primary goal is to collect data regarding a specific type of t-shirt available on Amazon.

## Objectives

- **Educational Purpose:** Demonstrating web scraping skills for data collection.
- **Data Extraction:** Retrieving the title, price, and other relevant details of a targeted item.
- **Automated Email Notification:** Utilizing Python libraries to set up email notifications for price reductions or item availability.
- **Excel Data Storage:** Creating an Excel table to store the collected data.

## Tools and Technologies Used

- **Python:** Utilized as the primary programming language for web scraping and automation tasks.
- **Beautiful Soup (bs4):** A Python library used for parsing HTML and extracting relevant data from web pages.
- **Requests:** Employed for making HTTP requests and fetching web page content.
- **Time and Datetime:** Python libraries used for time-related operations and date handling within the scripts.
- **CSV:** Utilized for handling CSV files, aiding in data extraction, and storage in a structured format.
- **SMTPLib:** A Python library used to enable email functionality and automate email notifications.
- **Pandas:** Employed for data manipulation, creation, and handling of Excel files in the form of DataFrames.

## Project Workflow

1. **Scraping Amazon Data:** Using Python and BeautifulSoup to extract item details (title, price, etc.) from Amazon.
2. **Automated Email Setup:** Setting up a Python script to send email notifications for price reductions or item availability.
3. **Data Storage:** Saving the scraped data into an Excel table for further analysis.

## Project Outcome

- **Data Collection:** Successfully scraped data from Amazon regarding the targeted t-shirt item.
- **Automated Email Notification:** Configured email alerts for price reductions or item availability.
- **Data Storage:** Created an Excel table to store and organize the collected data.

## Conclusion and Purpose

The purpose of this project is to showcase web scraping skills for data collection. Web scraping serves as a valuable tool to gather datasets for further analysis and project creation. The project's primary aim is to demonstrate proficiency in web scraping techniques and automation using Python.

## Next Steps

- **Enhancements:** Exploring further automation techniques or adding more features to the email notification system.
- **Expanding Scope:** Applying web scraping skills to different websites or categories for broader data collection.