In [1]:
```
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt
```

In [4]:
```
df = pd.read_csv(r'C:\Users\Ahmed\Downloads\books\books.csv')
print(df.head())
```

```
   book_id  goodreads_book_id  best_book_id   work_id  books_count       isbn  \
0        1            2767052       2767052   2792775          272  439023483
1        2                  3             3   4640799          491  439554934
2        3              41865         41865   3212258          226  316015849
3        6           11870085      11870085  16827462          226  525478817
4       12           13335037      13335037  13155899          210   62024035

         isbn13                     authors  original_publication_year  \
0  9.780439e+12              Suzanne Collins                     2008.0
1  9.780440e+12  J.K. Rowling, Mary GrandPré                     1997.0
2  9.780316e+12              Stephenie Meyer                     2005.0
3  9.780525e+12                   John Green                     2012.0
4  9.780062e+12                Veronica Roth                     2011.0

                          original_title  ... ratings_count  \
0                        The Hunger Games  ...       4780653
1  Harry Potter and the Philosopher's Stone  ...       4602479
2                                Twilight  ...       3866839
3                  The Fault in Our Stars  ...       2346404
4                              Divergent  ...       1903563

  work_ratings_count  work_text_reviews_count  ratings_1  ratings_2  \
0            4942365                   155254      66715     127936
1            4800065                    75867      75504     101676
2            3916824                    95009     456191     436802
3            2478609                   140739      47994      92723
4            2216814                   101023      36315      82870

   ratings_3  ratings_4  ratings_5  \
0     560092    1481305    2706317
1     455024    1156318    3011543
2     793319     875073    1355439
3     327550     698471    1311871
4     310297     673028    1114304

                                           image_url  \
0  https://images.gr-assets.com/books/1447303603m...
1  https://images.gr-assets.com/books/1474154022m...
2  https://images.gr-assets.com/books/1361039443m...
3  https://images.gr-assets.com/books/1360206420m...
4  https://images.gr-assets.com/books/1328559506m...

                                     small_image_url
0  https://images.gr-assets.com/books/1447303603s...
1  https://images.gr-assets.com/books/1474154022s...
2  https://images.gr-assets.com/books/1361039443s...
3  https://images.gr-assets.com/books/1360206420s...
4  https://images.gr-assets.com/books/1328559506s...

[5 rows x 23 columns]
```

In [5]:
```
df = pd.read_csv(r'C:\Users\Ahmed\Downloads\books\books.csv')
print(df.info())
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 1354 entries, 0 to 1353
Data columns (total 23 columns):
 #   Column                     Non-Null Count  Dtype
---  ------                     --------------  -----
 0   book_id                    1354 non-null   int64
 1   goodreads_book_id          1354 non-null   int64
 2   best_book_id               1354 non-null   int64
 3   work_id                    1354 non-null   int64
 4   books_count                1354 non-null   int64
 5   isbn                       1302 non-null   object
 6   isbn13                     1310 non-null   float64
 7   authors                    1354 non-null   object
 8   original_publication_year  1351 non-null   float64
 9   original_title             1302 non-null   object
 10  title                      1354 non-null   object
 11  language_code              1245 non-null   object
 12  average_rating             1354 non-null   float64
 13  ratings_count              1354 non-null   int64
 14  work_ratings_count         1354 non-null   int64
 15  work_text_reviews_count    1354 non-null   int64
 16  ratings_1                  1354 non-null   int64
 17  ratings_2                  1354 non-null   int64
 18  ratings_3                  1354 non-null   int64
 19  ratings_4                  1354 non-null   int64
 20  ratings_5                  1354 non-null   int64
 21  image_url                  1354 non-null   object
 22  small_image_url            1354 non-null   object
dtypes: float64(3), int64(13), object(7)
memory usage: 243.4+ KB
None
```

In [6]:
```
df = pd.read_csv(r'C:\Users\Ahmed\Downloads\books\books.csv')
sel_cols = ['title', 'authors', 'original_publication_year', 'average_rating', 'ratings_count', 'small_image_url']
df = df[sel_cols]
```

In [9]:
```
authors = df.authors.unique()
jkr = [i for i in authors if i.find('J.K. Rowling') != -1]
jkr_books = df.loc[df.authors.isin(jkr)]
all_titles = jkr_books.title.unique()
hp_titles = [i for i in all_titles if i.find('Harry Potter and ') != -1]
hp_books = jkr_books.loc[jkr_books.title.isin(hp_titles)]
hp_books = hp_books.sort_values(by=['original_publication_year'], ascending=True)
hp_books
```

Out[9]:

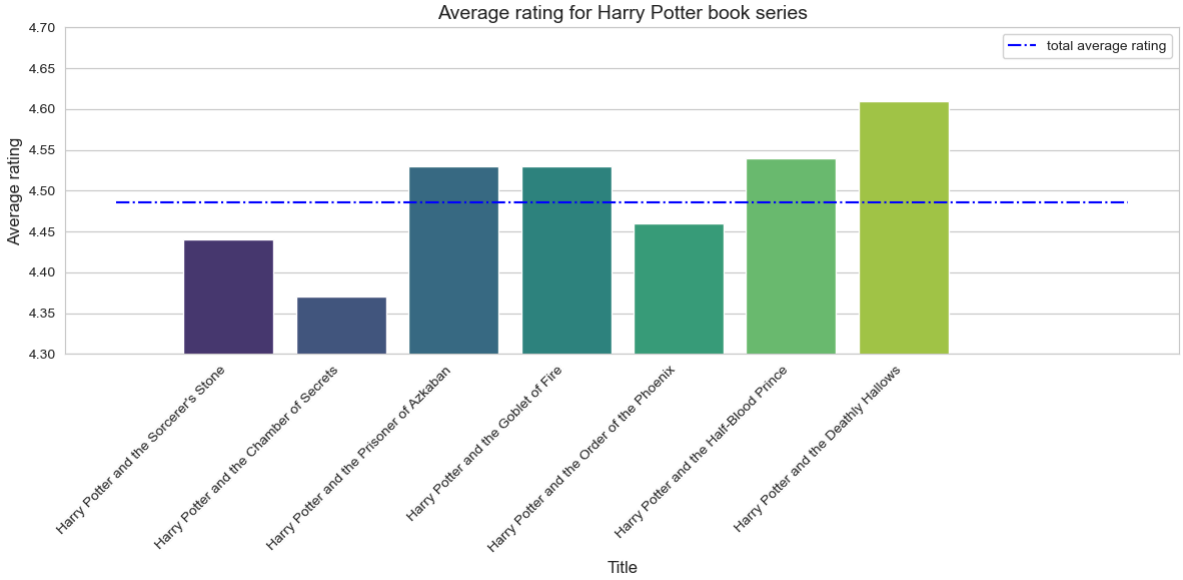
	title	authors	original_publication_year	average_rating	ratings_count	small_image_url
1	Harry Potter and the Sorcerer's Stone (Harry P...	J.K. Rowling, Mary GrandPré	1997.0	4.44	4602479	https://images.gr-assets.com/books/1474154022s...
9	Harry Potter and the Chamber of Secrets (Harry...	J.K. Rowling, Mary GrandPré	1998.0	4.37	1779331	https://images.gr-assets.com/books/1474169725s...
6	Harry Potter and the Prisoner of Azkaban (Harr...	J.K. Rowling, Mary GrandPré, Rufus Beck	1999.0	4.53	1832823	https://images.gr-assets.com/books/1499277281s...
10	Harry Potter and the Goblet of Fire (Harry Pot...	J.K. Rowling, Mary GrandPré	2000.0	4.53	1753043	https://images.gr-assets.com/books/1361482611s...
8	Harry Potter and the Order of the Phoenix (Har...	J.K. Rowling, Mary GrandPré	2003.0	4.46	1735368	https://images.gr-assets.com/books/1387141547s...
12	Harry Potter and the Half-Blood Prince (Harry ...	J.K. Rowling, Mary GrandPré	2005.0	4.54	1678823	https://images.gr-assets.com/books/1361039191s...
11	Harry Potter and the Deathly Hallows (Harry Po...	J.K. Rowling, Mary GrandPré	2007.0	4.61	1746574	https://images.gr-assets.com/books/1474171184s...

In [11]:
```
titles = hp_books.title.tolist()
titles = [title[:title.find(' (')] for title in titles]

weighted_avg = (hp_books.average_rating * hp_books.ratings_count).sum() / hp_books.ratings_count.sum()

sns.set_style("whitegrid")
plt.figure(figsize=(12, 6))
sns.barplot(x=titles, y=hp_books.average_rating, palette="viridis")
plt.xlabel('Title', fontsize=12)
plt.ylabel('Average rating', fontsize=12)
plt.ylim((4.3, 4.7))
plt.hlines(weighted_avg, xmin=-1, xmax=8, color='blue', linestyles='dashdot', label='total average rating')
plt.title('Average rating for Harry Potter book series', fontsize=14)
plt.xticks(rotation=45, ha='right')
plt.tight_layout()
plt.legend()
plt.show()
```

```
C:\Users\Ahmed\anaconda3\Lib\site-packages\seaborn\_oldcore.py:1765: FutureWarning: unique with argument that is not not a Series, Index, ExtensionArray, or np.ndarray is deprecated and will raise in a future version.
  order = pd.unique(vector)
```



In [ ]: