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# Watch Search Engine

## Web Mining Final Project

# Agenda



PROBLEM  
STATEMENT



DATA SOURCES



DATA SCRAPING



DATA CLEANING



INFORMATION  
RETRIEVAL



UI/UX



TESTING AND  
FINAL PRODUCT

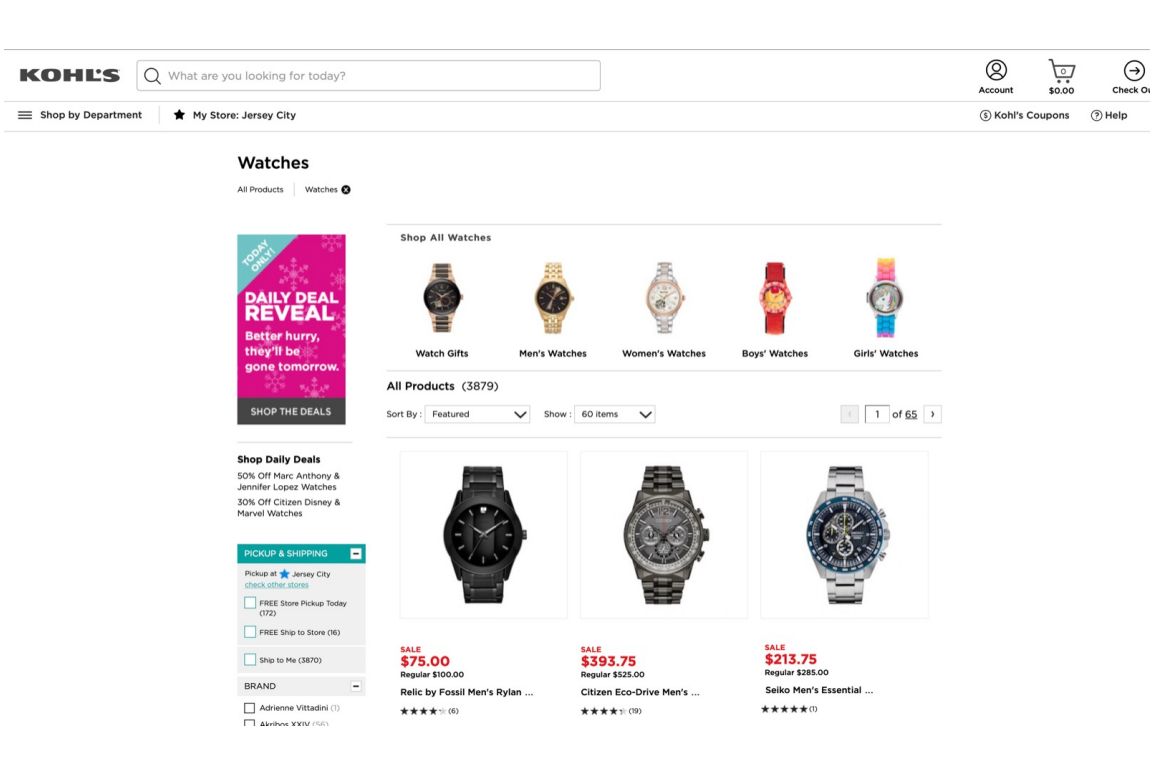
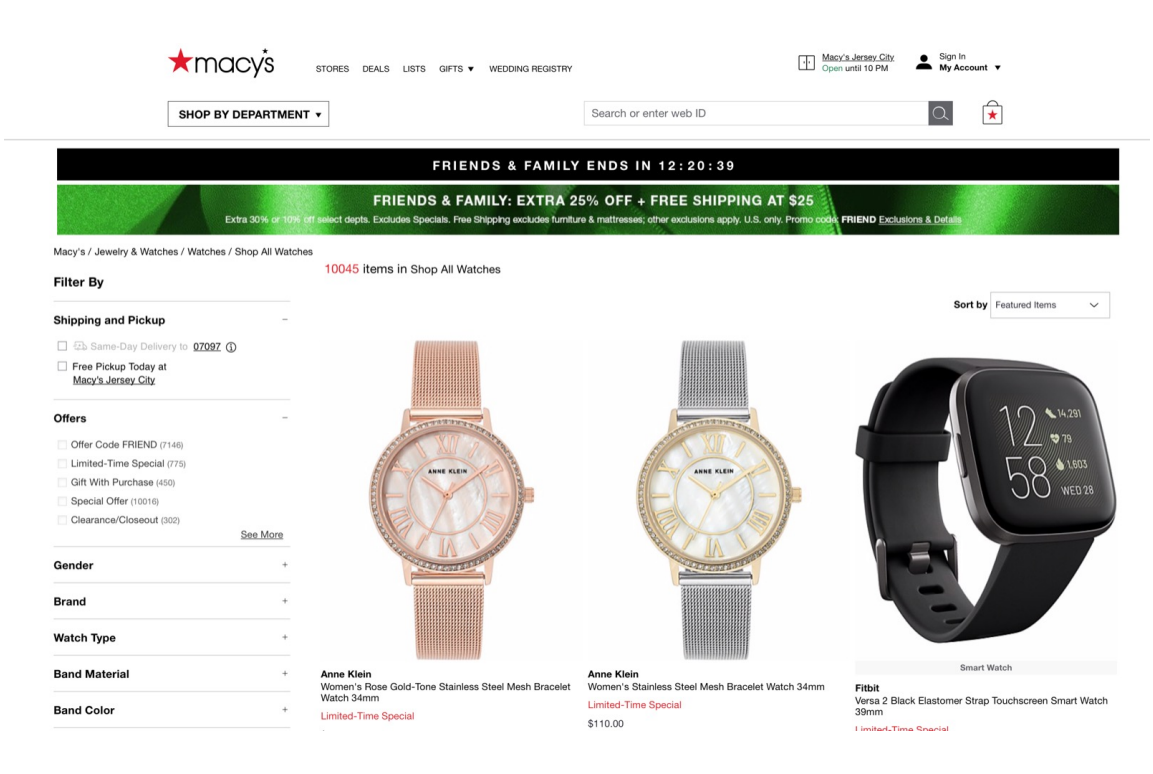


