

Web Scraper with Firebase Integration & Reporting:

Sample Report:

1. Running Scraper to scrape products data (products with not null ids) in to a local file "latest_products.json":

```
(venv) PS E:\Atif\Candidate Assignment\newProject> scrapy crawl products -o latest_products.json
```

2. We have got the data in latest_products.json:

```
CANDIDATE ASSIGNMENT newProject > | latest_products.json > {} 23 > product_id
> newProject
  > _pycache_
  > spiders
  > _pycache_
  > _init_.py
  > products_spider.py
  > _init_.py
  > firebase_ops.py
  > items.py
  > middleware.py
  > pipelines.py
  > settings.py
  > venv
  > comparer.py
  > firebase_key.json
  > latest_products.json
  > scrapy.cfg

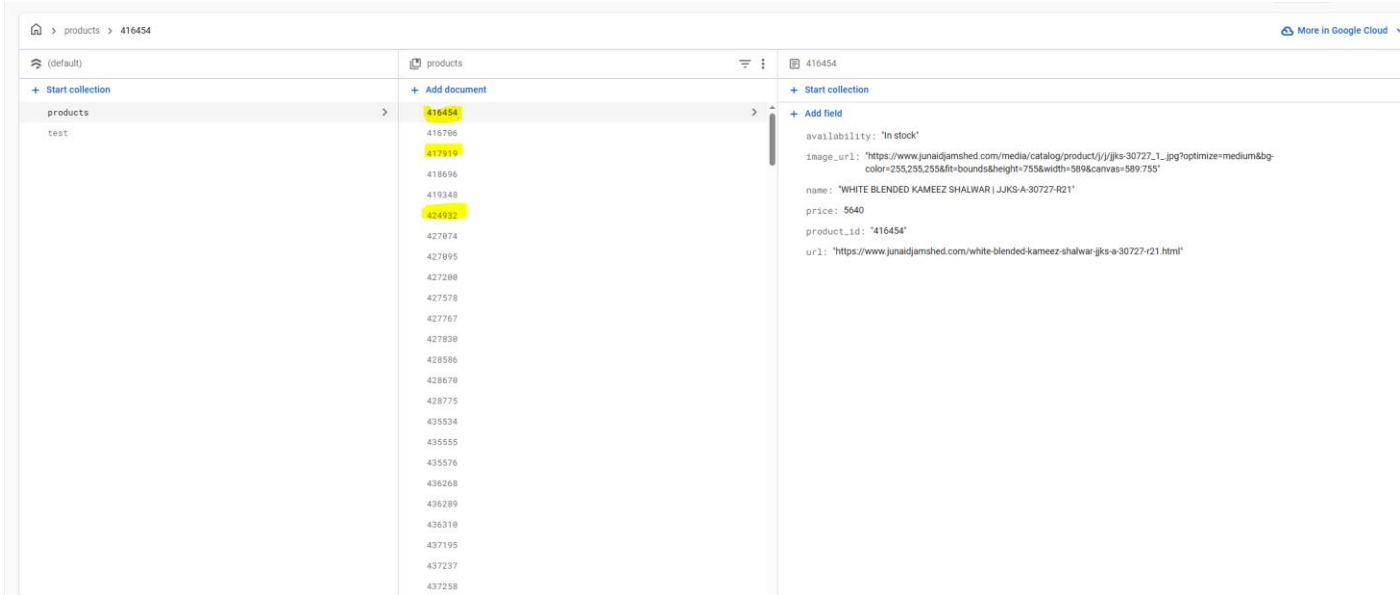
1  {
2  "product_id": "511948", "name": "TUNIS - NAVY BLENDED EXCLUSIVE KAMEEZ SHALWAR", "price": 13999.0, "availability": "In stock", "url": "https://www.junaidjanshed.com/tunis-navy-blended-exclusive-kameez-shalwar.html", "image_u
3  "product_id": "511862", "name": "GREY COTTON CASUAL KAMEEZ SHALWAR", "price": 8490.0, "availability": "In stock", "url": "https://www.junaidjanshed.com/grey-cotton-casual-kameez-shalwar-jjksa7463.html", "image_url": "https:
4  "product_id": "511884", "name": "TEAL BLUE BLENDED CASUAL KAMEEZ SHALWAR", "price": 8990.0, "availability": "In stock", "url": "https://www.junaidjanshed.com/teal-blue-blended-casual-kameez-shalwar-jjksa47459.html", "image_u
5  "product_id": "518052", "name": "NAVY BLUE BLENDED CASUAL KAMEEZ SHALWAR", "price": 6390.0, "availability": "In stock", "url": "https://www.junaidjanshed.com/navy-blue-blended-casual-kameez-shalwar-jjksa30779r39ap.html", "im
6  "product_id": "518778", "name": "BROWN BLENDED CASUAL KAMEEZ SHALWAR", "price": 5990.0, "availability": "In stock", "url": "https://www.junaidjanshed.com/brown-blended-casual-kameez-shalwar-jjksa47006r12ap.html", "image_url"
7  "product_id": "518694", "name": "BROWN BLENDED SEMI-FORMAL KAMEEZ SHALWAR", "price": 7490.0, "availability": "In stock", "url": "https://www.junaidjanshed.com/brown-blended-semi-formal-kameez-shalwar-jjksa33226r1.html", "ima
8  "product_id": "518610", "name": "BLACK BLENDED CASUAL KAMEEZ SHALWAR", "price": 6390.0, "availability": "In stock", "url": "https://www.junaidjanshed.com/black-blended-casual-kameez-shalwar-jjksa30729r43ap.html", "image_url"
9  "product_id": "518799", "name": "GREYISH GREEN BLENDED CASUAL KAMEEZ SHALWAR", "price": 8490.0, "availability": "In stock", "url": "https://www.junaidjanshed.com/greyish-green-blended-casual-kameez-shalwar-jjksa47444.html",
10 "product_id": "518631", "name": "BLACK BLENDED CASUAL KAMEEZ SHALWAR", "price": 5990.0, "availability": "In stock", "url": "https://www.junaidjanshed.com/black-blended-casual-kameez-shalwar-jjksa3078r43ap.html", "image_url"
