

```
In [6]: import numpy as np
import pandas as pd
```

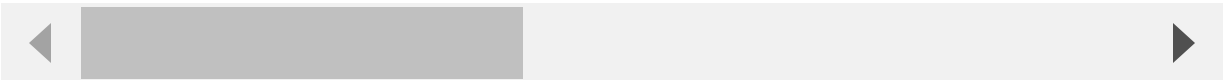
```
In [7]: books=pd.read_csv('Books.csv')
users=pd.read_csv('Users.csv')
ratings=pd.read_csv('Ratings.csv')
```

```
C:\Users\rafro\Anaconda3\lib\site-packages\IPython\core\interactiveshell.py:2785: DtypeWarning: Columns (3) have mixed types. Specify dtype option on import or set low_memory=False.
interactivity=interactivity, compiler=compiler, result=result)
```

```
In [8]: books.head()
```

```
Out[8]:
```

	ISBN	Book-Title	Book-Author	Year-Of-Publication	Publisher	
0	0195153448	Classical Mythology	Mark P. O. Morford	2002	Oxford University Press	<a href="http://images.amazon.com">http://images.amazon.com</a>
1	0002005018	Clara Callan	Richard Bruce Wright	2001	HarperFlamingo Canada	<a href="http://images.amazon.com">http://images.amazon.com</a>
2	0060973129	Decision in Normandy	Carlo D'Este	1991	HarperPerennial	<a href="http://images.amazon.com">http://images.amazon.com</a>
3	0374157065	Flu: The Story of the Great Influenza Pandemic...	Gina Bari Kolata	1999	Farrar Straus Giroux	<a href="http://images.amazon.com">http://images.amazon.com</a>
4	0393045218	The Mummies of Urumchi	E. J. W. Barber	1999	W. W. Norton & Company	<a href="http://images.amazon.com">http://images.amazon.com</a>



In [9]: `users.head()`

Out[9]:

	User-ID	Location	Age
0	1	nyc, new york, usa	NaN
1	2	stockton, california, usa	18.0
2	3	moscow, yukon territory, russia	NaN
3	4	porto, v.n.gaia, portugal	17.0
4	5	farnborough, hants, united kingdom	NaN

In [10]: `ratings.head()`

Out[10]:

	User-ID	ISBN	Book-Rating
0	276725	034545104X	0
1	276726	0155061224	5
2	276727	0446520802	0
3	276729	052165615X	3
4	276729	0521795028	6

In [11]: `print(books.shape)`  
`print(users.shape)`  
`print(ratings.shape)`

(271360, 8)  
(278858, 3)  
(1149780, 3)

In [12]: `books.isnull().sum()`

Out[12]: ISBN 0  
Book-Title 0  
Book-Author 1  
Year-Of-Publication 0  
Publisher 2  
Image-URL-S 0  
Image-URL-M 0  
Image-URL-L 3  
dtype: int64

In [13]: `users.isnull().sum()`

Out[13]: User-ID 0  
Location 0  
Age 110762  
dtype: int64

```
In [14]: ratings.isnull().sum()
```

```
Out[14]: User-ID      0  
         ISBN        0  
         Book-Rating  0  
         dtype: int64
```

```
In [15]: books.duplicated().sum()
```

```
Out[15]: 0
```

```
In [12]: users.duplicated().sum()
```

```
Out[12]: 0
```

```
In [16]: ratings.merge(books,on='ISBN')
```

Out[16]:

	User-ID	ISBN	Book-Rating	Book-Title	Book-Author	Year-Of-Publication	
0	276725	034545104X	0	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
1	2313	034545104X	5	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
2	6543	034545104X	0	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
3	8680	034545104X	5	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
4	10314	034545104X	9	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
5	23768	034545104X	0	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
6	28266	034545104X	0	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
7	28523	034545104X	0	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
8	39002	034545104X	0	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
9	50403	034545104X	9	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
10	56157	034545104X	0	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
11	59102	034545104X	0	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
12	59287	034545104X	0	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
13	63970	034545104X	8	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
14	77480	034545104X	8	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
15	77940	034545104X	0	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
16	81977	034545104X	0	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
17	94362	034545104X	5	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine

	User-ID	ISBN	Book-Rating	Book-Title	Book-Author	Year-Of-Publication	
18	98391	034545104X	9	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
19	112199	034545104X	6	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
20	115435	034545104X	5	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
21	123981	034545104X	0	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
22	128045	034545104X	7	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
23	128276	034545104X	5	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
24	129311	034545104X	7	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
25	132081	034545104X	0	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
26	133235	034545104X	0	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
27	135045	034545104X	0	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
28	138543	034545104X	0	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
29	144315	034545104X	0	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
...	...	...	...	...	...	...	...
1031106	276680	0312324766	0	The Men We Became : My Friendship with John F....	Robert T. Littell	2004	St. Martin'
1031107	276680	0452267943	0	Bellefleur	Joyce Carol Oates	1991	Plume Bo
1031108	276680	0671516949	7	A MARRIAGE MADE AT WOODSTOCK	Cathie Pelletier	1995	Washingtc Press
1031109	276680	067179387X	9	The WEIGHT OF WINTER	Cathie Pelletier	1993	Washingtc Press

	User-ID	ISBN	Book-Rating	Book-Title	Book-Author	Year-Of-Publication	
<b>1031110</b>	276680	0671883917	0	VERA	Elizabeth Von arnim	1995	Washingtc Press
<b>1031111</b>	276680	0743257502	0	The Glory Cloak : A Novel of Louisa May Alcott...	Patricia O'Brien	2004	Touchston
<b>1031112</b>	276680	0767409752	0	A Guided Tour of Rene Descartes' Meditations o...	Christopher Biffle	2000	McGraw-H Humanitie Sciences/
<b>1031113</b>	276680	0785263195	0	If It's Not Close, They Can't Cheat: Crushing ...	Hugh Hewitt	2004	Nelson Bc
<b>1031114</b>	276680	0802141358	0	The Mammoth Cheese	Sheri Holman	2004	Grove Pre
<b>1031115</b>	276680	0812881311	0	Streets of Gold	Evan Hunter	1985	Madison E
<b>1031116</b>	276680	0865055041	0	Kitchen (Historic Communities (Paperback))	Bobbie Kalman	1990	Crabtree F Company
<b>1031117</b>	276680	086505505X	0	Home Crafts (Historic Communities (Paperback))	Bobbie Kalman	1990	Crabtree F Company
<b>1031118</b>	276680	1564407284	0	The Old Sturbridge Village Cookbook, 2nd : Aut...	Caroline Sloat	1995	Globe Pec
<b>1031119</b>	276680	1582343594	0	City of Masks : A Cree Black Novel	Daniel Hecht	2004	Bloomsbu
<b>1031120</b>	276681	0140290788	9	Time Out Chicago (Time Out Chicago)	Time Out	2000	Penguin E
<b>1031121</b>	276681	0609806491	7	The Zen of Proposal Writing: An Expert's Stres...	Kitta Reeds	2002	Three Riv (CA)

	User-ID	ISBN	Book-Rating	Book-Title	Book-Author	Year-Of-Publication	
1031122	276681	0764504444	0	Access 2000 for Windows for Dummies	John Kaufeld	1999	For Dumm
1031123	276681	1931333246	10	Chorus	Kurt Messick	2003	Dry Bones
1031124	276683	0316185922	5	The River Cafe Wine Primer	Joseph Delissio	2000	Little, Bro
1031125	276688	0060164220	0	Coyote Waits	Tony Hillerman	1990	Harpercoll
1031126	276688	0060168307	0	Sacred Clowns	Tony Hillerman	1994	Harpercoll
1031127	276688	0312264186	8	You Can't Catch Death: A Daughter's Memoir	Ilanthe Brautigan	2001	St. Martin'
1031128	276688	0385471092	0	Mrs. Pollifax and the Second Thief	Dorothy Gilman	1993	Doubleday
1031129	276688	0425150526	0	Death Crosses the Border	Janice Steinberg	1995	Berkley Pi Group
1031130	276688	0449907422	0	Jazz Funeral: A Skip Langdon Novel	Julie Smith	1993	Ballantine
1031131	276688	0517145553	0	Mostly Harmless	Douglas Adams	1995	Random H Value Pub
1031132	276688	1575660792	7	Gray Matter	Shirley Kennett	1996	Kensington Publishing Corporatic
1031133	276690	0590907301	0	Triplet Trouble and the Class Trip (Triplet Tr...	Debbie Dadey	1997	Apple
1031134	276704	0679752714	0	A Desert of Pure Feeling (Vintage Contemporaries)	Judith Freeman	1997	Vintage B
1031135	276704	0806917695	5	Perplexing Lateral Thinking Puzzles: Scholasti...	Paul Sloane	1997	Sterling P

1031136 rows × 10 columns



```
In [17]: ratings_with_name=ratings.merge(books,on='ISBN')
```

```
In [18]: ratings_with_name
```

Out[18]:

