

Issue #1

```
jupyter Issue #1 Last Checkpoint: a few seconds ago (jupyterweb) Logout
File Edit View Insert Cell Kernel Windows Help
In [1]: import requests
import json

#deals
url = "https://www.cheapshark.com/api/1.0/deals"

params = {
    "storeId": "1",
    "upperPrice": "15",
    "sortBy": "Savings",
    "pageSize": 10
}

response = requests.get(url, params=params)

deals = response.json()

for deal in deals:
    print(f"Title: {deal['title']}")
    print(f"Normal Price: ${deal['normalPrice']}")
    print(f"Sale Price: ${deal['salePrice']}")
    print(f"Savings: {deal['savings']}%")
    print(f"Steam Rating: {deal.get('steamRatingPercent', 'N/A')}")
    print(f"Deal Link: https://www.cheapshark.com/redirect?dealID={deal['dealID']}")
    print("-" * 40)

Title: LivingBattle
Normal Price: $15.99
Sale Price: $8.79
Savings: 55.859412%
Steam Rating: 0
Deal Link: https://www.cheapshark.com/redirect?dealID=8uts6vxn/sD891ch086rhv12Nq1nxgF6TAUBhAqJGg3D
-----
Title: Extreme Overtake
Normal Price: $15.99
Sale Price: $8.79
Savings: 55.859412%
Steam Rating: 0
Deal Link: https://www.cheapshark.com/redirect?dealID=Lzd5vP7juFDuGzYL68J6dVipQWyonX8rSLVb1386Yn3D
-----
Title: Seithy
Normal Price: $19.99
Sale Price: $8.99
Savings: 55.847524%
Steam Rating: 78
Deal Link: https://www.cheapshark.com/redirect?dealID=yK2FDj8H8KsP83Y0U1785TeCqJgfc28Ccb38ANQc3GJEA3D
-----
Title: Everspace
Normal Price: $19.99
Sale Price: $8.99
Savings: 55.847524%
Steam Rating: 77
Deal Link: https://www.cheapshark.com/redirect?dealID=cnUd5A2FYHfckqj8G8qIpbeyFSYrnxmf0ctbC36ySgn3D
-----
Title: The Inner World - The Last Wind Monk
Normal Price: $19.99
Sale Price: $8.99
Savings: 55.847524%
Steam Rating: 88
Deal Link: https://www.cheapshark.com/redirect?dealID=We5q17q3nJdGKq5uP1AymtW8KsN5u0Q3640Ph10P3D
-----
Title: Helheim Haxxie
Normal Price: $19.99
Sale Price: $8.99
Savings: 55.847524%
Steam Rating: 90
Deal Link: https://www.cheapshark.com/redirect?dealID=0zB9s7#4CgK2F4nfbqvTJgu0s2F1cxwF4u7N5164W6IA3D
-----
Title: Lania Island
Normal Price: $19.99
Sale Price: $8.99
Savings: 55.847524%
Steam Rating: 0
Deal Link: https://www.cheapshark.com/redirect?dealID=4ZBILxal6yOMVzT7Hk2b4bqrN8W8UgrqLtuahwn2FhXN3D
-----
Title: Biker Garage: Mechanic Simulator
Normal Price: $24.99
Sale Price: $1.24
Savings: 95.838815%
Steam Rating: 68
Deal Link: https://www.cheapshark.com/redirect?dealID=rd1prM5dy1q9WQ3CfPqj85fFc5dG14235kch800b7wA2TFN3D
-----
Title: Overratch: Project Eden
Normal Price: $24.99
Sale Price: $1.24
Savings: 95.838815%
Steam Rating: 48
Deal Link: https://www.cheapshark.com/redirect?dealID=Fv9Jp20F8nIlotwsvk6Q0NfM10vB2acxShESK18P4h3D
-----
Title: Survive in Space
Normal Price: $29.99
Sale Price: $1.49
Savings: 95.855177%
Steam Rating: 70
Deal Link: https://www.cheapshark.com/redirect?dealID=9Z18ByCH10FlbKjChayPhH8GQ2Erjv88x1MPKqjMn3D
```

```

In [12]: import requests
import json

#Disney
url = "https://api.disneyapi.dev/character"

response = requests.get(url)
data = response.json()

for i, character in enumerate(data["data"]):
    if i >= 10:
        break

    name = character.get("name")
    films = character.get("films")
    tv = character.get("tvShows")
    games = character.get("videoGames")
    url_link = character.get("sourceUrl")

    print(f"Name: {name}")
    print(f"Films: {' '.join(films) if films else 'None'}")
    print(f"TV Shows: {' '.join(tv) if tv else 'None'}")
    print(f"Games: {' '.join(games) if games else 'None'}")
    print(f"Wiki: {url_link}")
    print("-" * 40)

Name: Achilles
Films: Hercules (film)
TV Shows: Hercules (TV series)
Games: Kingdom Hearts III
Wiki: https://disney.fandom.com/wiki/Achilles_(Hercules)
-----
Name: Abigail the Cow
Films: The Fox and the Hound, The Fox and the Hound 2
TV Shows: None
Games: None
Wiki: https://disney.fandom.com/wiki/Abigail_the_Cow
-----
Name: Abdullah
Films: Dhoolah
TV Shows: None
Games: None
Wiki: https://disney.fandom.com/wiki/Abdullah
-----
Name: Admiral Boon and Mr. Binnacle
Films: Mary Poppins (film), Mary Poppins Returns
TV Shows: None
Games: None
Wiki: https://disney.fandom.com/wiki/Admiral_Boon_and_Mr._Binnacle
-----
Name: .Giffany
Films: None
TV Shows: Gravity Falls
Games: None
Wiki: https://disney.fandom.com/wiki/.Giffany
-----
Name: 98's Adventure Bear
Films: None
TV Shows: Pickle and Peanut
Games: None
Wiki: https://disney.fandom.com/wiki/98%27s_Adventure_Bear_(character)
-----
Name: Candace Adams
Films: None
TV Shows: K.C. Undercover
Games: None
Wiki: https://disney.fandom.com/wiki/Candace_Adams
-----
Name: Ahadi
Films: The Lion King, The Lion King (2019 film)
TV Shows: None
Games: None
Wiki: https://disney.fandom.com/wiki/Ahadi
-----
Name: Al Muddy Sultan
Films: None
TV Shows: Aladdin (TV series)
Games: None
Wiki: https://disney.fandom.com/wiki/Al_Muddy_Sultan
-----
Name: Trudina Allen
Films: None
TV Shows: Chip 'n Dale Rescue Rangers
Games: None
Wiki: https://disney.fandom.com/wiki/Trudina_Allen

