# Web Scraping and Knowledge graph

## Example Knowledge graph created from a small amount of data web scraped:

# Example Main Prompt:

Take the following raw website-rendered text content and transform it into a format that is easily interpretable by a large language model (LLM). The output should avoid definitive or absolute statements. Instead, rephrase content with conditional or probabilistic language (e.g., "in many cases," "it is likely that," "if X occurs, then Y might happen").

Break the content into logical, semantically meaningful chunks. Each chunk should be clearly separated and accompanied by relevant metadata, such as section titles, tags, content type, and source URL (if available).

The final output should be structured in a way that is suitable for ingestion into a vector store—ideally formatted as JSON or another easily indexable schema for use in Retrieval-Augmented Generation (RAG) applications.

## Model Used for the following outputs:

ChatGPT as on 9th April 2025

### Example Output 1:

[

{

"section\_title": "Overview - Prepaid Phones",

"tags": ["phones", "prepaid", "Straight Talk"],

"content\_type": "landing\_page",

"source\_url": "https://www.straighttalk.com/all-phones",

"content": "This page appears to list various prepaid phone options provided by Straight Talk Wireless. It likely includes both basic phones and smartphones. The product offerings may vary by availability and current promotions."

},

{

"section\_title": "Promotional Offer - Free Motorola Edge",

"tags": ["promotion", "motorola", "phones"],

"content\_type": "promotion",

"source\_url": "https://www.straighttalk.com/all-phones",

"content": "New and existing customers might be eligible to receive a free Motorola Edge 2024 phone if they purchase a 3-month Extended Silver Plan or a higher-tier plan. It’s important to check the specific terms and conditions, as availability and eligibility requirements may apply."

},

{

"section\_title": "ACP and Lifeline Discounts",

"tags": ["ACP", "Lifeline", "discounts", "plans"],

"content\_type": "notification",

"source\_url": "https://www.straighttalk.com/all-phones",

"content": "If a user qualifies for government assistance programs like the Affordable Connectivity Program (ACP) or Lifeline, they might receive monthly discounts on wireless plans. These discounts may range from $10 to $110 depending on the program and whether the user is on Tribal Lands. Plan changes could be made monthly, offering flexibility in service selection. Taxes and fees are likely to be added during checkout."

},

{

"section\_title": "Discount Usage Limits",

"tags": ["ACP", "Lifeline", "limitations"],

"content\_type": "alert",

"source\_url": "https://www.straighttalk.com/all-phones",

"content": "There could be limitations on how many plans can be purchased in advance using ACP or Lifeline discounts. If the limit is exceeded, the user may be required to pay the full plan price. This likely ensures fair use of subsidized benefits."

},

{

"section\_title": "Phone Catalog & Filters",

"tags": ["catalog", "phones", "filters"],

"content\_type": "product\_listing",

"source\_url": "https://www.straighttalk.com/all-phones",

"content": "The catalog possibly includes up to 85 phones, featuring brands such as Apple, Samsung, Motorola, TCL, Nokia, and others. Users can likely filter phones by type (e.g., Apple, Android, Basic), connectivity (e.g., 5G-capable), price range, and deals (e.g., refurbished items or monthly payment plans). These filters aim to simplify the browsing experience based on user preferences."

},

{

"section\_title": "Financing Option - SmartPay",

"tags": ["financing", "SmartPay", "payment plan"],

"content\_type": "payment\_option",

"source\_url": "https://www.straighttalk.com/all-phones",

"content": "Users approved for SmartPay may have the opportunity to finance their phone purchases through a monthly payment plan. This option could be helpful for customers seeking flexible payment arrangements rather than paying the full price upfront."

},

{

"section\_title": "Existing Customer Eligibility Checks",

"tags": ["upgrade", "customer\_service", "eligibility"],

"content\_type": "user\_flow",

"source\_url": "https://www.straighttalk.com/all-phones",

"content": "Current Straight Talk customers may have the ability to check their eligibility for discounts and upgrades by entering their phone number. However, there are likely validation steps, and some numbers might not be eligible due to prior upgrades, brand mismatches, or lack of service availability in the entered area."

},

{

"section\_title": "Search and Navigation Interface",

"tags": ["UI", "navigation", "search"],

"content\_type": "user\_interface",

"source\_url": "https://www.straighttalk.com/all-phones",

"content": "The page seems to offer a search feature and categorized navigation including 'Service Plans', 'Phones & Devices', 'Deals & Bundles', and 'Refill'. These navigational aids are likely meant to streamline user access to relevant product or plan categories."

},

{

"section\_title": "Special Offers Eligibility",

"tags": ["offers", "discounts", "eligibility"],

"content\_type": "promotion",

"source\_url": "https://www.straighttalk.com/all-phones",

"content": "Users who qualify for specific programs might see tailored promotional offers. These may be based on their enrollment in ACP or Lifeline, account activity, or previous purchases. Specific offer availability could depend on a combination of factors such as plan selection and geographic region."

}

]

### Example Output 2:

[

{

"title": "Samsung Galaxy A16 5G",

"tags": ["phone", "Samsung", "5G", "prepaid", "promotion", "out-of-stock"],

"content\_type": "product\_listing",

"source\_url": "https://www.straighttalk.com/shop/all-phones",

"availability": "out\_of\_stock",

"description": "The Samsung Galaxy A16 5G might be available as a promotional offer with select plans, such as a Gold Unlimited Plan or higher. In some cases, this device has been offered for free when bundled with qualifying plans. The full retail price appears to be approximately $99.99. Pricing through financing options like Smartpay may vary depending on credit.",

"review\_summary": "This product currently appears to have no customer reviews. It is likely that further customer feedback could provide more insight into the device's performance and reliability."

},

{

"title": "moto g power 5G - 2024",

"tags": ["phone", "Motorola", "5G", "prepaid", "promotion", "out-of-stock"],

"content\_type": "product\_listing",

"source\_url": "https://www.straighttalk.com/shop/all-phones",

"availability": "out\_of\_stock",

"description": "The 2024 moto g power 5G may have been offered at a discounted price—possibly reduced from $149.99 to $99.99. Customers with excellent credit might be eligible for monthly payments through Smartpay over a 24-month term. Free availability might apply when bundled with higher-tier plans.",

"review\_summary": "There are currently no reviews for this model, suggesting limited customer feedback so far."

},

{

"title": "moto g play - 2024",

"tags": ["phone", "Motorola", "prepaid", "promotion", "budget", "out-of-stock"],

"content\_type": "product\_listing",

"source\_url": "https://www.straighttalk.com/shop/all-phones",

"availability": "out\_of\_stock",

"description": "This device may have been reduced in price from around $39.99 to $29.99, making it one of the more affordable models. Payment plans might be available depending on credit status. Promotional offers could apply in combination with select monthly plans.",

"review\_summary": "This product currently lacks customer reviews, which could indicate it's newly listed or hasn't been widely purchased yet."

},

{

"title": "moto g power - 2025",

"tags": ["phone", "Motorola", "2025", "prepaid", "promotion", "new-arrival", "out-of-stock"],

"content\_type": "product\_listing",

"source\_url": "https://www.straighttalk.com/shop/all-phones",

"availability": "out\_of\_stock",

"description": "As a newer release, the moto g power 2025 seems to have a standard retail price of $149.99. Monthly installment options may be offered through financing partners, potentially spread across 24 months. Promotional discounts might be available for qualifying customers.",

"review\_summary": "No customer feedback has been recorded as of now."

},

{

"title": "moto g 64GB - 2025",

"tags": ["phone", "Motorola", "64GB", "2025", "budget", "out-of-stock"],

"content\_type": "product\_listing",

"source\_url": "https://www.straighttalk.com/shop/all-phones",

"availability": "out\_of\_stock",

"description": "This model is likely intended for value-focused customers, priced around $39.99. It might be eligible for promotional credits or financing depending on the customer’s plan or credit profile.",

"review\_summary": "Customer review data is not currently available."

},

{

"title": "iPhone 16e 128GB",

"tags": ["phone", "Apple", "iPhone", "128GB", "premium", "out-of-stock"],

"content\_type": "product\_listing",

"source\_url": "https://www.straighttalk.com/shop/all-phones",

"availability": "out\_of\_stock",

"description": "The iPhone 16e 128GB model could be priced at approximately $599.99. Financing through Smartpay may be available for qualified customers over 24 months. It’s possible that promotional service credits may apply when bundled with eligible plans.",

"review\_summary": "There are no user reviews currently posted for this product."

},

{

"title": "Samsung Galaxy A15 5G 64GB",

"tags": ["phone", "Samsung", "5G", "64GB", "budget", "out-of-stock"],

"content\_type": "product\_listing",

"source\_url": "https://www.straighttalk.com/shop/all-phones",

"availability": "out\_of\_stock",

"description": "The Galaxy A15 5G 64GB might retail for $59.99. In some promotional scenarios, it may be offered at no cost with a qualifying plan. Financing options might be available for customers with qualifying credit scores.",

"review\_summary": "At the time of analysis, this model appears to lack customer reviews."

},

{

"title": "iPhone 12 64GB",

"tags": ["phone", "Apple", "iPhone", "64GB", "refurbished", "out-of-stock"],

"content\_type": "product\_listing",

"source\_url": "https://www.straighttalk.com/shop/all-phones",

"availability": "out\_of\_stock",

"description": "This iPhone 12 model is likely positioned in the mid-range category, with pricing potentially reduced from $249.99 to $199.99. Smartpay options might result in monthly payments as low as $8.33 for those with excellent credit. Promotional bundles could be available for a limited time.",

"review\_summary": "This phone has a 4.0-star average based on 55 reviews, indicating generally positive reception among users."

},

{

"title": "motorola razr - 2024",

"tags": ["phone", "Motorola", "foldable", "2024", "premium", "out-of-stock"],

"content\_type": "product\_listing",

"source\_url": "https://www.straighttalk.com/shop/all-phones",

"availability": "out\_of\_stock",

"description": "Details for this model are sparse, but as a recent release, it may be considered a high-end or premium offering. It’s possible that pricing and promotional structures are similar to other high-tier phones listed on the site.",

"review\_summary": "No reviews are currently listed for this device."

}

]

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