	User-ID	ISBN	Book-Rating	Book-Title	Book-Author	Year-Of-Publication	
0	276725	034545104X	0	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
1	2313	034545104X	5	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
2	6543	034545104X	0	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
3	8680	034545104X	5	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
4	10314	034545104X	9	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
5	23768	034545104X	0	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
6	28266	034545104X	0	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
7	28523	034545104X	0	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
8	39002	034545104X	0	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
9	50403	034545104X	9	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
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11	59102	034545104X	0	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
12	59287	034545104X	0	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
13	63970	034545104X	8	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
14	77480	034545104X	8	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
15	77940	034545104X	0	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
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<b>18</b>	98391	034545104X	9	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
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<b>29</b>	144315	034545104X	0	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
...	...	...	...	...	...	...	...
<b>1031106</b>	276680	0312324766	0	The Men We Became : My Friendship with John F....	Robert T. Littell	2004	St. Martin'
<b>1031107</b>	276680	0452267943	0	Bellefleur	Joyce Carol Oates	1991	Plume Bo
<b>1031108</b>	276680	0671516949	7	A MARRIAGE MADE AT WOODSTOCK	Cathie Pelletier	1995	Washingtc Press
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<b>1031112</b>	276680	0767409752	0	A Guided Tour of Rene Descartes' Meditations o...	Christopher Biffle	2000	McGraw-H Humanitie Sciences/
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<b>1031118</b>	276680	1564407284	0	The Old Sturbridge Village Cookbook, 2nd : Aut...	Caroline Sloat	1995	Globe Pec
<b>1031119</b>	276680	1582343594	0	City of Masks : A Cree Black Novel	Daniel Hecht	2004	Bloomsbu
<b>1031120</b>	276681	0140290788	9	Time Out Chicago (Time Out Chicago)	Time Out	2000	Penguin E
<b>1031121</b>	276681	0609806491	7	The Zen of Proposal Writing: An Expert's Stres...	Kitta Reeds	2002	Three Riv (CA)

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1031125	276688	0060164220	0	Coyote Waits	Tony Hillerman	1990	Harpercoll
1031126	276688	0060168307	0	Sacred Clowns	Tony Hillerman	1994	Harpercoll
1031127	276688	0312264186	8	You Can't Catch Death: A Daughter's Memoir	Ilanthe Brautigan	2001	St. Martin'
1031128	276688	0385471092	0	Mrs. Pollifax and the Second Thief	Dorothy Gilman	1993	Doubleday
1031129	276688	0425150526	0	Death Crosses the Border	Janice Steinberg	1995	Berkley Pi Group
1031130	276688	0449907422	0	Jazz Funeral: A Skip Langdon Novel	Julie Smith	1993	Ballantine
1031131	276688	0517145553	0	Mostly Harmless	Douglas Adams	1995	Random H Value Pub
1031132	276688	1575660792	7	Gray Matter	Shirley Kennett	1996	Kensington Publishing Corporatic
1031133	276690	0590907301	0	Triplet Trouble and the Class Trip (Triplet Tr...	Debbie Dadey	1997	Apple
1031134	276704	0679752714	0	A Desert of Pure Feeling (Vintage Contemporaries)	Judith Freeman	1997	Vintage B
1031135	276704	0806917695	5	Perplexing Lateral Thinking Puzzles: Scholasti...	Paul Sloane	1997	Sterling P

1031136 rows × 10 columns

```
In [19]: num_rating_df=ratings_with_name.groupby('Book-Title').count()['Book-Rating'].r
         reset_index()
         num_rating_df.rename(columns={'Book-Rating':'num_ratings'},inplace=True)
```

```
In [20]: num_rating_df
```



Out[20]:

	<b>Book-Title</b>	<b>num_ratings</b>
<b>0</b>	A Light in the Storm: The Civil War Diary of ...	4
<b>1</b>	Always Have Popsicles	1
<b>2</b>	Apple Magic (The Collector's series)	1
<b>3</b>	Ask Lily (Young Women of Faith: Lily Series, ...	1
<b>4</b>	Beyond IBM: Leadership Marketing and Finance ...	1
<b>5</b>	Clifford Visita El Hospital (Clifford El Gran...	1
<b>6</b>	Dark Justice	1
<b>7</b>	Deceived	2
<b>8</b>	Earth Prayers From around the World: 365 Pray...	10
<b>9</b>	Final Fantasy Anthology: Official Strategy Gu...	4
<b>10</b>	Flight of Fancy: American Heiresses (Zebra Ba...	2
<b>11</b>	Garfield Bigger and Better (Garfield (Numbere...	2
<b>12</b>	God's Little Promise Book	2
<b>13</b>	Good Wives: Image and Reality in the Lives of...	10
<b>14</b>	Goosebumps Monster Edition 1: Welcome to Dead...	9
<b>15</b>	Harry Potter and the Bible: The Menace Behind...	1
<b>16</b>	Highland Desire (Zebra Splendor Historical Ro...	1
<b>17</b>	Hiking the California Coastal Trail: Oregon t...	1
<b>18</b>	It Takes Two	2
<b>19</b>	LA Gallinita Roja/the Little Red Hen	2
<b>20</b>	Little Comic Shop of Horrors (Give Yourself G...	4
<b>21</b>	Microsoft Application Architecture For Micros...	1
<b>22</b>	Murder of a Sleeping Beauty (Scumble River My...	11
<b>23</b>	Mystery Mile	2
<b>24</b>	Nonbook Materials: The Organization of Integr...	1
<b>25</b>	Pokemon: The Official Collector's Sticker Book	1
<b>26</b>	Q-Space (Star Trek The Next Generation, Book 47)	17
<b>27</b>	Q-Zone (Star Trek The Next Generation, Book 48)	11
<b>28</b>	Stories of an Imaginary Childhood	1
<b>29</b>	Summonings: Books of Magic, Vol. 2	2
...	...	...
<b>241041</b>	Ã?ko-Tricks und Bio-Schwindel: Damit uns Wirts...	1

	<b>Book-Title</b>	<b>num_ratings</b>
241042	Ä?koptia: Notizen und Reportagen von William ...	1
241043	Ä?ngeles fugaces (Falling Angels)	5
241044	Ä?rsringen: Roman	1
241045	Ä?tude socio-Linguistique de la segmentation s...	1
241046	Ä?Ä?. Kolumnen.	4
241047	Ä?Ä?a	1
241048	Ä?Ä?ber das Fernsehen.	3
241049	Ä?Ä?ber das VolksvermÄ?Ä¶gen. Exkurse in den I...	1
241050	Ä?Ä?ber den ProzeÄ?Ä? der Zivilisation 1.	1
241051	Ä?Ä?ber den ProzeÄ?Ä? der Zivilisation 2.	1
241052	Ä?Ä?ber den Wassern schweben.	1
241053	Ä?Ä?ber den letzten Stand der Dinge.	1
241054	Ä?Ä?ber die Freiheit.	1
241055	Ä?Ä?ber die Pflicht zum Ungehorsam gegen den S...	5
241056	Ä?Ä?ber die Regierung.	1
241057	Ä?Ä?ber mich selbst. Autobiographische Schriften.	1
241058	Ä?Ä?berall, nur nicht hier	2
241059	Ä?Ä?berallnie. AusgewÄ?Ä¶hlte Gedichte 1928 - ...	1
241060	Ä?Ä?berfall auf hoher See.	1
241061	Ä?Ä?berleben in der WÄ?Ä¼ste Danakil.	4
241062	Ä?Ä?bermorgen.	1
241063	Ä?Ä?bernachten mit Stil. Die schÄ?Ä¶nsten Coun...	1
241064	Ä?Ä?berraschung am Valentinstag.	2
241065	Ä?Ä?I- Connection.	1
241066	Ä?Ä?Ipiraten.	2
241067	Ä?Ä?rger mit Produkt X. Roman.	4
241068	Ä?Ä?sterlich leben.	1
241069	Ä?Ä?stlich der Berge.	3
241070	Ä?Ä?thique en toc	2

241071 rows × 2 columns

```
In [21]: avg_rating_df=ratings_with_name.groupby('Book-Title').mean()['Book-Rating'].re
set_index()
avg_rating_df.rename(columns={'Book-Rating':'num_ratings'},inplace=True)
avg_rating_df
```

Out[21]:

	<b>Book-Title</b>	<b>num_ratings</b>
<b>0</b>	A Light in the Storm: The Civil War Diary of ...	2.250000
<b>1</b>	Always Have Popsicles	0.000000
<b>2</b>	Apple Magic (The Collector's series)	0.000000
<b>3</b>	Ask Lily (Young Women of Faith: Lily Series, ...	8.000000
<b>4</b>	Beyond IBM: Leadership Marketing and Finance ...	0.000000
<b>5</b>	Clifford Visita El Hospital (Clifford El Gran...	0.000000
<b>6</b>	Dark Justice	10.000000
<b>7</b>	Deceived	0.000000
<b>8</b>	Earth Prayers From around the World: 365 Pray...	5.000000
<b>9</b>	Final Fantasy Anthology: Official Strategy Gu...	5.000000
<b>10</b>	Flight of Fancy: American Heiresses (Zebra Ba...	4.000000
<b>11</b>	Garfield Bigger and Better (Garfield (Numbere...	3.500000
<b>12</b>	God's Little Promise Book	4.500000
<b>13</b>	Good Wives: Image and Reality in the Lives of...	3.200000
<b>14</b>	Goosebumps Monster Edition 1: Welcome to Dead...	2.222222
<b>15</b>	Harry Potter and the Bible: The Menace Behind...	0.000000
<b>16</b>	Highland Desire (Zebra Splendor Historical Ro...	7.000000
<b>17</b>	Hiking the California Coastal Trail: Oregon t...	0.000000
<b>18</b>	It Takes Two	0.000000
<b>19</b>	LA Gallinita Roja/the Little Red Hen	0.000000
<b>20</b>	Little Comic Shop of Horrors (Give Yourself G...	1.250000
<b>21</b>	Microsoft Application Architecture For Micros...	9.000000
<b>22</b>	Murder of a Sleeping Beauty (Scumble River My...	3.181818
<b>23</b>	Mystery Mile	0.000000
<b>24</b>	Nonbook Materials: The Organization of Integr...	7.000000
<b>25</b>	Pokemon: The Official Collector's Sticker Book	0.000000
<b>26</b>	Q-Space (Star Trek The Next Generation, Book 47)	1.941176
<b>27</b>	Q-Zone (Star Trek The Next Generation, Book 48)	1.000000
<b>28</b>	Stories of an Imaginary Childhood	0.000000
<b>29</b>	Summonings: Books of Magic, Vol. 2	7.000000
...	...	...
<b>241041</b>	Ã?ko-Tricks und Bio-Schwindel: Damit uns Wirts...	0.000000

	<b>Book-Title</b>	<b>num_ratings</b>
241042	Ä?koptia: Notizen und Reportagen von William ...	4.000000
241043	Ä?ngeles fugaces (Falling Angels)	0.800000
241044	Ä?rsringen: Roman	3.000000
241045	Ä?tude socio-Linguistique de la segmentation s...	0.000000
241046	Ä?Ä?. Kolumnen.	7.250000
241047	Ä?Ä?a	10.000000
241048	Ä?Ä?ber das Fernsehen.	2.666667
241049	Ä?Ä?ber das VolksvermÄ?Ä¶gen. Exkurse in den I...	0.000000
241050	Ä?Ä?ber den ProzeÄ?Ä? der Zivilisation 1.	8.000000
241051	Ä?Ä?ber den ProzeÄ?Ä? der Zivilisation 2.	8.000000
241052	Ä?Ä?ber den Wassern schweben.	7.000000
241053	Ä?Ä?ber den letzten Stand der Dinge.	0.000000
241054	Ä?Ä?ber die Freiheit.	7.000000
241055	Ä?Ä?ber die Pflicht zum Ungehorsam gegen den S...	1.400000
241056	Ä?Ä?ber die Regierung.	0.000000
241057	Ä?Ä?ber mich selbst. Autobiographische Schriften.	8.000000
241058	Ä?Ä?berall, nur nicht hier	0.000000
241059	Ä?Ä?berallnie. AusgewÄ?Ä¶hlte Gedichte 1928 - ...	10.000000
241060	Ä?Ä?berfall auf hoher See.	7.000000
241061	Ä?Ä?berleben in der WÄ?Ä¼ste Danakil.	3.250000
241062	Ä?Ä?bermorgen.	0.000000
241063	Ä?Ä?bernachten mit Stil. Die schÄ?Ä¶nsten Coun...	8.000000
241064	Ä?Ä?berraschung am Valentinstag.	0.000000
241065	Ä?Ä?I- Connection.	0.000000
241066	Ä?Ä?Ipiraten.	0.000000
241067	Ä?Ä?rger mit Produkt X. Roman.	5.250000
241068	Ä?Ä?sterlich leben.	7.000000
241069	Ä?Ä?stlich der Berge.	2.666667
241070	Ä?Ä?thique en toc	4.000000

241071 rows × 2 columns

```
In [22]: popular_df=num_rating_df.merge(avg_rating_df,on='Book-Title')
popular_df
```

Out[22]:

	<b>Book-Title</b>	<b>num_ratings_x</b>	<b>num_ratings_y</b>
<b>0</b>	A Light in the Storm: The Civil War Diary of ...	4	2.250000
<b>1</b>	Always Have Popsicles	1	0.000000
<b>2</b>	Apple Magic (The Collector's series)	1	0.000000
<b>3</b>	Ask Lily (Young Women of Faith: Lily Series, ...	1	8.000000
<b>4</b>	Beyond IBM: Leadership Marketing and Finance ...	1	0.000000
<b>5</b>	Clifford Visita El Hospital (Clifford El Gran...	1	0.000000
<b>6</b>	Dark Justice	1	10.000000
<b>7</b>	Deceived	2	0.000000
<b>8</b>	Earth Prayers From around the World: 365 Pray...	10	5.000000
<b>9</b>	Final Fantasy Anthology: Official Strategy Gu...	4	5.000000
<b>10</b>	Flight of Fancy: American Heiresses (Zebra Ba...	2	4.000000
<b>11</b>	Garfield Bigger and Better (Garfield (Numbere...	2	3.500000
<b>12</b>	God's Little Promise Book	2	4.500000
<b>13</b>	Good Wives: Image and Reality in the Lives of...	10	3.200000
<b>14</b>	Goosebumps Monster Edition 1: Welcome to Dead...	9	2.222222
<b>15</b>	Harry Potter and the Bible: The Menace Behind...	1	0.000000
<b>16</b>	Highland Desire (Zebra Splendor Historical Ro...	1	7.000000
<b>17</b>	Hiking the California Coastal Trail: Oregon t...	1	0.000000
<b>18</b>	It Takes Two	2	0.000000
<b>19</b>	LA Gallinita Roja/the Little Red Hen	2	0.000000
<b>20</b>	Little Comic Shop of Horrors (Give Yourself G...	4	1.250000
<b>21</b>	Microsoft Application Architecture For Micros...	1	9.000000
<b>22</b>	Murder of a Sleeping Beauty (Scumble River My...	11	3.181818
<b>23</b>	Mystery Mile	2	0.000000
<b>24</b>	Nonbook Materials: The Organization of Integr...	1	7.000000
<b>25</b>	Pokemon: The Official Collector's Sticker Book	1	0.000000
<b>26</b>	Q-Space (Star Trek The Next Generation, Book 47)	17	1.941176
<b>27</b>	Q-Zone (Star Trek The Next Generation, Book 48)	11	1.000000
<b>28</b>	Stories of an Imaginary Childhood	1	0.000000
<b>29</b>	Summonings: Books of Magic, Vol. 2	2	7.000000

	Book-Title	num_ratings_x	num_ratings_y
...	...	...	...
241041	Ä?ko-Tricks und Bio-Schwindel: Damit uns Wirts...	1	0.000000
241042	Ä?kotopia: Notizen und Reportagen von William ...	1	4.000000
241043	Ä?ngeles fugaces (Falling Angels)	5	0.800000
241044	Ä?rsringen: Roman	1	3.000000
241045	Ä?tude socio-Linguistique de la segmentation s...	1	0.000000
241046	Ä?Ä?. Kolumnen.	4	7.250000
241047	Ä?Ä?a	1	10.000000
241048	Ä?Ä?ber das Fernsehen.	3	2.666667
241049	Ä?Ä?ber das VolksvermÄ?Ä¶gen. Exkurse in den l...	1	0.000000
241050	Ä?Ä?ber den ProzeÄ?Ä? der Zivilisation 1.	1	8.000000
241051	Ä?Ä?ber den ProzeÄ?Ä? der Zivilisation 2.	1	8.000000
241052	Ä?Ä?ber den Wassern schweben.	1	7.000000
241053	Ä?Ä?ber den letzten Stand der Dinge.	1	0.000000
241054	Ä?Ä?ber die Freiheit.	1	7.000000
241055	Ä?Ä?ber die Pflicht zum Ungehorsam gegen den S...	5	1.400000
241056	Ä?Ä?ber die Regierung.	1	0.000000
241057	Ä?Ä?ber mich selbst. Autobiographische Schriften.	1	8.000000
241058	Ä?Ä?berall, nur nicht hier	2	0.000000
241059	Ä?Ä?berallnie. AusgewÄ?Ä¶hlte Gedichte 1928 - ...	1	10.000000
241060	Ä?Ä?berfall auf hoher See.	1	7.000000
241061	Ä?Ä?berleben in der WÄ?Ä¼ste Danakil.	4	3.250000
241062	Ä?Ä?bermorgen.	1	0.000000
241063	Ä?Ä?bernachten mit Stil. Die schÄ?Ä¶nsten Coun...	1	8.000000
241064	Ä?Ä?berraschung am Valentinstag.	2	0.000000
241065	Ä?Ä?l- Connection.	1	0.000000
241066	Ä?Ä?lpiraten.	2	0.000000
241067	Ä?Ä?rger mit Produkt X. Roman.	4	5.250000
241068	Ä?Ä?sterlich leben.	1	7.000000
241069	Ä?Ä?stlich der Berge.	3	2.666667