11 "product_id": "518820", "name": "NAVY BLUE BLENDED CASUAL KAMEEZ SHALWAR", "price": 7990.0, "availability": "In stock", "url": "https://www.junaidjanshed.com/navy-blue-blended-casual-kameez-shalwar-jjksa47450.html", "image_u
12 "product_id": "518736", "name": "BROWN BLENDED CASUAL KAMEEZ SHALWAR", "price": 6390.0, "availability": "In stock", "url": "https://www.junaidjanshed.com/brown-blended-casual-kameez-shalwar-jjksa47005r12ap.html", "image_url"
13 "product_id": "518673", "name": "GREY BLENDED CASUAL KAMEEZ SHALWAR", "price": 5990.0, "availability": "In stock", "url": "https://www.junaidjanshed.com/grey-blended-casual-kameez-shalwar-jjksa30821r23ap.html", "image_url"
14 "product_id": "587220", "name": "BLUE BLENDED CASUAL KAMEEZ SHALWAR", "price": 8990.0, "availability": "In stock", "url": "https://www.junaidjanshed.com/blue-blended-casual-kameez-shalwar-jjksa33412.html", "image_url": "ht
15 "product_id": "587276", "name": "CREAM BLENDED CASUAL KAMEEZ SHALWAR", "price": 6990.0, "availability": "In stock", "url": "https://www.junaidjanshed.com/cream-blended-casual-kameez-shalwar-jjksa46735.html", "image_url": "ht
16 "product_id": "587255", "name": "FAMN BLENDED CASUAL KAMEEZ SHALWAR", "price": 7490.0, "availability": "In stock", "url": "https://www.junaidjanshed.com/famn-blended-casual-kameez-shalwar-jjksa46734.html", "image_url": "htp
17 "product_id": "587234", "name": "TEA PINK BLENDED CASUAL KAMEEZ SHALWAR", "price": 6990.0, "availability": "In stock", "url": "https://www.junaidjanshed.com/tea-pink-blended-casual-kameez-shalwar-jjksa46733.html", "image_url"
18 "product_id": "586919", "name": "DARK BROWN BLENDED SEMI-FORMAL KAMEEZ SHALWAR", "price": 8490.0, "availability": "In stock", "url": "https://www.junaidjanshed.com/dark-brown-blended-semi-formal-kameez-shalwar-jjksa50159.htm
19 "product_id": "586677", "name": "CREAM BLENDED SEMI-FORMAL KAMEEZ SHALWAR", "price": 8490.0, "availability": "In stock", "url": "https://www.junaidjanshed.com/cream-blended-semi-formal-kameez-shalwar-jjksa50154.html", "image
20 "product_id": "586961", "name": "OFF WHITE AYUDIA FORMAL KAMEEZ SHALWAR", "price": 7990.0, "availability": "In stock", "url": "https://www.junaidjanshed.com/off-white-ayudia-formal-kameez-shalwar-jjksa50188.html", "image_ur
21 "product_id": "586850", "name": "NAVY BLUE BLENDED FORMAL KAMEEZ SHALWAR", "price": 8490.0, "availability": "In stock", "url": "https://www.junaidjanshed.com/navy-blue-blended-formal-kameez-shalwar-jjksa50079.html", "image_u
22 "product_id": "586640", "name": "GREY BLENDED SEMI-FORMAL KAMEEZ SHALWAR", "price": 8490.0, "availability": "In stock", "url": "https://www.junaidjanshed.com/grey-blended-semi-formal-kameez-shalwar-jjksa50161.html", "image_u