FUTURE SCOPE

# Problem Statement

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- To create a search engine for users who are looking for genuine original watches.
- Standard Google search for any watch returns a lot of results, many of them being fake at cheaper prices from untrusted websites.
- Our aim is to collect data from genuine websites and show search results which ensures that the products displayed are 100% genuine.



# Data Sources

“Shop all watches” section from macys.com and kohls.com

# Data Scraping

We scraped the data of all the watches from Macy's and Kohl's using Beautiful Soup and Selenium.

Link	name	brand	image	price
<a href="https://www.macys.com/shop/product/fitbit-versa-2-black-elastomer-strap-touchscreen-smart-watch-39mm?ID=10130328&amp;CategoryID=239616">https://www.macys.com/shop/product/fitbit-versa-2-black-elastomer-strap-touchscreen-smart-watch-39mm?ID=10130328&amp;CategoryID=239616</a>	Versa 2 Black Elastomer Strap Touchscreen Smart Watch 39mm	Fitbit	<a href="https://slimages.macysassets.com/is/image/MCY/product">https://slimages.macysassets.com/is/image/MCY/product</a>	\$199.95
<a href="https://www.macys.com/shop/product/g-shock-mens-digital-black-resin-strap-watch-50.8mm?ID=10210730&amp;CategoryID=239616">https://www.macys.com/shop/product/g-shock-mens-digital-black-resin-strap-watch-50.8mm?ID=10210730&amp;CategoryID=239616</a>	Men's Digital Black Resin Strap Watch 50.8mm	G-Shock	<a href="https://slimages.macysassets.com/is/image/MCY/product">https://slimages.macysassets.com/is/image/MCY/product</a>	\$140.00
<a href="https://www.macys.com/shop/product/fitbit-versa-lite-white-strap-smart-watch-39mm?ID=8484050&amp;CategoryID=239616">https://www.macys.com/shop/product/fitbit-versa-lite-white-strap-smart-watch-39mm?ID=8484050&amp;CategoryID=239616</a>	Versa Lite White Strap Smart Watch 39mm	Fitbit	<a href="https://slimages.macysassets.com/is/image/MCY/product">https://slimages.macysassets.com/is/image/MCY/product</a>	\$159.95
<a href="https://www.macys.com/shop/product/michael-kors-access-mkgo-black-silicone-strap-touchscreen-smart-watch-43mm-powered-by-apple-watch?ID=10150561&amp;CategoryID=239616">https://www.macys.com/shop/product/michael-kors-access-mkgo-black-silicone-strap-touchscreen-smart-watch-43mm-powered-by-apple-watch?ID=10150561&amp;CategoryID=239616</a>	Access MKGO Black Silicone Strap Touchscreen Smart Watch 43mm	Michael Kors	<a href="https://slimages.macysassets.com/is/image/MCY/product">https://slimages.macysassets.com/is/image/MCY/product</a>	\$295.00
<a href="https://www.macys.com/shop/product/fitbit-inspire-black-strap-activity-tracker-19.5mm?ID=8484031&amp;CategoryID=239616">https://www.macys.com/shop/product/fitbit-inspire-black-strap-activity-tracker-19.5mm?ID=8484031&amp;CategoryID=239616</a>	Inspire Black Strap Activity Tracker 19.5mm	Fitbit	<a href="https://slimages.macysassets.com/is/image/MCY/product">https://slimages.macysassets.com/is/image/MCY/product</a>	\$69.95