```

```

In [36]: import requests
import json

dCards
url = "https://api.magicthegathering.io/v1/cards"

params = {
    'pageSize': 10
}

response = requests.get(url, params=params)

print("Status code:", response.status_code)
print("Raw response preview:")
print(response.text[:1000])

try:
    data = response.json()
    if "cards" in data:
        for card in data["cards"]:
            print(f"Name: {card.get('name')}")
            print(f"Type: {card.get('type')}")
            print(f"Colors: {card.get('colors')}")
            print(f"~" * 30)
        else:
            print("Key 'cards' not found in the response.")
except json.JSONDecodeError:
    print("Failed to decode JSON. Here's the raw content:")
    print(response.text)

Status code: 200
Raw response preview:
{"cards":[{"name":"Ancestor's Chosen","manaCost":{"c":"W","H":"W"},"cmc":17.0,"colors":["W"],"colorIdentity":["W"],"types":["Creature"],"subtypes":["Human","Cleric"],"rarity":"Uncommon","set":"10E","setNumber":10,"text":["First strike (This creature deals combat damage before creatures without first strike).","When Ancestor's Chosen enters the battlefield, you gain 1 life for each card in your graveyard."],"artist":"Pet e Venters","number":10,"power":4,"toughness":4,"layout":"normal","multiverseid":105586,"imageUrl":"https://go.therr.vizards.com/Handlers/Image.ashx?multiverseid=105586&type=card","variations":["b7c13934-b4bf-56fc-ae73-558e948bd42"],"foreignNames":[{"name":"Ausgewählter der Ahnfrau","text":"Erstschlag (Diese Kreatur fñgt Kampfschaden vor Kreaturen ohne Erstschlag zu.)","Wenn der Ausgewählte der Ahnfrau ins Spiel kommt, erhältst du 1 Lebenspunkt für jed e Karte in deinem Friedhof dazu."],"type":"Kreatur – Mensch, Kleriker"},"flavor":"","flavorText":"","name":"Ancestor's Chosen","type":"Creature – Human Cleric","colors":["W"]}], [{"name":"Ancestor's Chosen","type":"Creature – Human Cleric","colors":["W"]}], [{"name":"Angel of Mercy","type":"Creature – Angel","colors":["W"]}], [{"name":"Angel of Mercy","type":"Creature – Angel","colors":["W"]}], [{"name":"Angelic Blessing","type":"Sorcery","colors":["W"]}], [{"name":"Angelic Blessing","type":"Sorcery","colors":["W"]}], [{"name":"Angelic Chorus","type":"Enchantment","colors":["W"]}], [{"name":"Angelic Wall","type":"Creature – Wall","colors":["W"]}], [{"name":"Angelic Wall","type":"Creature – Wall","colors":["W"]}], [{"name":"Aure of Silence","type":"Enchantment","colors":["W"]}]]

```

Issue #2

```

1 • CREATE DATABASE my_project_db;
2 • USE my_project_db;
3
4 #Game Deals
5 • CREATE TABLE game_deals (
6   title VARCHAR(100),
7   normal_price DECIMAL(5,2),
8   sale_price DECIMAL(5,2),
9   savings DECIMAL(5,2),
10  steam_rating VARCHAR(10),
11  store_id VARCHAR(10),
12  deal_url TEXT
13 );
14
15 #MTG
16 • CREATE TABLE mtg_cards (
17   name VARCHAR(100),
18   mana_cost VARCHAR(20),
19   cmc INT,
20   type VARCHAR(100),
21   colors VARCHAR(50),
22   power VARCHAR(10),
23   toughness VARCHAR(10),
24   rarity VARCHAR(20),
25   set_name VARCHAR(50),
26   image_url TEXT
27 );
28
29 #Disney
30 • CREATE TABLE disney_characters (
31   name VARCHAR(100),
32   films TEXT,
33   tv_shows TEXT,
34   video_games TEXT,
35   source_url TEXT,
36   image_url TEXT

```

```

37 );
38
39 #1. Top 5 best-value game deals based on savings and Steam rating
40 SELECT
41   title,
42   normal_price,
43   sale_price,
44   savings,
45   steam_rating,
46   ROUND((savings * IFNULL(steam_rating, 50)) / 100, 2) AS value_score,
47   deal_url
48 FROM game_deals
49 WHERE
50   savings IS NOT NULL
51   AND steam_rating IS NOT NULL
52 ORDER BY value_score DESC
53 LIMIT 5;
54
55 #2. Counting how many MTG cards exist for each rarity
56 SELECT
57   rarity,
58   COUNT(*) AS count
59 FROM mtg_cards
60 GROUP BY rarity
61 ORDER BY count DESC;
62
63 #3. Disney characters who appear in both TV shows and video games
64 SELECT
65   name
66 FROM disney_characters
67 WHERE
68   tv_shows IS NOT NULL AND tv_shows != ''
69   AND video_games IS NOT NULL AND video_games != '';
70
71 #4. Average power and toughness for MTG cards (numeric only)
72 SELECT
73   AVG(CAST(power AS UNSIGNED)) AS avg_power,
74   AVG(CAST(toughness AS UNSIGNED)) AS avg_toughness
75 FROM mtg_cards
76 WHERE
77   power REGEXP '^[0-9]+$'
78   AND toughness REGEXP '^[0-9]+$';
79
80 #5. How many game deals each store has
81 SELECT
82   store_id,
83   COUNT(*) AS total_deals
84 FROM game_deals
85 GROUP BY store_id
86 ORDER BY total_deals DESC;

```

Issue 3: Data Export for BigQuery

```
In [2]: import requests
import csv

#game_deals
games_url = "https://www.cheapshark.com/api/1.0/deals"
games_params = {"storeID": "1", "upperPrice": "15", "pageSize": 20}
games_data = requests.get(games_url, params=games_params).json()

with open("game_deals.csv", "w", newline='') as f:
    writer = csv.writer(f)
    writer.writerow(["title", "normal_price", "sale_price", "savings", "steam_rating", "store_id", "deal_url"])
    for deal in games_data:
        writer.writerow([
            deal.get("title"),
            deal.get("normalPrice"),
            deal.get("salePrice"),
            deal.get("savings"),
            deal.get("steamRatingPercent"),
            deal.get("storeID"),
            f"https://www.cheapshark.com/redirect?dealID={deal.get('dealID')}"
        ])
    )
```

```
In [3]: #cards
mtg_url = "https://api.magicthegathering.io/v1/cards"
mtg_params = {"pageSize": 20}
mtg_data = requests.get(mtg_url, params=mtg_params).json()["cards"]

with open("mtg_cards.csv", "w", newline='') as f:
    writer = csv.writer(f)
    writer.writerow(["name", "mana_cost", "cmc", "type", "colors", "power", "toughness", "rarity", "set_name", "image_url"])
    for card in mtg_data:
        writer.writerow([
            card.get("name"),
            card.get("manaCost"),
            card.get("cmc"),
            card.get("type"),
            ", ".join(card.get("colors", [])),
            card.get("power"),
            card.get("toughness"),
            card.get("rarity"),
            card.get("setName"),
            card.get("imageUrl")
        ])
    )
```

```
In [4]: #disney
disney_url = "https://api.disneyapi.dev/character"
disney_data = requests.get(disney_url).json()["data"]

with open("disney_characters.csv", "w", newline='') as f:
    writer = csv.writer(f)
    writer.writerow(["name", "films", "tv_shows", "video_games", "source_url", "image_url"])
    for character in disney_data[:20]:
        writer.writerow([
            character.get("name"),
            ", ".join(character.get("films", [])),
            ", ".join(character.get("tvShows", [])),
            ", ".join(character.get("videoGames", [])),
            character.get("sourceUrl"),
            character.get("imageUrl")
        ])
    )
```

```
File Edit View Language current mode

1 name,films,tv_shows,video_games,source_url,image_url
2 Achilles,Hercules (film),Hercules (TV series),Kingdom Hearts
  III,https://disney.fandom.com/wiki/Achilles_(Hercules),https://static.wikia.nocookie.net/disney/images/d/d3/Vlcsnap-2015-05-06-
  23h04m15s601.png
3 Abigail the Cow,"The Fox and the Hound, The Fox and the Hound
  2",,https://disney.fandom.com/wiki/Abigail_the_Cow,https://static.wikia.nocookie.net/disney/images/0/05/Fox-disneyscreencaps_com-
  901.jpg
4 Abdullah,Cheetah,,https://disney.fandom.com/wiki/Abdullah,https://static.wikia.nocookie.net/disney/images/c/cb/1087603-44532-clp-
  950.jpg
5 Admiral Boom and Mr. Binnacle,"Mary Poppins (film), Mary Poppins
  Returns",,https://disney.fandom.com/wiki/Admiral_Boom_and_Mr._Binnacle,https://static.wikia.nocookie.net/disney/images/b/be/Maryp
  oppins-disneyscreencaps_com-1086.jpg
6 .Giffany,,Gravity Falls,,https://disney.fandom.com/wiki/.Giffany,https://static.wikia.nocookie.net/disney/images/5/51/Giffany.png
7 90's Adventure Bear,,Pickle and
  Peanut,,https://disney.fandom.com/wiki/90%27s_Adventure_Bear_(character),https://static.wikia.nocookie.net/disney/images/3/3f/90%2
  7s_Adventure_Bear_profile.png
8 Candace Adams,,K.C.
  Undercover,,https://disney.fandom.com/wiki/Candace_Adams,https://static.wikia.nocookie.net/disney/images/8/8b/Enemy_of_the_State_p
  romo_3.jpg
9 Ahadi,"The Lion King, The Lion King (2019
  film)",,https://disney.fandom.com/wiki/Ahadi,https://static.wikia.nocookie.net/disney/images/b/b3/Ahadihead.png
10 Al Muddy Sultan,Aladdin (TV
  series),,https://disney.fandom.com/wiki/Al_Muddy_Sultan,https://static.wikia.nocookie.net/disney/images/e/e0/Almuddyking.jpg
11 Irwina Allen,,Chip 'n Dale Rescue
  Rangers,,https://disney.fandom.com/wiki/Irwina_Allen,https://static.wikia.nocookie.net/disney/images/4/48/Chip_%27n_Dale_Rescue_Ra
  ngers_109_Risky_Beesness_arsenaloyal_-_YouTube12.jpg
12 Ambrose,"The Robber Kitten, Mickey's Polo
  Team",,https://disney.fandom.com/wiki/Ambrose,https://static.wikia.nocookie.net/disney/images/d/d3/Ambrose.jpg
13 Amos,Ben and Me,,https://disney.fandom.com/wiki/Amos,https://static.wikia.nocookie.net/disney/images/8/83/Tve8132-19531110-
  2244.jpg
14 Arabella,,,,https://disney.fandom.com/wiki/Arabella,
15 Arabella
  Smith,,https://disney.fandom.com/wiki/Arabella_Smith,https://static.wikia.nocookie.net/disney/images/d/da/Bella_sign.webp
16 Queen
  Ariel,,DuckTales,,https://disney.fandom.com/wiki/Queen_Ariel,https://static.wikia.nocookie.net/disney/images/e/e8/Char_49883.jpg
17 Arthur and Cecil,,Jungle
  Cubs,,https://disney.fandom.com/wiki/Arthur_and_Cecil,https://static.wikia.nocookie.net/disney/images/e/e9/Arthur_%26_Cecil.png
18 Fiona
  Ashbury,,Fillmore!,,https://disney.fandom.com/wiki/Fiona_Ashbury,https://static.wikia.nocookie.net/disney/images/e/ed/Fiona_Ashbur
  Y.jpg
19 Ashcan and Pete,Homeward Bound II: Lost in San
  Francisco,,https://disney.fandom.com/wiki/Ashcan_and_Pete,https://static.wikia.nocookie.net/disney/images/8/88/AshcanPete.PNG
20 Aspen,Bedtime
  Stories,,https://disney.fandom.com/wiki/Aspen,https://static.wikia.nocookie.net/disney/images/8/8b/Bedtime_stories_aspen.jpg
21 Astuto,,The Lion
  Guard,,https://disney.fandom.com/wiki/Astuto,https://static.wikia.nocookie.net/disney/images/3/3e/Lion_Guard_S03E014_-
  _Astuto_%28fox%29_Profile.jpg
22
```

Disney characters

```
File Edit View Language current mode

1 title,normal_price,sale_price,savings,steam_rating,store_id,deal_url
2 The Witcher 3: Wild Hunt,39.99,3.99,90.022506,96,1,https://www.cheapshark.com/redirect?
3 dealID=zm20RJIIRWq7UFFCs9J4ps4rgsNUV7FTSnWxzxj80%3D
4 The Inner World - The Last Wind Monk,19.99,0.99,95.047524,88,1,https://www.cheapshark.com/redirect?
5 dealID=wa5qiz7qG5nJdKq5uViAywtw8kcM95u0DQ96RKRb3Q%3D
6 LIMBO,9.99,0.99,90.090090,92,1,https://www.cheapshark.com/redirect?dealID=X9XEb%2Fw3H%2BmI80UYR458fzGB9zWEHde%2Bz2e8vPvNWl4%3D
7 INSIDE,19.99,1.99,90.045023,97,1,https://www.cheapshark.com/redirect?dealID=MNeCPws0A2Ep3wim%2FLwY4C0rcPZGEkwjw0SLzBwXs8c%3D
8 BADLAND: Game of the Year Edition,9.99,0.99,90.090090,86,1,https://www.cheapshark.com/redirect?
9 dealID=pP%2B23z60Cke6YjWgt3Ff3iYgb2a8uH4xgabC13RdTUQ%3D
10 Full Throttle Remastered,14.99,1.49,90.060040,93,1,https://www.cheapshark.com/redirect?
11 dealID=eiKRLr0t9xs54itv%2BE57ESYv7INGpw56nb7aguI0K6s%3D
12 BioShock,19.99,4.99,75.037519,94,1,https://www.cheapshark.com/redirect?dealID=70KT5vjgeNT0pZUf6NTct4pD0ozvxfM3Kwdevolt%2FCE%3D
13 XCOM: Enemy Unknown,29.99,5.99,80.026676,93,1,https://www.cheapshark.com/redirect?
14 dealID=F8so5KCN6t%2BV0b08mQwaxJ1J8vfmf5iS0CZd650821oi%3D
15 Harry Potter: Quidditch Champions,29.99,5.99,80.026676,76,1,https://www.cheapshark.com/redirect?
16 dealID=jM4%2F%2BNCq%2F8FuT5GpNfcB1ujWgVKal3DjmlzCeChoyUw%3D
17 Just Cause 2,14.99,1.49,90.060040,90,1,https://www.cheapshark.com/redirect?
18 dealID=z4EL8C19yCEHrk1%2ByEedebThQVbbli7H0Z%2BAmxgZ1S8%3D
19 The Witcher 2: Assassins of Kings Enhanced Edition,19.99,2.99,85.042521,89,1,https://www.cheapshark.com/redirect?
20 dealID=8WQ5IDVapSJnGvviMI0Hgu4YFqxme2sBdLD3vh6dZw%3D
21 BioShock 2,19.99,2.99,85.042521,88,1,https://www.cheapshark.com/redirect?
22 dealID=0%2B5%2FwXnuj0dNBuB1ytb2ytFK8W0K%2FfMzWYDpJTf4%3D
23 The Inner World,14.99,1.49,90.060040,88,1,https://www.cheapshark.com/redirect?
24 dealID=Hj%2B2BtuFWB5%2F8YfjBzmprrH5dEtAxye3wgqDDdkpBmew%3D
25 Darkstar One,8.99,0.89,90.100111,82,1,https://www.cheapshark.com/redirect?dealID=i364HrxDJkIOVrSITCBgPBPrfAPI%2BfoPxmCeq68rFdlg%3D
26 Nuclear Dawn,9.99,0.99,90.090090,78,1,https://www.cheapshark.com/redirect?dealID=ja4%2FzvHGUnCupJxJmcIa1yqRx8l7ks8RjPfyEEL75k%3D
27 Cursed to Golf,19.99,1.99,90.045023,71,1,https://www.cheapshark.com/redirect?
28 dealID=QQJXhufPXLRMgk5FT0zkyIvHbqQz%2BRpsmgChv6%2FR30%3D
29 Sub Command,9.99,1.99,80.080080,72,1,https://www.cheapshark.com/redirect?dealID=%2F0v0MrB12Q7a0LFPTjLSE7spMcwPeHNE5QFSWGxPpU%3D
30 The Witcher: Enhanced Edition Director's Cut,9.99,1.49,85.085085,89,1,https://www.cheapshark.com/redirect?
31 dealID=XvdAVEU9b7gYQqsNj1B6TC0txN8apubzIpJwMLvEVsQ%3D
32 Sword of the Necromancer,14.99,1.49,90.060040,69,1,https://www.cheapshark.com/redirect?
33 dealID=ek3TXAk1r5bv%2BEFY0GgTLVK2Y5QqxxlHp0X60Kvb5D8%3D
34 Red Dead Redemption 2,59.99,14.99,75.012502,92,1,https://www.cheapshark.com/redirect?
35 dealID=cQNS5QRQu7X7qp1Z6H%2Fp4aRdfn6cj3A9vp%2BdJmvABjk%3D
36
```