23 "product_id": "586898", "name": "NAVY BLUE BLENDED SEMI-FORMAL KAMEEZ SHALWAR", "price": 8990.0, "availability": "In stock", "url": "https://www.junaidjanshed.com/navy-blue-blended-semi-formal-kameez-shalwar-jjksa50157.html"
24 "product_id": "586667", "name": "BROWN BLENDED CASUAL KAMEEZ SHALWAR", "price": 8490.0, "availability": "In stock", "url": "https://www.junaidjanshed.com/brown-blended-casual-kameez-shalwar-jjksa47465.html", "image_url": "ht
25 "product_id": "586562", "name": "DARK BROWN BLENDED CASUAL KAMEEZ SHALWAR", "price": 8990.0, "availability": "In stock", "url": "https://www.junaidjanshed.com/dark-brown-blended-casual-kameez-shalwar-jjksa47458.html", "image
26 "product_id": "586625", "name": "NAVY BLUE BLENDED CASUAL KAMEEZ SHALWAR", "price": 8990.0, "availability": "In stock", "url": "https://www.junaidjanshed.com/navy-blue-blended-casual-kameez-shalwar-jjksa47462.html", "image_u
27 "product_id": "586541", "name": "BROWN BLENDED CASUAL KAMEEZ SHALWAR", "price": 8990.0, "availability": "In stock", "url": "https://www.junaidjanshed.com/brown-blended-casual-kameez-shalwar-jjksa47457.html", "image_url": "ht
28 "product_id": "586604", "name": "WHITE BLENDED CASUAL KAMEEZ SHALWAR", "price": 8490.0, "availability": "In stock", "url": "https://www.junaidjanshed.com/white-blended-casual-kameez-shalwar-jjksa47461.html", "image_url": "ht
29 "product_id": "586520", "name": "BEIGE BLENDED CASUAL KAMEEZ SHALWAR", "price": 8490.0, "availability": "In stock", "url": "https://www.junaidjanshed.com/beige-blended-casual-kameez-shalwar-jjksa47456.html", "image_url": "ht
30 "product_id": "586772", "name": "OFF WHITE AYUDIA FORMAL KAMEEZ SHALWAR", "price": 7990.0, "availability": "In stock", "url": "https://www.junaidjanshed.com/off-white-ayudia-formal-kameez-shalwar-jjksa50071.html", "image_ur
31 "product_id": "586921", "name": "WHITE BLENDED CASUAL KAMEEZ SHALWAR", "price": 8490.0, "availability": "In stock", "url": "https://www.junaidjanshed.com/white-blended-casual-kameez-shalwar-jjksa47469.html", "image_url": "ht
32 "product_id": "586646", "name": "BROWN COTTON CASUAL KAMEEZ SHALWAR", "price": 8490.0, "availability": "In stock", "url": "https://www.junaidjanshed.com/brown-cotton-casual-kameez-shalwar-jjksa47464.html", "image_url": "htp
33 "product_id": "586688", "name": "WHITE BLENDED CASUAL KAMEEZ SHALWAR", "price": 8490.0, "availability": "In stock", "url": "https://www.junaidjanshed.com/white-blended-casual-kameez-shalwar-jjksa47466.html", "image_url": "ht
34 "product_id": "586730", "name": "DUL PURPLE BLENDED CASUAL KAMEEZ SHALWAR", "price": 7990.0, "availability": "In stock", "url": "https://www.junaidjanshed.com/dull-purple-blended-casual-kameez-shalwar-jjksa47490.html", "imag
35 "product_id": "586583", "name": "LILAC BLENDED CASUAL KAMEEZ SHALWAR", "price": 8490.0, "availability": "In stock", "url": "https://www.junaidjanshed.com/lilac-blended-casual-kameez-shalwar-jjksa47460.html", "image_url": "ht