<a href="https://www.macys.com/shop/product/fossil-townsmen-collection-leather-strap-watches?ID=10150561&amp;CategoryID=239616">https://www.macys.com/shop/product/fossil-townsmen-collection-leather-strap-watches?ID=10150561&amp;CategoryID=239616</a>	Men's Townsman Brown Leather Strap Watch 44mm	Fossil	<a href="https://slimages.macysassets.com/is/image/MCY/product">https://slimages.macysassets.com/is/image/MCY/product</a>	\$159.00
<a href="https://www.macys.com/shop/product/kate-spade-new-york-womens-metro-quilted-black-leather-strap-watch-34mm?ID=6727820">https://www.macys.com/shop/product/kate-spade-new-york-womens-metro-quilted-black-leather-strap-watch-34mm?ID=6727820</a>	Women's Metro Quilted Black Leather Strap Watch 34mm	kate spade new york	<a href="https://slimages.macysassets.com/is/image/MCY/product">https://slimages.macysassets.com/is/image/MCY/product</a>	\$225.00
<a href="https://www.macys.com/shop/product/tommy-hilfiger-womens-red-silicone-strap-watch-35mm-created-for-macys?ID=8226642&amp;CategoryID=239616">https://www.macys.com/shop/product/tommy-hilfiger-womens-red-silicone-strap-watch-35mm-created-for-macys?ID=8226642&amp;CategoryID=239616</a>	Women's Red Silicone Strap Watch 35mm Created for Macy's	Tommy Hilfiger	<a href="https://slimages.macysassets.com/is/image/MCY/product">https://slimages.macysassets.com/is/image/MCY/product</a>	\$65.00
<a href="https://www.macys.com/shop/product/fitbit-unisex-ionic-blue-gray-elastomer-strap-smart-watch-35x32mm?ID=5130586&amp;CategoryID=239616">https://www.macys.com/shop/product/fitbit-unisex-ionic-blue-gray-elastomer-strap-smart-watch-35x32mm?ID=5130586&amp;CategoryID=239616</a>	Unisex Ionic Blue-Gray Elastomer Strap Smart Watch 35x32mm	Fitbit	<a href="https://slimages.macysassets.com/is/image/MCY/product">https://slimages.macysassets.com/is/image/MCY/product</a>	\$249.95
<a href="https://www.macys.com/shop/product/american-exchange-mens-diamond-accent-gold-tone-bracelet-watch-48mm?ID=10225379&amp;CategoryID=239616">https://www.macys.com/shop/product/american-exchange-mens-diamond-accent-gold-tone-bracelet-watch-48mm?ID=10225379&amp;CategoryID=239616</a>	Men's Diamond-Accent Gold-Tone Bracelet Watch 48mm	American Exchange	<a href="https://slimages.macysassets.com/is/image/MCY/product">https://slimages.macysassets.com/is/image/MCY/product</a>	\$75.00
<a href="https://www.macys.com/shop/product/fossil-womens-mini-carlie-stainless-steel-mesh-bracelet-watch-28mm?ID=6672115&amp;CategoryID=239616">https://www.macys.com/shop/product/fossil-womens-mini-carlie-stainless-steel-mesh-bracelet-watch-28mm?ID=6672115&amp;CategoryID=239616</a>	Women's Mini Carlie Stainless Steel Mesh Bracelet Watch 28mm	Fossil	<a href="https://slimages.macysassets.com/is/image/MCY/product">https://slimages.macysassets.com/is/image/MCY/product</a>	\$109.00