	<b>Book-Title</b>	<b>num_ratings_x</b>	<b>num_ratings_y</b>
<b>241070</b>	Ã?Ã?thique en toc	2	4.000000

241071 rows × 3 columns

```
In [23]: popular_df[popular_df['num_ratings_x']>=250]
```

Out[23]:

	<b>Book-Title</b>	<b>num_ratings_x</b>	<b>num_ratings_y</b>
<b>764</b>	1984	284	4.454225
<b>818</b>	1st to Die: A Novel	509	3.575639
<b>1048</b>	2nd Chance	356	3.269663
<b>1760</b>	A Bend in the Road	346	3.364162
<b>2281</b>	A Child Called \lt\": One Child's Courage to S...	265	4.086792
<b>3988</b>	A Heartbreaking Work of Staggering Genius	302	3.423841
<b>4229</b>	A Is for Alibi (Kinsey Millhone Mysteries (Pap...	285	2.733333
<b>4808</b>	A Map of the World	327	2.492355
<b>5303</b>	A Painted House	838	3.231504
<b>5664</b>	A Prayer for Owen Meany	413	3.796610
<b>6980</b>	A Time to Kill	549	3.122040
<b>7379</b>	A Walk to Remember	378	3.399471
<b>7474</b>	A Widow for One Year	273	2.783883
<b>8434</b>	ANGELA'S ASHES	279	4.075269
<b>8752</b>	About a Boy	262	3.900763
<b>10429</b>	Airframe	332	2.900602
<b>11215</b>	All I Really Need to Know	258	2.879845
<b>11924</b>	Along Came a Spider (Alex Cross Novels)	304	3.121711
<b>12700</b>	American Gods	302	4.006623
<b>14351</b>	Angela's Ashes (MMP) : A Memoir	326	3.337423
<b>14392</b>	Angels & Demons	670	3.708955
<b>19241</b>	Back Roads	276	2.681159
<b>19780</b>	Balzac and the Little Chinese Seamstress : A N...	284	3.676056
<b>21754</b>	Bel Canto: A Novel	350	3.702857
<b>24628</b>	Black Notice	360	2.783333
<b>24758</b>	Black and Blue	263	2.794677
<b>27922</b>	Bridget Jones's Diary	815	3.527607
<b>32710</b>	Cause of Death	287	2.620209
<b>34758</b>	Chocolat	344	3.412791
<b>37121</b>	Cold Mountain : A Novel	311	3.350482
...	...	...	...
<b>204153</b>	The Reader	466	3.012876

	<b>Book-Title</b>	<b>num_ratings_x</b>	<b>num_ratings_y</b>
<b>204387</b>	The Red Tent (Bestselling Backlist)	723	4.334716
<b>204559</b>	The Rescue	308	3.243506
<b>205523</b>	The Runaway Jury	520	2.880769
<b>206502</b>	The Secret Life of Bees	774	4.447028
<b>207905</b>	The Smoke Jumper	262	3.057252
<b>209117</b>	The Street Lawyer	545	2.851376
<b>209298</b>	The Summons	655	3.432061
<b>210064</b>	The Testament	617	3.179903
<b>211384</b>	The Two Towers (The Lord of the Rings, Part 2)	260	4.880769
<b>212070</b>	The Vampire Lestat (Vampire Chronicles, Book II)	301	3.777409
<b>214050</b>	The Witching Hour (Lives of the Mayfair Witches)	274	3.281022
<b>219349</b>	Timeline	552	3.750000
<b>219741</b>	To Kill a Mockingbird	510	4.700000
<b>223135</b>	Tuesdays with Morrie: An Old Man, a Young Man,...	493	4.354970
<b>223860</b>	Two for the Dough	267	3.464419
<b>225783</b>	Unnatural Exposure	258	3.220930
<b>227701</b>	Vinegar Hill (Oprah's Book Club (Paperback))	265	2.245283
<b>227772</b>	Violets Are Blue	379	2.955145
<b>230246</b>	Watership Down	312	3.698718
<b>230513</b>	We Were the Mulvaney	342	2.868421
<b>233091</b>	When the Wind Blows	396	2.722222
<b>233370</b>	Where the Heart Is (Oprah's Book Club (Paperba...	585	4.105983
<b>233513</b>	While I Was Gone	431	2.580046
<b>233635</b>	Whispers	286	2.199301
<b>233850</b>	White Oleander : A Novel	387	3.506460
<b>233851</b>	White Oleander : A Novel (Oprah's Book Club)	356	3.772472
<b>234740</b>	Wicked: The Life and Times of the Wicked Witch...	326	3.766871
<b>234951</b>	Wild Animus	2502	1.019584
<b>240860</b>	\O\" Is for Outlaw"	269	2.988848