Game deals

```
jupyter mtg_cards.csv 6 hours ago Logout
File Edit View Language current mode

1 name,mana_cost,cmc,type,colors,power,toughness,rarity,set_name,image_url
2 Ancestor's Chosen,{5}{W}{W},7.0,Creature - Human Cleric,W,4,4,Uncommon,Tenth
3 Edition,http://gatherer.wizards.com/Handlers/Image.ashx?multiverseid=130550&type=card
4 Ancestor's Chosen,{5}{W}{W},7.0,Creature - Human Cleric,W,4,4,Uncommon,Tenth Edition,
5 Angel of Mercy,{4}{W},5.0,Creature - Angel,W,3,3,Uncommon,Tenth Edition,http://gatherer.wizards.com/Handlers/Image.ashx?
6 multiverseid=129465&type=card
7 Angel of Mercy,{4}{W},5.0,Creature - Angel,W,3,3,Uncommon,Tenth Edition,
8 Angelic Blessing,{2}{W},3.0,Sorcery,W,,,Common,Tenth Edition,http://gatherer.wizards.com/Handlers/Image.ashx?
9 multiverseid=129711&type=card
10 Angelic Blessing,{2}{W},3.0,Sorcery,W,,,Common,Tenth Edition,
11 Angelic Chorus,{3}{W}{W},5.0,Enchantment,W,,,Rare,Tenth Edition,http://gatherer.wizards.com/Handlers/Image.ashx?
12 multiverseid=129710&type=card
13 Angelic Wall,{1}{W},2.0,Creature - Wall,W,0,4,Common,Tenth Edition,http://gatherer.wizards.com/Handlers/Image.ashx?
14 multiverseid=129671&type=card
15 Angelic Wall,{1}{W},2.0,Creature - Wall,W,0,4,Common,Tenth Edition,
16 Aura of Silence,{1}{W}{W},3.0,Enchantment,W,,,Uncommon,Tenth Edition,http://gatherer.wizards.com/Handlers/Image.ashx?
17 multiverseid=132127&type=card
18 Aven Cloudchaser,{3}{W},4.0,Creature - Bird Soldier,W,2,2,Common,Tenth Edition,http://gatherer.wizards.com/Handlers/Image.ashx?
19 multiverseid=129470&type=card
20 Aven Cloudchaser,{3}{W},4.0,Creature - Bird Soldier,W,2,2,Common,Tenth Edition,
21 Ballista Squad,{3}{W},4.0,Creature - Human Rebel,W,2,2,Uncommon,Tenth Edition,http://gatherer.wizards.com/Handlers/Image.ashx?
22 multiverseid=129477&type=card
23 Bandage,{W},1.0,Instant,W,,,Common,Tenth Edition,http://gatherer.wizards.com/Handlers/Image.ashx?multiverseid=132106&type=card
24 Beacon of Immortality,{5}{W},6.0,Instant,W,,,Rare,Tenth Edition,http://gatherer.wizards.com/Handlers/Image.ashx?
25 multiverseid=130553&type=card
26 Benalish Knight,{2}{W},3.0,Creature - Human Knight,W,2,2,Common,Tenth Edition,http://gatherer.wizards.com/Handlers/Image.ashx?
27 multiverseid=136279&type=card
28 Benalish Knight,{2}{W},3.0,Creature - Human Knight,W,2,2,Common,Tenth Edition,
29 "Cho-Manno, Revolutionary",{2}{W}{W},4.0,Legendary Creature - Human Rebel,W,2,2,Rare,Tenth
30 Edition,http://gatherer.wizards.com/Handlers/Image.ashx?multiverseid=130554&type=card
31 Condemn,{W},1.0,Instant,W,,,Uncommon,Tenth Edition,http://gatherer.wizards.com/Handlers/Image.ashx?multiverseid=130528&type=card
32 Demystify,{W},1.0,Instant,W,,,Common,Tenth Edition,http://gatherer.wizards.com/Handlers/Image.ashx?multiverseid=129524&type=card
33
```

MTG cards

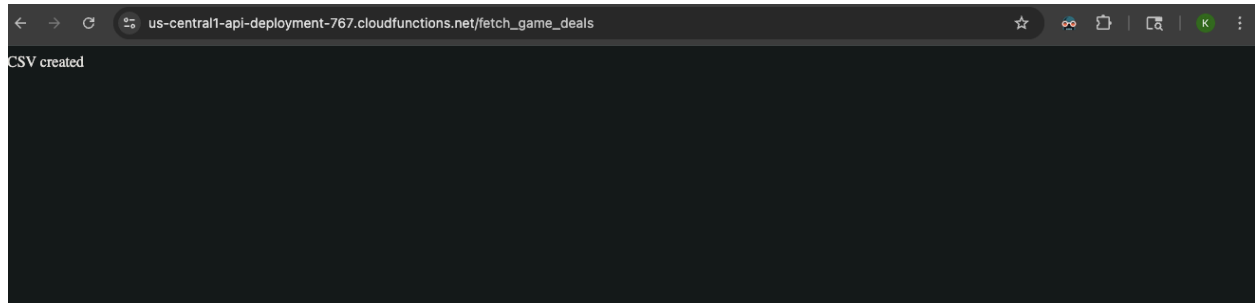
All tables match project schema

issue 4

```
import requests
import csv

def fetch_deals(request):
    url = "https://www.cheapshark.com/api/1.0/deals"
    params = {"storeID": "1", "upperPrice": "15", "pageSize": 20}
    data = requests.get(url, params=params).json()

    with open("/tmp/game_deals.csv", "w", newline='') as f:
        writer = csv.writer(f)
        writer.writerow(["title", "normal_price", "sale_price", "savings", "steam_rating", "store_id", "deal_url"])
        for deal in data:
            writer.writerow([
                deal.get("title"),
                deal.get("normalPrice"),
                deal.get("salePrice"),
                deal.get("savings"),
                deal.get("steamRatingPercent"),
                deal.get("storeID"),
                f"https://www.cheapshark.com/redirect?dealID={deal.get('dealID')}}"
            ])
    return "CSV created"
```