36 "product_id": "586799", "name": "PEACH BLENDED CASUAL KAMEEZ SHALWAR", "price": 7990.0, "availability": "In stock", "url": "https://www.junaidjanshed.com/peach-blended-casual-kameez-shalwar-jjksa47489.html", "image_url": "ht
37 "product_id": "586814", "name": "DARK GREY BLENDED FORMAL KAMEEZ SHALWAR", "price": 8490.0, "availability": "In stock", "url": "https://www.junaidjanshed.com/dark-grey-blended-formal-kameez-shalwar-jjksa50076.html", "image_u
38 "product_id": "586352", "name": "WHITE AYUDIA FORMAL KAMEEZ SHALWAR", "price": 7990.0, "availability": "In stock", "url": "https://www.junaidjanshed.com/white-ayudia-formal-kameez-shalwar-jjksa47438.html", "image_url": "htp
39 "product_id": "586499", "name": "OFF WHITE AYUDIA FORMAL KAMEEZ SHALWAR", "price": 7990.0, "availability": "In stock", "url": "https://www.junaidjanshed.com/off-white-ayudia-formal-kameez-shalwar-jjksa47443.html", "image_ur
40 "product_id": "586499", "name": "DARK BROWN BLENDED CASUAL KAMEEZ SHALWAR", "price": 8990.0, "availability": "In stock", "url": "https://www.junaidjanshed.com/dark-brown-blended-casual-kameez-shalwar-jjksa47454.html", "image
41 "product_id": "586394", "name": "BLACK BLENDED CASUAL KAMEEZ SHALWAR", "price": 8490.0, "availability": "In stock", "url": "https://www.junaidjanshed.com/black-blended-casual-kameez-shalwar-jjksa47445.html", "image_url": "ht
42 "product_id": "586310", "name": "PEACH BLENDED SEMI-FORMAL KAMEEZ SHALWAR", "price": 7490.0, "availability": "In stock", "url": "https://www.junaidjanshed.com/peach-blended-semi-formal-kameez-shalwar-jjksa46728.html", "image
43 "product_id": "586289", "name": "MAUVE BLENDED SEMI-FORMAL KAMEEZ SHALWAR", "price": 8490.0, "availability": "In stock", "url": "https://www.junaidjanshed.com/mauve-blended-semi-formal-kameez-shalwar-jjksa46727.html", "image
44 "product_id": "586478", "name": "FAMN COTTON CASUAL KAMEEZ SHALWAR", "price": 8990.0, "availability": "In stock", "url": "https://www.junaidjanshed.com/famn-cotton-casual-kameez-shalwar-jjksa47452.html", "image_url": "https:
45 "product_id": "586436", "name": "BLACK BLENDED CASUAL KAMEEZ SHALWAR", "price": 7990.0, "availability": "In stock", "url": "https://www.junaidjanshed.com/black-blended-casual-kameez-shalwar-jjksa47448.html", "image_url": "https:

PROBLEMS OUTPUT DEBUG CONSOLE PORTS NUGET POLYGLOT NOTEBOOK TERMINAL
'responses per minute': 120.0,
'scheduler/dequeued': 10,
'scheduler/dequeued/memory': 10,
'scheduler/enqueued': 10,
'scheduler/enqueued/memory': 10,
'start time': datetime.datetime(2025, 6, 1, 23, 50, 40, 404075, tzinfo=datetime.timezone.utc))
2025-06-02 04:50:46 [scrapy.core.engine] INFO: Spider closed (finished)
TIMELINE
@ scrapy PS E:\Atif\Candidate Assignment\newProject>
```