# DATA CLEANING

- Converted all the information to lower case, did Tokenization, and removed all special characters.

[10]:

	Link	name	brand	image	price
0	https://www.macys.com/shop/product/fitbit-vers...	Versa 2 Black Elastomer Strap Touchscreen Smar...	Fitbit	https://slimages.macysassets.com/is/image/MCY/...	\$199.95
1	https://www.macys.com/shop/product/g-shock-men...	Men's Digital Black Resin Strap Watch 50.8mm	G-Shock	https://slimages.macysassets.com/is/image/MCY/...	\$140.00
2	https://www.macys.com/shop/product/fitbit-vers...	Versa Lite White Strap Smart Watch 39mm	Fitbit	https://slimages.macysassets.com/is/image/MCY/...	\$159.95
3	https://www.macys.com/shop/product/michael-kor...	Access MKGO Black Silicone Strap Touchscreen S...	Michael Kors	https://slimages.macysassets.com/is/image/MCY/...	\$295.00
4	https://www.macys.com/shop/product/fitbit-insp...	Inspire Black Strap Activity Tracker 19.5mm	Fitbit	https://slimages.macysassets.com/is/image/MCY/...	\$69.95

## BEFORE

[11]:

	Link	name	brand	image	price
0	https://www.macys.com/shop/product/fitbit-vers...	versa black elastomer strap touchscreen smar...	fitbit	https://slimages.macysassets.com/is/image/MCY/...	\$199.95
1	https://www.macys.com/shop/product/g-shock-men...	men s digital black resin strap watch mm	g shock	https://slimages.macysassets.com/is/image/MCY/...	\$140.00
2	https://www.macys.com/shop/product/fitbit-vers...	versa lite white strap smart watch mm	fitbit	https://slimages.macysassets.com/is/image/MCY/...	\$159.95
3	https://www.macys.com/shop/product/michael-kor...	access mkgo black silicone strap touchscreen s...	michael kors	https://slimages.macysassets.com/is/image/MCY/...	\$295.00
4	https://www.macys.com/shop/product/fitbit-insp...	inspire black strap activity tracker mm	fitbit	https://slimages.macysassets.com/is/image/MCY/...	\$69.95

## AFTER

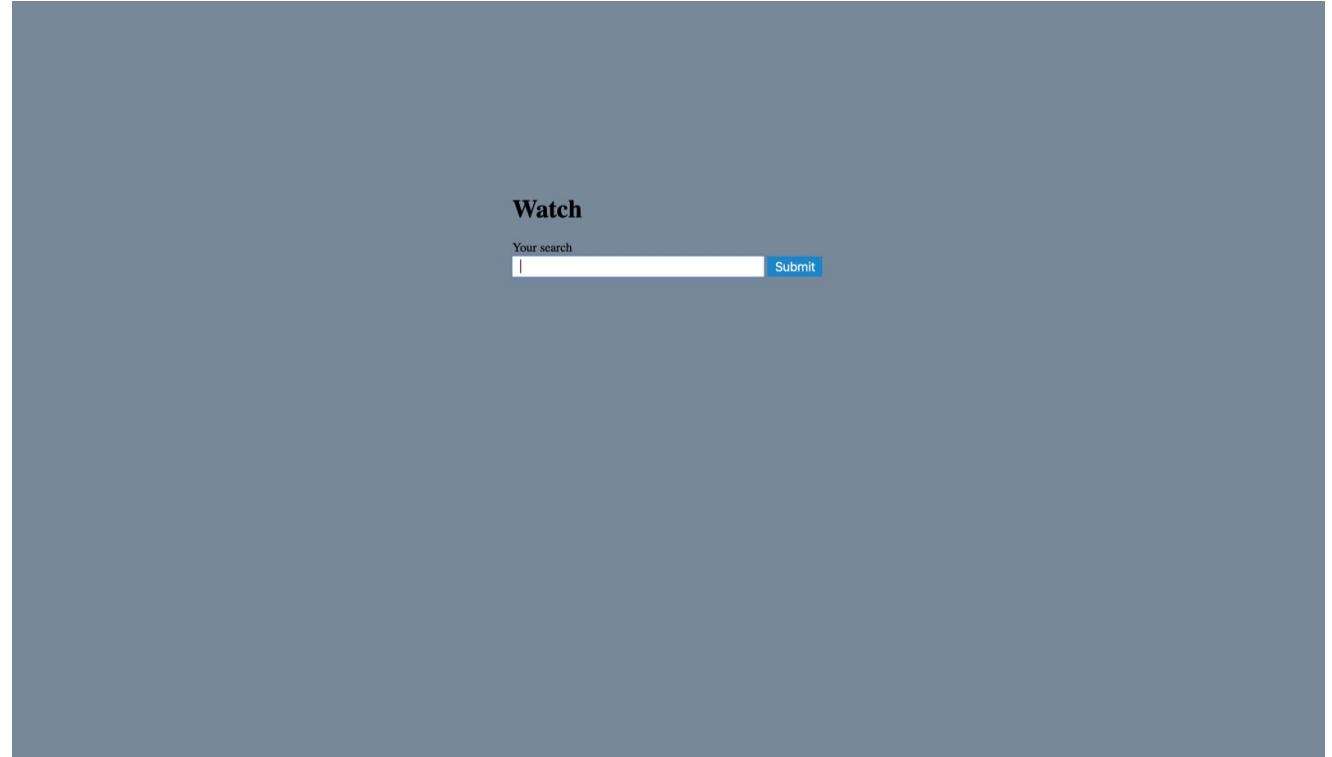
# Information Retrieval

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- Created an inverted index and found term frequencies and inverted document frequency.
- Ranked the links retrieved using matching score(TF-IDF).

# UI/UX

- Our Search engine has 2 pages.
- The first page is where the user searches about the watch he or she is looking for with keywords related to a brand and watch style.





# UI/UX

- The second page is where the search results are displayed. We created the UI using Flask and HTML.

## Your Results



men s watch b bulova

bulova

\$125.00

<https://www.kohls.com/product/prd-3206478/caravelle-mens-watch-43b154.jsp?prdPV=1083>



DEMO

Testing and Final Product

# Future Scope

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- We can extend this concept of search engine to various other products like Clothes, Bags, Jewelry.
- Also we can incorporate ranking based on prices along with TF-IDF scores.

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THANK YOU !!!