https://us-central1-api-deployment-767.cloudfunctions.net/fetch_game_deals

Issue #5

```
environmentVariables:
  LOG_EXECUTION_ID: 'true'
ingressSettings: ALLOW_ALL
maxInstanceCount: 100
maxInstanceRequestConcurrency: 1
revision: fetch-game-deals-00001-zag
service: projects/api-deployment-767/locations/us-centrall/services/fetch-game-deals
serviceAccountEmail: 66205963975-compute@developer.gserviceaccount.com
timeoutSeconds: 60
uri: https://fetch-game-deals-rhqfbs4tuq-uc.a.run.app
state: ACTIVE
updateTime: '2025-05-19T22:22:02.156424730Z'
url: https://us-centrall-api-deployment-767.cloudfunctions.net/fetch_game_deals
ktesfats@cloudshell:~/fetch_game_deals/fetch_game_deals (api-deployment-767)$
```



```

Successfully built cd2e091ff705
Successfully tagged gcr.io/api-deployment-767/fetch-game-deals:latest
PUSH
Pushing gcr.io/api-deployment-767/fetch-game-deals
The push refers to repository [gcr.io/api-deployment-767/fetch-game-deals]
0c9098fe2a1e: Preparing
b70327827af8: Preparing
8a977d653085: Preparing
24e7f263b031: Preparing
4bd3cc4c71de: Preparing
4beld3802eb7: Preparing
21649572714d: Preparing
6c4c763d22d0: Preparing
4beld3802eb7: Waiting
21649572714d: Waiting
6c4c763d22d0: Waiting
4bd3cc4c71de: Layer already exists
24e7f263b031: Pushed
8a977d653085: Pushed
0c9098fe2a1e: Pushed
4beld3802eb7: Layer already exists
21649572714d: Layer already exists
6c4c763d22d0: Layer already exists
b70327827af8: Pushed
latest: digest: sha256:8c94175ab5ed0426e39c88e8ac26aabb7ce50ce52fc0ef82b95d25705581a4a8 size: 1992
DONE
-----
ID: 158058d6-b1e9-47f0-87da-ba7dd5668cbf
CREATE_TIME: 2025-05-19T23:47:44+00:00
DURATION: 52S
SOURCE: gs://api-deployment-767_cloudbuild/source/1747698462.909571-413f6dde99a417a9e371e22fbfa985b.tgz
IMAGES: gcr.io/api-deployment-767/fetch-game-deals (+1 more)
STATUS: SUCCESS
ktesfats@cloudshell:~/fetch_game_deals/fetch_game_deals (api-deployment-767)$

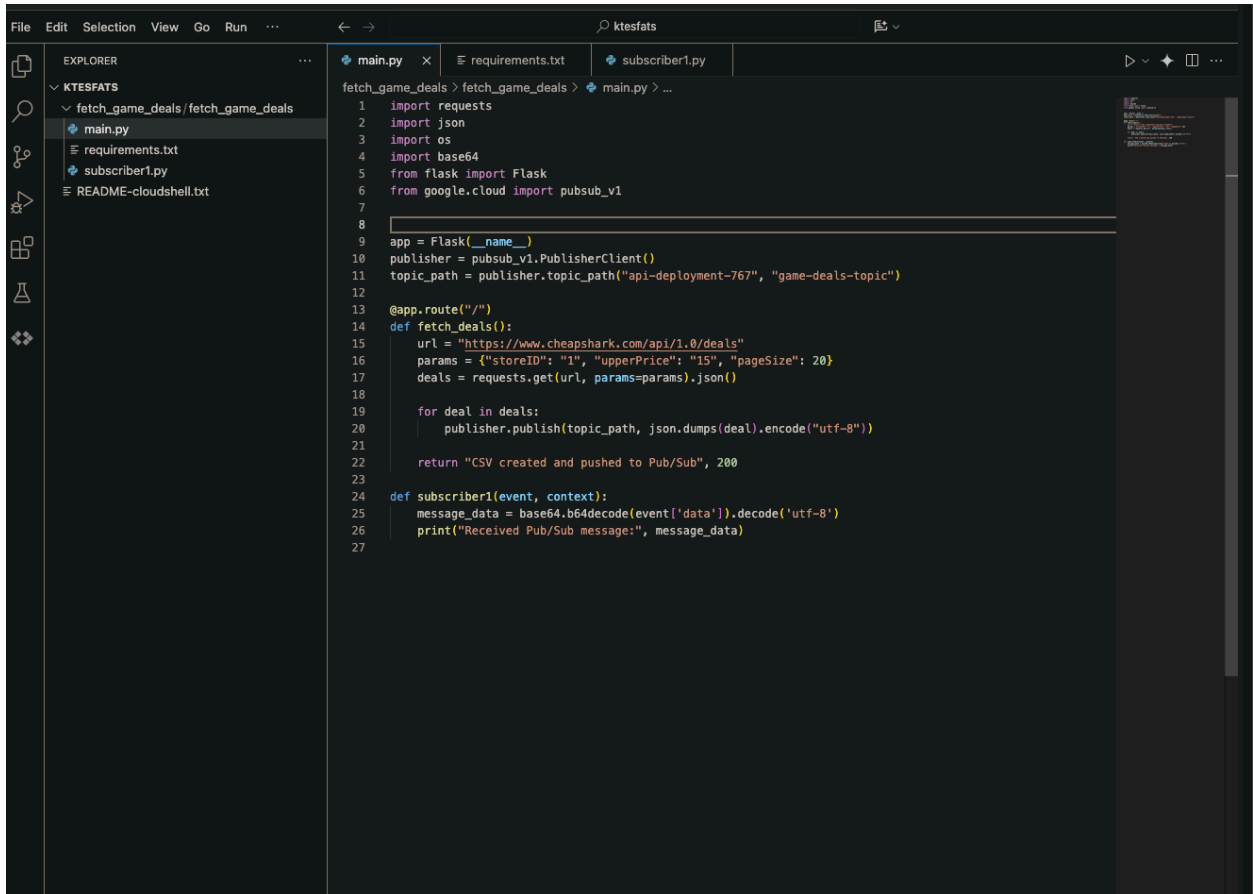
```

```

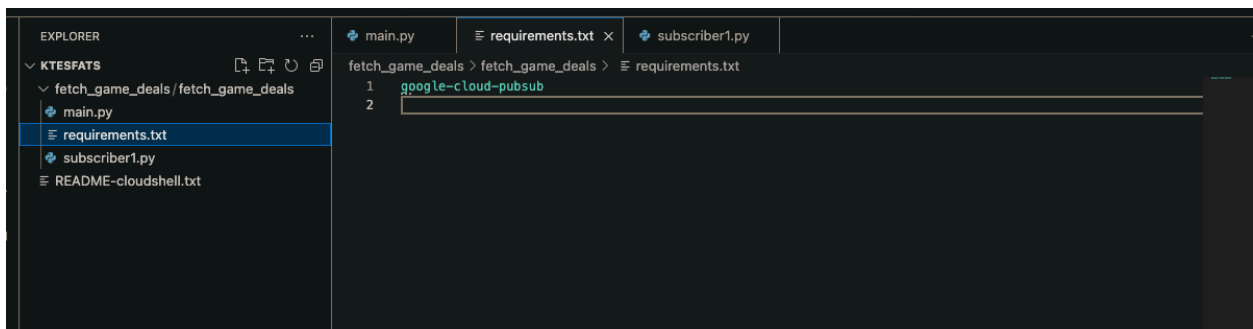
ktesfats@cloudshell:~/fetch_game_deals/fetch_game_deals (api-deployment-767)$ gcloud functions deploy subscriber1 \
--runtime python310 \
--trigger-topic game-deals-topic \
--entry-point subscriber1 \
--region=us-central1
Deploying function (may take a while - up to 2 minutes)...working..
For Cloud Build Logs, visit: https://console.cloud.google.com/cloud-build/builds;region=us-central1/9693acb3-4347-43ca-99c7-ab8dd3f981fe?project=66205963975
Deploying function (may take a while - up to 2 minutes)...done.
automaticUpdatePolicy: {}
availableMemoryMb: 256
buildId: 9693acb3-4347-43ca-99c7-ab8dd3f981fe
buildName: projects/66205963975/locations/us-central1/builds/9693acb3-4347-43ca-99c7-ab8dd3f981fe
buildServiceAccount: projects/api-deployment-767/serviceAccounts/66205963975-compute@developer.gserviceaccount.com
dockerRegistry: ARTIFACT_REGISTRY
entryPoint: subscriber1
eventTrigger:
  eventType: google.pubsub.topic.publish
  failurePolicy: {}
  resource: projects/api-deployment-767/topics/game-deals-topic
  service: pubsub.googleapis.com
ingressSettings: ALLOW_ALL
labels:
  deployment-tool: cli-gcloud
maxInstances: 3000
name: projects/api-deployment-767/locations/us-central1/functions/subscriber1
runtime: python310
satisfiesPzi: true
serviceAccountEmail: api-deployment-767@appspot.gserviceaccount.com
sourceUploadUrl: https://storage.googleapis.com/uploads-946513064469.us-central1.cloudfunctions.appspot.com/e4dd9a9d-ccc9-41ec-a5b7-7366b2cc22d9.zip
status: ACTIVE
timeout: 60s
updateTime: '2025-05-20T02:00:05.443Z'
versionId: '6'
ktesfats@cloudshell:~/fetch_game_deals/fetch_game_deals (api-deployment-767)$