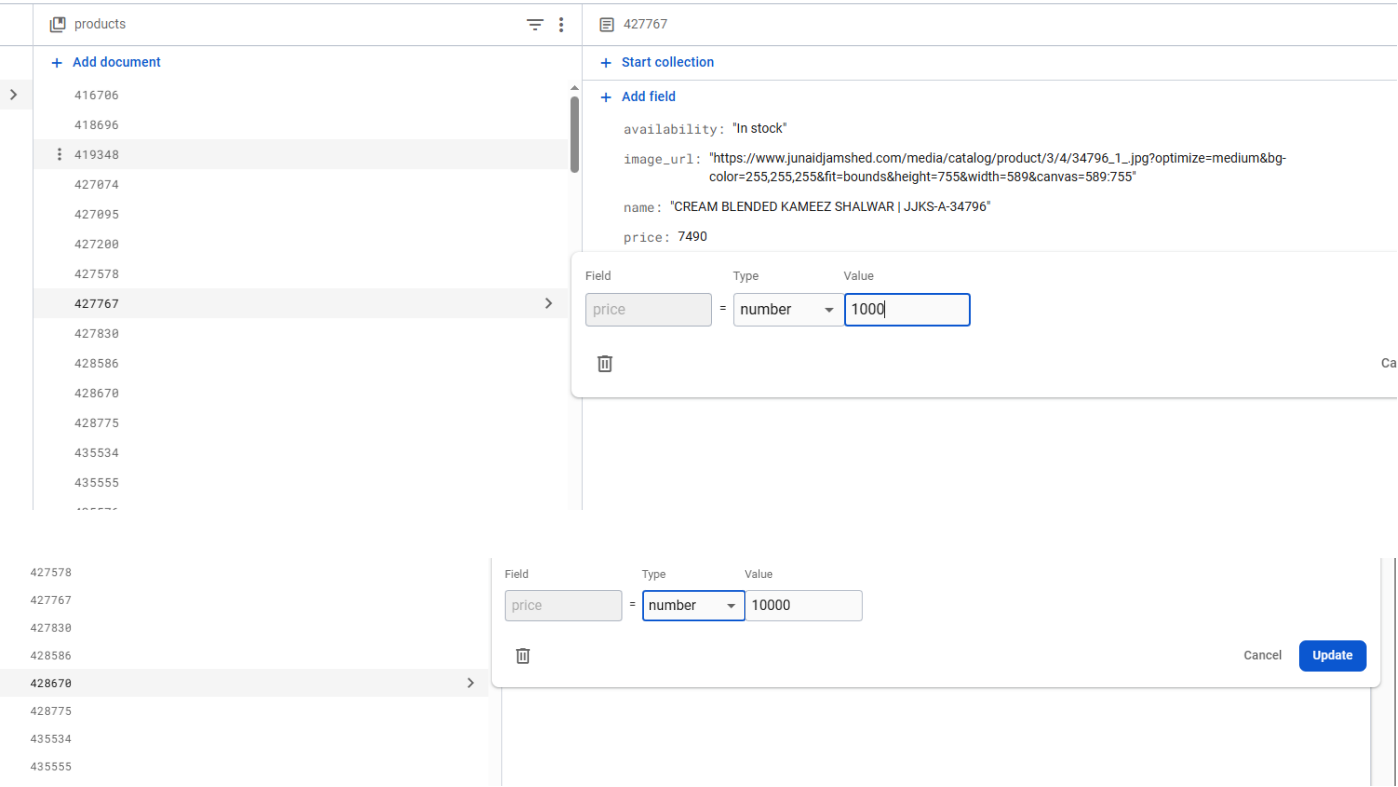
3. Now running comparer.py to compare old and new data (won't happen on first iteration as there is no data in firebase initially to avoid updating data in database each time scraper runs, by not doing so, the data would be same in database and locally saved new data), and then upload/update the data in firebase database:

```
'start_time': datetime.datetime(2025, 6, 1, 23, 50, 40, 404075, tzinfo=datetime.timezone.utc))
2025-06-02 04:50:46 [scrapy.core.engine] INFO: Spider closed (finished)
(venv) PS E:\Atif\Candidate Assignment\newProject> python comparer.py
```

4. Now deleting these products from firebase:



Changing product prices:



5. Re-running comparer.py:

Output Report:

```
newProject > report.txt

1
2 J. Product Comparison Report
3 =====
4
5 Products scraped: 331
6 New products: 3
7   → Product IDs: ['416454', '417919', '424932']
8
9 Price increased: 1
10  → Product IDs: ['427767']
11
12 Price decreased: 1
13  → Product IDs: ['428670']
14
15 Out of stock: 0
16  → Product IDs: []
17
```