**📘 Web Scraping A to Z Full Roadmap (Bangla & English)**

**🎯 Aa¨vq 1: Web Scraping Kx?**

**✅ evsjv:**

**Web Scraping** n‡”Q B›Uvi‡b‡Ui I‡qemvBU †\_‡K †WUv ¯^qswµqfv‡e (Automatically) msMªn Kivi c×wZ|

**✅ English:**

Web scraping is the process of automatically extracting data from websites using programs.

**🎯 Aa¨vq 2: Web Scraping †Kb †kLv Riæwi?**

**✅ Kx Kv‡R jv‡M?**

* Product price tracking (Daraz, Amazon)
* Job listing collection (LinkedIn, BdJobs)
* News aggregation (Prothom Alo, BBC)
* Academic data collection (Student portal scraping)
* Competitor analysis in eCommerce
* Real-time stock or crypto price monitoring
* Automation tasks (form fill, login, download, etc.)

**🎯 Aa¨vq 3: Web Scraping wkL‡Z hv Rvb‡Z n‡e**

| **ch©vq** | **welq** |
| --- | --- |
| 🔹 Basic | HTML, CSS Structure, Requests, Response, Headers |
| 🔹 Intermediate | BeautifulSoup, Scraping Pagination, Login |
| 🔹 Advanced | Selenium, API Scraping, Automation |
| 🔹 Pro | CAPTCHA Bypass, Async Scraping, Database Integration |

**🎯 Aa¨vq 4: Full Syllabus Plan**

**🔰 Beginner Level**

| **Week** | **Topic** | **Tools** |
| --- | --- | --- |
| 1 | Introduction to Web Scraping | — |
| 2 | HTML, CSS Basics | — |
| 3 | Requests and Responses | requests |
| 4 | Parsing with BeautifulSoup | bs4 |
| 5 | Scraping Lists, Tables | bs4, pandas |
| 6 | Pagination Scraping | bs4, requests |
| 7 | Login System Scraping | requests, session |

**⚙️ Intermediate Level**

| **Week** | **Topic** | **Tools** |
| --- | --- | --- |
| 8 | JavaScript-rendered Sites | selenium |
| 9 | Scraping Forms and Search | selenium, bs4 |
| 10 | File Download Automation | selenium, requests |
| 11 | Saving to CSV/Excel/DB | pandas, sqlite3, json |
| 12 | Ethical Scraping & robots.txt | — |

**🚀 Advanced Level**

| **Week** | **Topic** | **Tools** |
| --- | --- | --- |
| 13 | API Scraping | requests, json |
| 14 | Asynchronous Scraping | aiohttp, asyncio |
| 15 | Cloud Deployment | Flask, Render, FastAPI |
| 16 | Real Projects with Dashboard | Django, Pandas |

**🎯 Aa¨vq 5: Practice & Projects**

**✅ Mini Projects:**

* Scrape product prices from Daraz
* Scrape headlines from Prothom Alo
* Scrape GitHub repos of trending topics
* Scrape Cricket scores (Live)

**✅ Final Projects:**

* Bangladeshi Job Scraper Dashboard
* Real-time News Aggregator
* eCommerce Tracker (price change alert)
* Crypto Tracker with Graphs

**🎯 Aa¨vq 6: Automation †Kb `iKvi?**

**✅ †Kb Automation Riæwi:**

gvbyl cªwZ †m‡K‡Û †WUv †`L‡Z cv‡i bv, wKš‘ Python script cv‡i eo †WUv wb‡R GKv msMªn Kiv mgqmv‡c¶

Login, form fillup, download BZ¨vw` KvR evievi Ki‡j mgq bó nq

cª‡dkbvj Kv‡R wbqwgZ †WUv cª‡qvRb nq — automation euvPvq mgq

**✅ e¨envi:**

* Cronjob w`‡q Daily scraping
* Email automation (scraped data cvVv‡bv)
* Scraping + storing in database
* Auto-upload scraped CSV to Google Drive