```

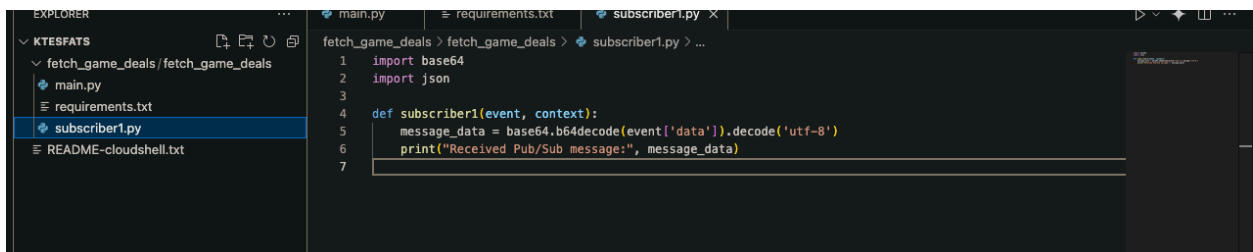
Deployed the Pub/Sub subscriber function (subscriber1) to Cloud Functions and linked it to the topic



```
1 import requests
2 import json
3 import os
4 import base64
5 from flask import Flask
6 from google.cloud import pubsub_v1
7
8
9 app = Flask(__name__)
10 publisher = pubsub_v1.PublisherClient()
11 topic_path = publisher.topic_path("api-deployment-767", "game-deals-topic")
12
13 @app.route("/")
14 def fetch_deals():
15     url = "https://www.cheapshark.com/api/1.0/deals"
16     params = {"storeID": "1", "upperPrice": "15", "pageSize": 20}
17     deals = requests.get(url, params=params).json()
18
19     for deal in deals:
20         publisher.publish(topic_path, json.dumps(deal).encode('utf-8'))
21
22     return "CSV created and pushed to Pub/Sub", 200
23
24 def subscriber1(event, context):
25     message_data = base64.b64decode(event['data']).decode('utf-8')
26     print("Received Pub/Sub message:", message_data)
27
```



```
1 google-cloud-pubsub
2
```



```
1 import base64
2 import json
3
4 def subscriber1(event, context):
5     message_data = base64.b64decode(event['data']).decode('utf-8')
6     print("Received Pub/Sub message:", message_data)
7
```

- Pub/Sub topic game-deals-topic created
- main.py publishes to that topic
- subscriber1.py listens to it
- Both are deployed on Cloud Functions

Issue #6

The screenshot shows the Google Cloud BigQuery interface. On the left is a sidebar with a search bar and a navigation tree. The main panel displays the 'game_deals_data' dataset information. The 'Dataset ID' is 'api-deployment-767.game_deals_data'. The 'Created' date is 'May 19, 2025, 10:12:22 PM UTC-4'. The 'Default table expiration' is 'Never'. The 'Last modified' date is 'May 19, 2025, 10:12:22 PM UTC-4'. The 'Data location' is 'US'. The 'Description' is empty. The 'Default collation' is 'Default collation'. The 'Default rounding mode' is 'ROUNDING_MODE_UNSPECIFIED'. The 'Time travel window' is '7 days'. The 'Case insensitive' flag is 'false'. The 'Labels' and 'Tags' sections are empty. Below the dataset info is the 'Dataset replica info' section, showing the 'Primary location' as 'US'. There are buttons for 'Create Table', 'Sharing', 'Copy', 'Delete', and 'Refresh' at the top right of the main panel.

