

```
[1]: import numpy as np
import pandas as pd
```

Reading Data

```
[2]: df = pd.read_csv("books.csv")
df
```

	book_id	goodreads_book_id	best_book_id	work_id	books_count	isbn	isbn13	authors	original_publication_year	original_title	...	ratings_cou
0	1	2767052	2767052	2792775	272	439023483	9.780439e+12	Suzanne Collins	2008.0	The Hunger Games	...	47806
1	2	3	3	4640799	491	439554934	9.780440e+12	J.K. Rowling, Mary GrandPré	1997.0	Harry Potter and the Philosopher's Stone	...	46024
2	3	41865	41865	3212258	226	316015849	9.780316e+12	Stephenie Meyer	2005.0	Twilight	...	38668
3	6	11870085	11870085	16827462	226	525478817	9.780525e+12	John Green	2012.0	The Fault in Our Stars	...	23464
4	12	13335037	13335037	13155899	210	62024035	9.780062e+12	Veronica Roth	2011.0	Divergent	...	19035
...	...	...	...	...	...	...	...	...	...	...	...	...
1349	9925	86737	86737	3877968	52	1582349177	9.781582e+12	Mary Hoffman	2002.0	City of Masks	...	120
1350	9937	13010211	13010211	18171867	22	1596435712	9.781596e+12	Caragh M. O'Brien	2012.0	Promised	...	117
1351	9942	16074758	16074758	21869436	18	1442486597	9.781442e+12	Abigail Haas, Abby McDonald	2013.0	Dangerous Girls	...	104
1352	9947	21393526	21393526	40690062	19	62320521	9.780062e+12	Maria Dahvana Headley	2015.0	Magonia	...	125
1353	9955	13065327	13065327	18230950	25	802734375	9.780803e+12	Simone Elkeles	2013.0	Wild Cards	...	139

1354 rows × 23 columns



## ▼ Check for missing values

```
[3]: missing_values = df.isna()
print(missing_values)
cleandf = df.dropna()
```

	book_id	goodreads_book_id	best_book_id	work_id	books_count	isbn	\
0	False	False	False	False	False	False	
1	False	False	False	False	False	False	
2	False	False	False	False	False	False	
3	False	False	False	False	False	False	
4	False	False	False	False	False	False	
...	...	...	...	...	...	...	
1349	False	False	False	False	False	False	
1350	False	False	False	False	False	False	
1351	False	False	False	False	False	False	
1352	False	False	False	False	False	False	
1353	False	False	False	False	False	False	

	isbn13	authors	original_publication_year	original_title	...	\
0	False	False	False	False	...	
1	False	False	False	False	...	
2	False	False	False	False	...	
3	False	False	False	False	...	
4	False	False	False	False	...	
...	...	...	...	...	...	
1349	False	False	False	False	...	
1350	False	False	False	False	...	
1351	False	False	False	False	...	
1352	False	False	False	False	...	
1353	False	False	False	False	...	

	ratings_count	work_ratings_count	work_text_reviews_count	ratings_1	\
0	False	False	False	False	
1	False	False	False	False	
2	False	False	False	False	
3	False	False	False	False	
4	False	False	False	False	
...	...	...	...	...	
1349	False	False	False	False	
1350	False	False	False	False	
1351	False	False	False	False	
1352	False	False	False	False	
1353	False	False	False	False	

	ratings_2	ratings_3	ratings_4	ratings_5	image_url	small_image_url
0	False	False	False	False	False	False
1	False	False	False	False	False	False
2	False	False	False	False	False	False
3	False	False	False	False	False	False
4	False	False	False	False	False	False
...	...	...	...	...	...	...
1349	False	False	False	False	False	False
1350	False	False	False	False	False	False
1351	False	False	False	False	False	False
1352	False	False	False	False	False	False
1353	False	False	False	False	False	False

[1354 rows x 23 columns]

```
[4]: harry_potter_books = Cleandf[Cleandf["title"].str.contains("Harry Potter", case=False, na=False)]
print(harry_potter_books)
```

	book_id	goodreads_book_id	best_book_id	work_id	books_count	\
1	2	3	3	4640799	491	
6	18	5	5	2402163	376	
8	21	2	2	2809203	307	
9	23	15881	15881	6231171	398	
10	24	6	6	3046572	332	
11	25	136251	136251	2963218	263	
12	27	1	1	41335427	275	
96	422	862041	862041	2962492	76	
613	3753	10	10	21457570	6	
1036	7018	483445	483445	471792	42	

  

	isbn	isbn13	authors	\
1	439554934	9.780440e+12	J.K. Rowling, Mary GrandPré	
6	043965548X	9.780440e+12	J.K. Rowling, Mary GrandPré, Rufus Beck	
8	439358078	9.780439e+12	J.K. Rowling, Mary GrandPré	
9	439064864	9.780439e+12	J.K. Rowling, Mary GrandPré	
10	439139600	9.780439e+12	J.K. Rowling, Mary GrandPré	
11	545010225	9.780545e+12	J.K. Rowling, Mary GrandPré	
12	439785960	9.780440e+12	J.K. Rowling, Mary GrandPré	
96	545044251	9.780545e+12	J.K. Rowling	
613	439827604	9.780440e+12	J.K. Rowling	
1036	042519891X	9.780425e+12	David Colbert	

  

	original_publication_year	\
1	1997.0	
6	1999.0	
8	2003.0	
9	1998.0	
10	2000.0	
11	2007.0	
12	2005.0	
96	1998.0	
613	2005.0	
1036	2001.0	

	original_title	...	ratings_count	\
1	Harry Potter and the Philosopher's Stone	...	4602479	
6	Harry Potter and the Prisoner of Azkaban	...	1832823	
8	Harry Potter and the Order of the Phoenix	...	1735368	
9	Harry Potter and the Chamber of Secrets	...	1779331	
10	Harry Potter and the Goblet of Fire	...	1753043	
11	Harry Potter and the Deathly Hallows	...	1746574	
12	Harry Potter and the Half-Blood Prince	...	1678823	
96	Complete Harry Potter Boxed Set	...	190050	
613	Harry Potter Collection (Harry Potter, #1-6)	...	24618	
1036	The Magical Worlds of Harry Potter: A Treasury...	...	13820	

	work_ratings_count	work_text_reviews_count	ratings_1	ratings_2	\
1	4800065	75867	75504	101676	
6	1969375	36099	6716	20413	
8	1840548	28685	9528	31577	
9	1906199	34172	8253	42251	
10	1868642	31084	6676	20210	
11	1847395	51942	9363	22245	
12	1785676	27520	7308	21516	
96	204125	6508	1105	1285	
613	26274	882	203	186	
1036	15145	267	329	1125	

	ratings_3	ratings_4	ratings_5	\
1	455024	1156318	3011543	
6	166129	509447	1266670	
8	180210	494427	1124806	
9	242345	548266	1065084	
10	151785	494926	1195045	
11	113646	383914	1318227	
12	136333	459028	1161491	
96	7020	30666	164049	
613	946	3891	21048	
1036	3766	3593	6332	

	image_url	\
1	<a href="https://images.gr-assets.com/books/1474154022m...">https://images.gr-assets.com/books/1474154022m...</a>	
6	<a href="https://images.gr-assets.com/books/1499277281m...">https://images.gr-assets.com/books/1499277281m...</a>	
8	<a href="https://images.gr-assets.com/books/1387141547m...">https://images.gr-assets.com/books/1387141547m...</a>	
9	<a href="https://images.gr-assets.com/books/1474169725m...">https://images.gr-assets.com/books/1474169725m...</a>	
10	<a href="https://images.gr-assets.com/books/1361482611m...">https://images.gr-assets.com/books/1361482611m...</a>	
11	<a href="https://images.gr-assets.com/books/1474171184m...">https://images.gr-assets.com/books/1474171184m...</a>	
12	<a href="https://images.gr-assets.com/books/1361039191m...">https://images.gr-assets.com/books/1361039191m...</a>	

	image_url \
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6	https://images.gr-assets.com/books/1499277281m...
8	https://images.gr-assets.com/books/1387141547m...
9	https://images.gr-assets.com/books/1474169725m...
10	https://images.gr-assets.com/books/1361482611m...
11	https://images.gr-assets.com/books/1474171184m...
12	https://images.gr-assets.com/books/1361039191m...
96	https://images.gr-assets.com/books/1392579059m...
613	https://images.gr-assets.com/books/1328867351m...
1036	https://s.gr-assets.com/assets/nophoto/book/11...

	small_image_url
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6	https://images.gr-assets.com/books/1499277281s...
8	https://images.gr-assets.com/books/1387141547s...
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10	https://images.gr-assets.com/books/1361482611s...
11	https://images.gr-assets.com/books/1474171184s...
12	https://images.gr-assets.com/books/1361039191s...
96	https://images.gr-assets.com/books/1392579059s...
613	https://images.gr-assets.com/books/1328867351s...
1036	https://s.gr-assets.com/assets/nophoto/book/50...

[10 rows x 23 columns]

```
[5]: cdf = harry_potter_books[
      [
        "book_id",
        "best_book_id",
        "books_count",
        "title",
        "average_rating",
      ]
    ]
cdf.head(10)
```

[5]:	book_id	best_book_id	books_count	title	average_rating
	1	2	3	491 Harry Potter and the Sorcerer's Stone (Harry P...	4.44
	6	18	5	376 Harry Potter and the Prisoner of Azkaban (Harr...	4.53
	8	21	2	307 Harry Potter and the Order of the Phoenix (Har...	4.46
	9	23	15881	398 Harry Potter and the Chamber of Secrets (Harry...	4.37
	10	24	6	332 Harry Potter and the Goblet of Fire (Harry Pot...	4.53
	11	25	136251	263 Harry Potter and the Deathly Hallows (Harry Po...	4.61
	12	27	1	275 Harry Potter and the Half-Blood Prince (Harry ...	4.54
	96	422	862041	76 Harry Potter Boxset (Harry Potter, #1-7)	4.74
	613	3753	10	6 Harry Potter Collection (Harry Potter, #1-6)	4.73
	1036	7018	483445	42 The Magical Worlds of Harry Potter: A Treasury...	3.96

```
[6]: most_selling_harry_potter_books = harry_potter_books.sort_values(by='books_count', ascending=False).head()
```

```
# Display the most selling Harry Potter books
print("Most selling Harry Potter books:")
print(most_selling_harry_potter_books)
```

Most selling Harry Potter books:

	book_id	goodreads_book_id	best_book_id	work_id	books_count	\
1	2	3	3	4640799	491	
9	23	15881	15881	6231171	398	
6	18	5	5	2402163	376	
10	24	6	6	3046572	332	
8	21	2	2	2809203	307	

  

	isbn	isbn13	authors	\
1	439554934	9.780440e+12	J.K. Rowling, Mary GrandPré	
9	439064864	9.780439e+12	J.K. Rowling, Mary GrandPré	
6	043965548X	9.780440e+12	J.K. Rowling, Mary GrandPré, Rufus Beck	
10	439139600	9.780439e+12	J.K. Rowling, Mary GrandPré	
8	439358078	9.780439e+12	J.K. Rowling, Mary GrandPré	

  

	original_publication_year	original_title	...	\
1	1997.0	Harry Potter and the Philosopher's Stone	...	
9	1998.0	Harry Potter and the Chamber of Secrets	...	
6	1999.0	Harry Potter and the Prisoner of Azkaban	...	
10	2000.0	Harry Potter and the Goblet of Fire	...	
8	2003.0	Harry Potter and the Order of the Phoenix	...	

  

	ratings_count	work_ratings_count	work_text_reviews_count	ratings_1	\
1	4602479	4800065	75867	75504	
9	1779331	1906199	34172	8253	
6	1832823	1969375	36099	6716	
10	1753043	1868642	31084	6676	
8	1735368	1840548	28685	9528	

  

	ratings_2	ratings_3	ratings_4	ratings_5	\
1	101676	455024	1156318	3011543	
9	42251	242345	548266	1065084	
6	20413	166129	509447	1266670	
10	20210	151785	494926	1195045	
8	31577	180210	494427	1124806	

  

	image_url	\
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6	<a href="https://images.gr-assets.com/books/1499277281m...">https://images.gr-assets.com/books/1499277281m...</a>	

	image_url \
1	<a href="https://images.gr-assets.com/books/1474154022m...">https://images.gr-assets.com/books/1474154022m...</a>
9	<a href="https://images.gr-assets.com/books/1474169725m...">https://images.gr-assets.com/books/1474169725m...</a>
6	<a href="https://images.gr-assets.com/books/1499277281m...">https://images.gr-assets.com/books/1499277281m...</a>
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8	<a href="https://images.gr-assets.com/books/1387141547m...">https://images.gr-assets.com/books/1387141547m...</a>

  

	small_image_url
1	<a href="https://images.gr-assets.com/books/1474154022s...">https://images.gr-assets.com/books/1474154022s...</a>
9	<a href="https://images.gr-assets.com/books/1474169725s...">https://images.gr-assets.com/books/1474169725s...</a>
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8	<a href="https://images.gr-assets.com/books/1387141547s...">https://images.gr-assets.com/books/1387141547s...</a>

[5 rows x 23 columns]



[5 rows x 25 columns]

```
[7]: # Calculate the average rating of the Harry Potter books
average_rating_harry_potter = harry_potter_books['average_rating'].mean()

# Display the average rating
print("Average rating of Harry Potter books:", average_rating_harry_potter)
```

🏠 ⬆ ⬇ ⬇ ⬇ ⬇

Average rating of Harry Potter books: 4.4910000000000005