ASSIGNMENT 1 REPORT

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Topic: Home Internet Service Provider Web Scraping (VMedia)
Tool Used: Java + Selenium WebDriver
Date: 22-05-2025

A. ABOUT THE ISP SITE VMEDIA

https://www.vmedia.ca/en

VMEDIA is a Canadian telecommunications company that offers affordable home services like internet, TV, phone, and home security. Founded in 2013 and based in Toronto, VMedia aims to provide Canadians with flexible, no-contract options as an alternative to larger providers .

In 2020, VMedia launched RiverTV, Canada's first standalone live and on-demand streaming TV service . The company was acquired by Quebecor in 2022 and now operates under Freedom Mobile

VMedia is known for its competitive pricing, unlimited usage, and commitment to customer service, making it a popular choice for Canadians seeking cost-effective telecom solutions.

B. TASKS OF ASSIGNMENT 1

TASK 1: BASIC PLAN SCRAPING

For Task 1, (https://www.vmedia.ca/en/internet/ontario) is the link as my target to scrape internet service provider plans. The goal was to extract basic information from each internet plan card. I used **WebDriverWait** to ensure elements were loaded before interaction.

About the Code:

The code scrapes internet plan data from VMedia's Ontario page using **Selenium WebDriver** and **ChromeDriver**. Key components used:

- **WebDriver & ChromeDriver**: To launch and control the browser.
- **WebDriverWait + ExpectedConditions**: Ensures elements like plan cards load before interaction.
- **By.cssSelector**: Selects HTML elements containing plan data.
- **List<WebElement>**: Collects multiple plan elements for iteration.

Data Extracted:

- Plan Name
- Unlimited Label means the total data available at high speed in the plan
- Price (handled for CSS ::before tag)
- Download Speed
- Upload Speed
- Technology (e.g., Cable, DSL, FTTN)

All extracted information was saved in a CSV file named **vmedia_featured_plans.csv**.

Screenshots:

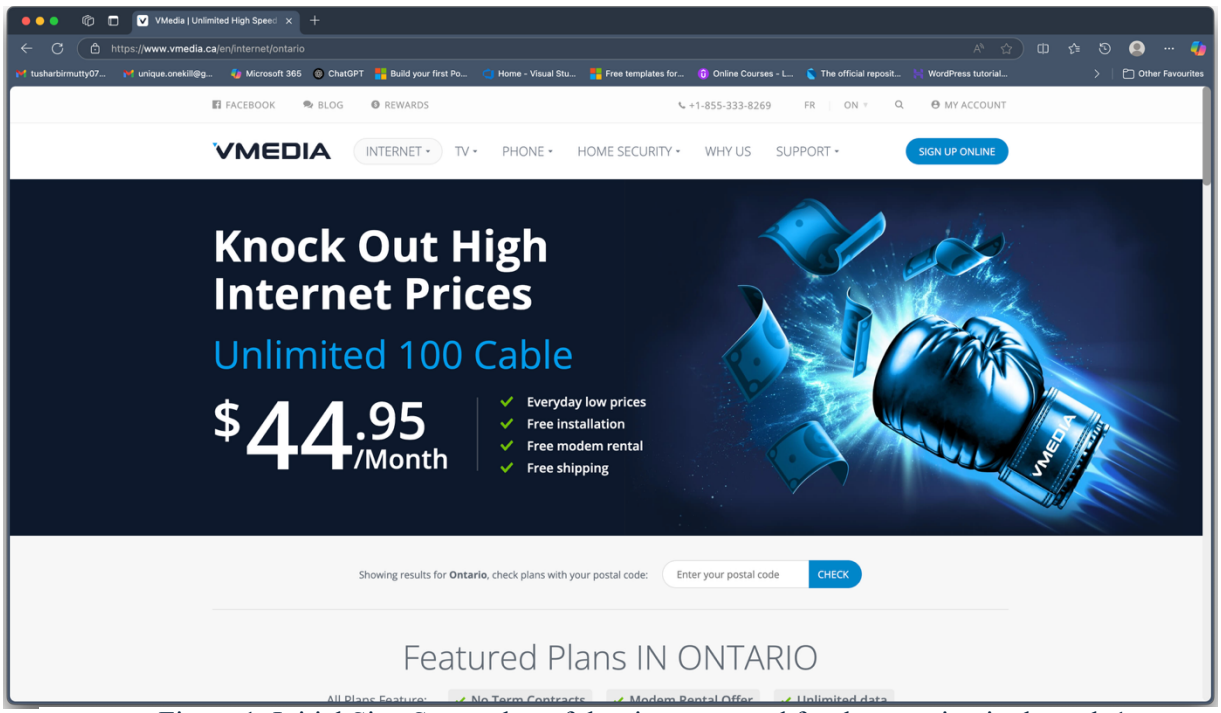


Figure 1: Initial Site: Screenshot of the site page used for the scraping in the task 1

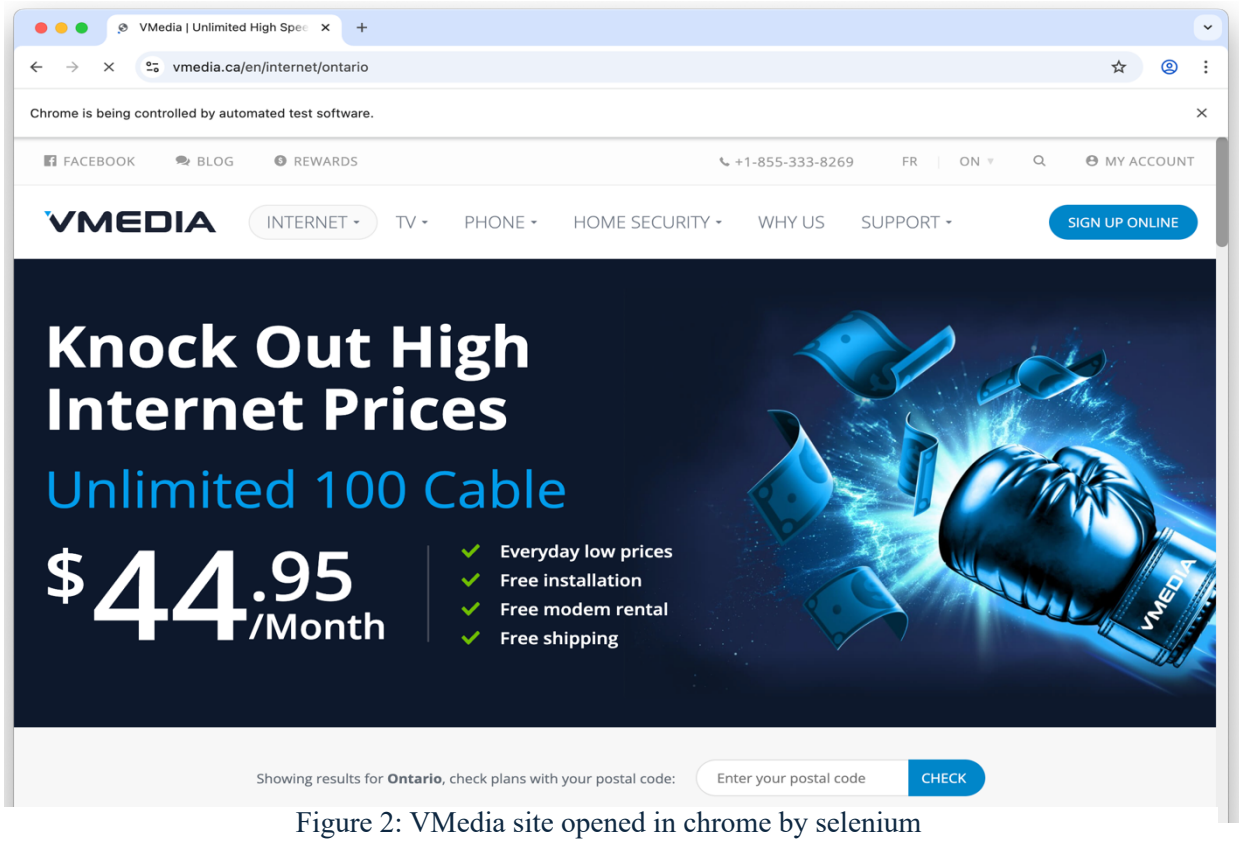


Figure 2: VMedia site opened in chrome by selenium

Figure 3: Console Output of Task 1

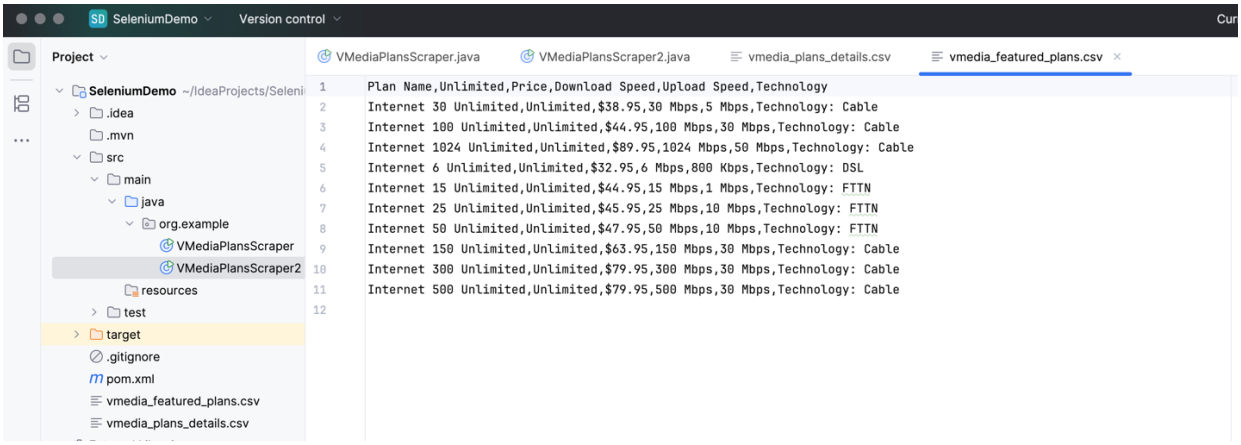


Figure 4: CSV output of Task 1

TASK 2: DETAIL PAGE SCRAPING

For Task 2, I extended the scraper to follow each plan's detail page link and extract additional plan-specific information.

Additional Data Extracted:

- Full Plan Features
- Important Information (offers and policies)
- Plan Features (bullets)
- Pros (e.g., No Contract, No Hidden Fees)
- Compatible Modems URL

ABOUT THE CODE:

1. **JavascriptExecutor**: Used to **open each plan's detail page in a new browser tab** via JavaScript: window.open() simulates a user opening a new tab.

2. **Tab Handling with driver.getWindowHandles()**: Collects all open browser tabs/windows. Switches to the **newly opened tab** using driver.switchTo().window(...) to load the plan's detail page.
3. **Detail Page Data Extraction**: After switching to the plan's page, it extracts:
   > **Description** from the .internet-package__description sections
   > **Features** from a list of feature elements.
   > **Pros** (advantages or highlights) from pros section.
   > **Compatible modem link**, if available.
4. **Tab Cleanup**: After extracting info, the **detail tab is closed**. Focus is switched back to the original tab (the main plans page) for the next iteration.

This data was appended to the original dataset and saved in a new CSV file called vmedia_plans_details.csv.