Property	Value
Dataset ID	api-deployment-767.game_deals_data
Created	May 19, 2025, 10:12:22 PM UTC-4
Default table expiration	Never
Last modified	May 19, 2025, 10:12:22 PM UTC-4
Data location	US
Description	
Default collation	Default collation
Default rounding mode	ROUNDING_MODE_UNSPECIFIED
Time travel window	7 days
Case insensitive	false
Labels	
Tags	

Property	Value
Primary location	US

The screenshot shows the Google Cloud BigQuery interface with the 'deals' table schema view selected. The 'Schema' tab is active, showing a table with 8 columns: 'Field name', 'Type', 'Mode', 'Key', 'Collation', 'Default Value', 'Policy Tags', and 'Description'. The 'Filter' bar is empty. The table contains 8 rows of schema information. Below the table are buttons for 'Edit schema' and 'View row access policies'.

Field name	Type	Mode	Key	Collation	Default Value	Policy Tags	Description
title	STRING	NULLABLE	-	-	-	-	-
normal_price	FLOAT	NULLABLE	-	-	-	-	-
sale_price	FLOAT	NULLABLE	-	-	-	-	-
savings	FLOAT	NULLABLE	-	-	-	-	-
steam_rating	FLOAT	NULLABLE	-	-	-	-	-
store_id	STRING	NULLABLE	-	-	-	-	-
deal_url	STRING	NULLABLE	-	-	-	-	-

The screenshot shows a code editor with a Python Flask application. The file explorer on the left shows the project structure: 'KTESFATS' > 'fetch_game_deals' > 'fetch_game_deals' > 'main.py'. The main panel shows the code for 'main.py'. The code imports 'requests', 'json', 'Flask', 'PublisherClient', and 'pubsub_v1'. It defines a Flask app and a route for '/'. The route handler 'fetch_deals()' fetches data from 'https://www.cheapshark.com/api/1.0/deals' and publishes it to a Pub/Sub topic. The code also includes a main function to run the app on port 8080.

```
1 import requests
2 import json
3 from flask import Flask
4 from google.cloud import pubsub_v1
5 import os
6
7 app = Flask(__name__)
8 publisher = pubsub_v1.PublisherClient()
9 topic_path = publisher.topic_path("api-deployment-767", "game-deals-topic")
10
11 @app.route("/", methods=["GET"])
12 def fetch_deals():
13     url = "https://www.cheapshark.com/api/1.0/deals"
14     params = {"storeId": "1", "upperPrice": "15", "pageSize": 20}
15     deals = requests.get(url, params=params).json()
16
17     for deal in deals:
18         publisher.publish(topic_path, json.dumps(deal).encode("utf-8"))
19
20     return "Success", 200
21
22 if __name__ == "__main__":
23     port = int(os.environ.get("PORT", 8080))
24     app.run(host="0.0.0.0", port=port)
25
```

```

1 import base64
2 import json
3 from google.cloud import bigquery
4
5 def subscriber1(event, context):
6     client = bigquery.Client()
7
8     table_id = "api-deployment-767.game_deals_data.deals"
9     message_data = base64.b64decode(event['data']).decode('utf-8')
10    deal = json.loads(message_data)
11
12    row_to_insert = {
13        "title": deal.get("title"),
14        "normal_price": float(deal.get("normalPrice", 0)),
15        "sale_price": float(deal.get("salePrice", 0)),
16        "savings": float(deal.get("savings", 0)),
17        "steam_rating": float(deal.get("steamRatingPercent", 0)),
18        "store_id": deal.get("storeID"),
19        "deal_url": f"https://www.cheapshark.com/redirect?dealID={deal.get('dealID')}"
20    }
21
22    errors = client.insert_rows_json(table_id, [row_to_insert])
23
24    if errors == []:
25        print("Row added")
26    else:
27        print("No row added", errors)
28

```

Google Cloud | api-deployment-767 | Search (/) for resources, docs, products, and more

Cloud Run | Service details | Edit & deploy new revision | Set up Continuous Deployment | Test | Learn | Refresh

fetch-deals | Region: us-central1 | URL: https://us-central1-api-deployment-767.cloudfunctions.net/fetch_deals | Scaling: Auto (Min: 0)

Metrics | SLOs | Logs | Revisions | Source | Triggers | **Networking** | Security | YAML

Ingress

☐ Internal
Allow traffic from your project, shared VPC, and VPC service controls perimeter. Traffic from another Cloud Run service must be routed through a VPC. Limitations apply. [Learn more](#)

☒ All
Allow direct access to your service from the internet

Endpoints [Preview](#)

Default HTTPS endpoint URL

☒ Enable

<https://fetch-deals-66205963975-us-central1.run.app>

https://us-central1-api-deployment-767.cloudfunctions.net/fetch_deals

<https://fetch-deals-rhqfbs4tuq-uc.a.run.app>

Custom domains [Manage](#)

None

VPC

From the latest revision: fetch-deals-00003-lob

Network: None

Service Mesh

From the latest revision: fetch-deals-00003-lob

Service Mesh: None

Filter	Filter services								
	Name	Deployment type	Req/sec	Region	Authentication	Ingress	Recommendation	Last deployed	Deployed by
<input checked="" type="checkbox"/>	fetch-deals	(-) Function	0.01	us-central1	Allow unauthenticated	All	—	31 minutes ago	Cloud Run functions

- Created a dataset and table in BigQuery to hold game deal data
- Updated the subscriber function to insert data into the BigQuery table

- Set up a working data pipeline from the API to Pub/Sub to BigQuery
- Verified that the subscriber function was deployed and connected to the topic