SCREENSHOTS

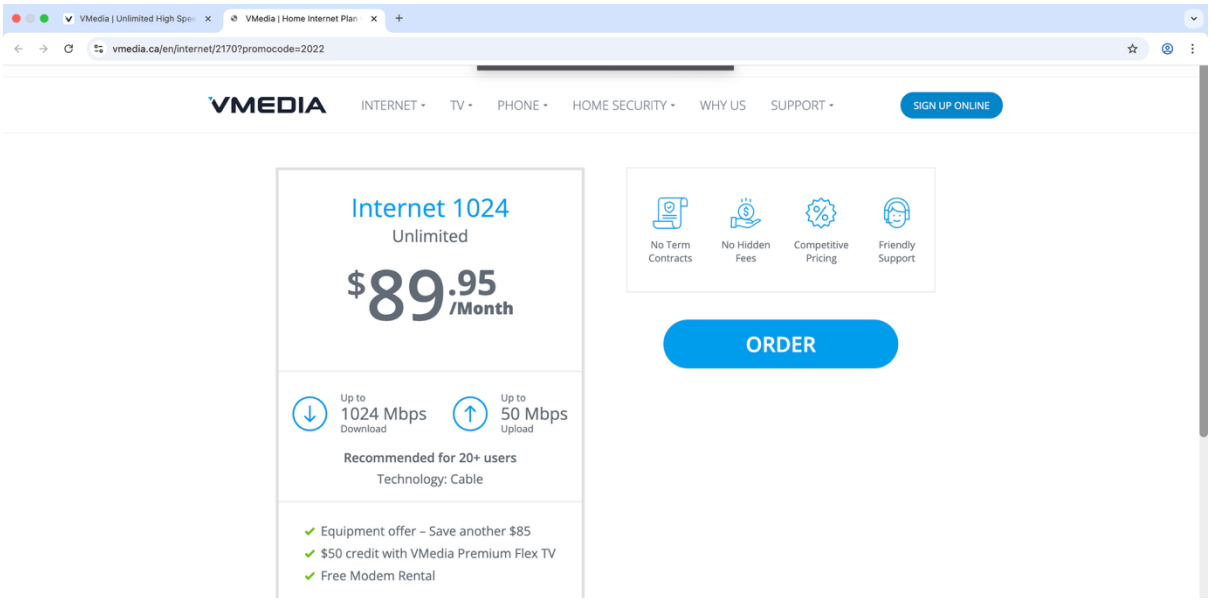


Figure 5: Automated tabs opening by selenium

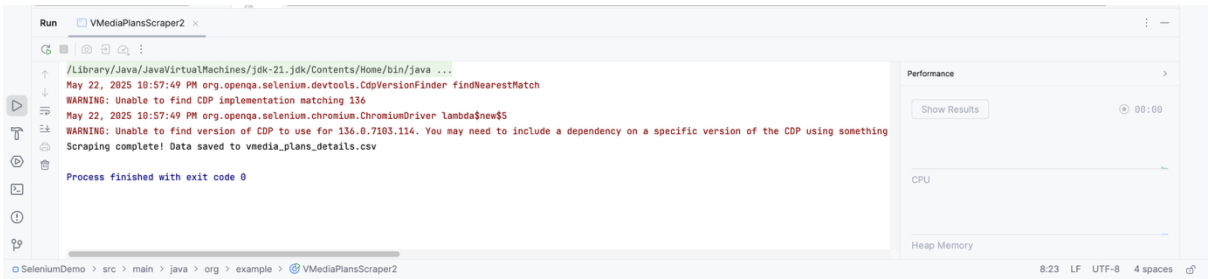
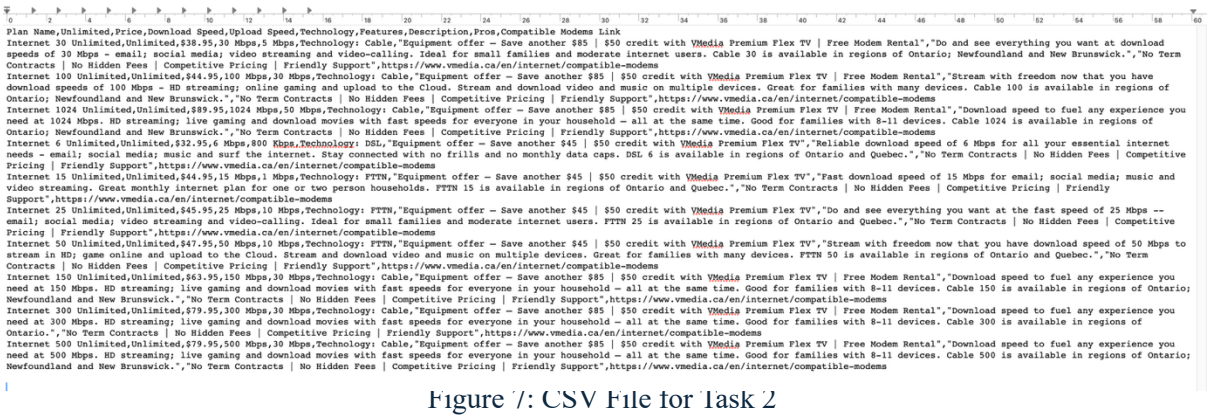


Figure 6: Console output of task 2



```
Plan Name,Unlimited,Price,Download Speed,Upload Speed,Technology,Features,Description,Pros,Compatible Modems Link
Internet 30 Unlimited,Unlimited,$38.95,30 Mbps,5 Mbps,Technology: Cable,"Equipment offer – Save another $85 | $50 credit with VMedia Premium Flex TV | Free Modem Rental","Do and see everything you want at download
speeds of 30 Mbps - email; social media; video streaming and video-calling. Ideal for small families and moderate internet users. Cable 30 is available in regions of Ontario; Newfoundland and New Brunswick.","No Term
Contracts | No Hidden Fees | Competitive Pricing | Friendly Support",https://www.vmedia.ca/en/internet/compatible-modems
Internet 100 Unlimited,Unlimited,$44.95,100 Mbps,30 Mbps,Technology: Cable,"Equipment offer – Save another $85 | $50 credit with VMedia Premium Flex TV | Free Modem Rental","Stream with freedom now that you have
download speeds of 100 Mbps - HD streaming; online gaming and upload to the Cloud. Stream and download video and music on multiple devices. Great for families with many devices. Cable 100 is available in regions of
Ontario; Newfoundland and New Brunswick.","No Term Contracts | No Hidden Fees | Competitive Pricing | Friendly Support",https://www.vmedia.ca/en/internet/compatible-modems
Internet 1024 Unlimited,Unlimited,$89.95,1024 Mbps,50 Mbps,Technology: Cable,"Equipment offer – Save another $85 | $50 credit with VMedia Premium Flex TV | Free Modem Rental","Download speed to fuel any experience you
need at 1024 Mbps. HD streaming; live gaming and download movies with fast speeds for everyone in your household – all at the same time. Good for families with 8-11 devices. Cable 1024 is available in regions of
Ontario; Newfoundland and New Brunswick.","No Term Contracts | No Hidden Fees | Competitive Pricing | Friendly Support",https://www.vmedia.ca/en/internet/compatible-modems
Internet 6 Unlimited,Unlimited,$32.95,6 Mbps,800 Kbps,Technology: DSL,"Equipment offer – Save another $45 | $50 credit with VMedia Premium Flex TV","Reliable download speed of 6 Mbps for all your essential internet
needs - email; social media; music and surf the internet. Stay connected with no frills and no monthly data caps. DSL 6 is available in regions of Ontario and Quebec.","No Term Contracts | No Hidden Fees | Competitive
Pricing | Friendly Support",https://www.vmedia.ca/en/internet/compatible-modems
Internet 15 Unlimited,Unlimited,$44.95,15 Mbps,1 Mbps,Technology: FTTN,"Equipment offer – Save another $45 | $50 credit with VMedia Premium Flex TV","Fast download speed of 15 Mbps for email; social media; music and
video streaming. Great monthly internet plan for one or two person households. FTTN 15 is available in regions of Ontario and Quebec.","No Term Contracts | No Hidden Fees | Competitive Pricing | Friendly
Support",https://www.vmedia.ca/en/internet/compatible-modems
Internet 25 Unlimited,Unlimited,$45.95,25 Mbps,10 Mbps,Technology: FTTN,"Equipment offer – Save another $45 | $50 credit with VMedia Premium Flex TV","Do and see everything you want at the fast speed of 25 Mbps --
email; social media; video streaming and video-calling. Ideal for small families and moderate internet users. FTTN 25 is available in regions of Ontario and Quebec.","No Term Contracts | No Hidden Fees | Competitive
Pricing | Friendly Support",https://www.vmedia.ca/en/internet/compatible-modems
Internet 50 Unlimited,Unlimited,$47.95,50 Mbps,10 Mbps,Technology: FTTN,"Equipment offer – Save another $45 | $50 credit with VMedia Premium Flex TV","Stream with freedom now that you have download speed of 50 Mbps to
stream in HD; game online and upload to the Cloud. Stream and download video and music on multiple devices. Great for families with many devices. FTTN 50 is available in regions of Ontario and Quebec.","No Term
Contracts | No Hidden Fees | Competitive Pricing | Friendly Support",https://www.vmedia.ca/en/internet/compatible-modems
Internet 150 Unlimited,Unlimited,$63.95,150 Mbps,30 Mbps,Technology: Cable,"Equipment offer – Save another $85 | $50 credit with VMedia Premium Flex TV | Free Modem Rental","Download speed to fuel any experience you
need at 150 Mbps. HD streaming; live gaming and download movies with fast speeds for everyone in your household – all at the same time. Good for families with 8-11 devices. Cable 150 is available in regions of Ontario;
Newfoundland and New Brunswick.","No Term Contracts | No Hidden Fees | Competitive Pricing | Friendly Support",https://www.vmedia.ca/en/internet/compatible-modems
Internet 300 Unlimited,Unlimited,$79.95,300 Mbps,30 Mbps,Technology: Cable,"Equipment offer – Save another $85 | $50 credit with VMedia Premium Flex TV | Free Modem Rental","Download speed to fuel any experience you
need at 300 Mbps. HD streaming; live gaming and download movies with fast speeds for everyone in your household – all at the same time. Good for families with 8-11 devices. Cable 300 is available in regions of
Ontario.","No Term Contracts | No Hidden Fees | Competitive Pricing | Friendly Support",https://www.vmedia.ca/en/internet/compatible-modems
Internet 500 Unlimited,Unlimited,$79.95,500 Mbps,30 Mbps,Technology: Cable,"Equipment offer – Save another $85 | $50 credit with VMedia Premium Flex TV | Free Modem Rental","Download speed to fuel any experience you
need at 500 Mbps. HD streaming; live gaming and download movies with fast speeds for everyone in your household – all at the same time. Good for families with 8-11 devices. Cable 500 is available in regions of Ontario;
Newfoundland and New Brunswick.","No Term Contracts | No Hidden Fees | Competitive Pricing | Friendly Support",https://www.vmedia.ca/en/internet/compatible-modems
```

Figure 7: CSV File for Task 2

TASK 3: ADVANCED SELENIUM COMMANDS

For Task 3, I demonstrated the use of the following advanced Selenium functionalities:

1. **Explicit Waits**:

   WebDriverWait and ExpectedConditions were used to **wait for dynamic elements** (e.g., plan cards, descriptions) to **fully load before interaction**, ensuring stability and reliability of the scraper.

2. **Handling Multiple Tabs (Pop-Up Simulation)**:

   The plan detail pages were **opened in new tabs** using JavascriptExecutor with window.open(). Then, the code **switched between tabs** using driver.getWindowHandles() and driver.switchTo().window(...), mimicking advanced user behavior like handling pop-up windows or new pages.

3. **Switching Contexts and Closing Tabs**:

   After extracting additional information (features, pros, modem links), the new tab was **closed** and the driver **returned to the original tab**, maintaining the session efficiently.

These techniques go beyond basic Selenium use and demonstrate proper application of **advanced browser control and synchronization** — fulfilling the requirements of **Task 3**.

LinkedIn Learning Certificate

As part of this assignment, I completed the assigned LinkedIn Learning course related to Selenium Web Scraping. The **certificate of completion** is attached with this report as required.

Conclusion

All three tasks were completed successfully. I extracted both summary and detailed data for internet plans using advanced Selenium features and Java. All output was validated and saved in CSV format. Screenshots were captured for verification.