186 rows × 3 columns

```
In [24]: popular_df[popular_df['num_ratings_x']>=250].sort_values('num_ratings_y', ascending=False).head()
```

Out[24]:

	<b>Book-Title</b>	<b>num_ratings_x</b>	<b>num_ratings_y</b>
<b>80434</b>	Harry Potter and the Prisoner of Azkaban (Book 3)	428	5.852804
<b>80422</b>	Harry Potter and the Goblet of Fire (Book 4)	387	5.824289
<b>80441</b>	Harry Potter and the Sorcerer's Stone (Book 1)	278	5.737410
<b>80426</b>	Harry Potter and the Order of the Phoenix (Boo...	347	5.501441
<b>80414</b>	Harry Potter and the Chamber of Secrets (Book 2)	556	5.183453

```
In [25]: popular_df=popular_df.merge(books,on='Book-Title').drop_duplicates('Book-Title')[['Book-Title','Book-Author','Image-URL-M','num_ratings_x','num_ratings_y']]
```

```
In [26]: popular_df
```

Out[26]:

	<b>Book-Title</b>	<b>Book-Author</b>	<b>Image-URL-M</b>
<b>0</b>	A Light in the Storm: The Civil War Diary of ...	Karen Hesse	<a href="http://images.amazon.com/images/P/0590567330.0...">http://images.amazon.com/images/P/0590567330.0...</a>
<b>1</b>	Always Have Popsicles	Rebecca Harvin	<a href="http://images.amazon.com/images/P/0964147726.0...">http://images.amazon.com/images/P/0964147726.0...</a>
<b>2</b>	Apple Magic (The Collector's series)	Martina Boudreau	<a href="http://images.amazon.com/images/P/0942320093.0...">http://images.amazon.com/images/P/0942320093.0...</a>
<b>3</b>	Ask Lily (Young Women of Faith: Lily Series, ...	Nancy N. Rue	<a href="http://images.amazon.com/images/P/0310232546.0...">http://images.amazon.com/images/P/0310232546.0...</a>
<b>4</b>	Beyond IBM: Leadership Marketing and Finance ...	Lou Mobley	<a href="http://images.amazon.com/images/P/0962295701.0...">http://images.amazon.com/images/P/0962295701.0...</a>
<b>5</b>	Clifford Visita El Hospital (Clifford El Gran...	Norman Bridwell	<a href="http://images.amazon.com/images/P/0439188970.0...">http://images.amazon.com/images/P/0439188970.0...</a>
<b>6</b>	Dark Justice	Jack Higgins	<a href="http://images.amazon.com/images/P/0399151788.0...">http://images.amazon.com/images/P/0399151788.0...</a>
<b>7</b>	Deceived	Carla Simpson	<a href="http://images.amazon.com/images/P/0786000015.0...">http://images.amazon.com/images/P/0786000015.0...</a>
<b>8</b>	Earth Prayers From around the World: 365 Pray...	Elizabeth Roberts	<a href="http://images.amazon.com/images/P/006250746X.0...">http://images.amazon.com/images/P/006250746X.0...</a>
<b>9</b>	Final Fantasy Anthology: Official Strategy Gu...	David Cassady	<a href="http://images.amazon.com/images/P/1566869250.0...">http://images.amazon.com/images/P/1566869250.0...</a>
<b>10</b>	Flight of Fancy: American Heiresses (Zebra Ba...	Tracy Cozzens	<a href="http://images.amazon.com/images/P/082177350X.0...">http://images.amazon.com/images/P/082177350X.0...</a>
<b>11</b>	Garfield Bigger and Better (Garfield (Numbere...	Jim Davis	<a href="http://images.amazon.com/images/P/0345407709.0...">http://images.amazon.com/images/P/0345407709.0...</a>
<b>12</b>	God's Little Promise Book	Word Pub	<a href="http://images.amazon.com/images/P/0849951577.0...">http://images.amazon.com/images/P/0849951577.0...</a>

	<b>Book-Title</b>	<b>Book-Author</b>	<b>Image-URL-M</b>
<b>13</b>	Good Wives: Image and Reality in the Lives of...	Laurel Thatcher Ulrich	<a href="http://images.amazon.com/images/P/0679732578.0...">http://images.amazon.com/images/P/0679732578.0...</a>
<b>14</b>	Goosebumps Monster Edition 1: Welcome to Dead...	R. L. Stine	<a href="http://images.amazon.com/images/P/0590509950.0...">http://images.amazon.com/images/P/0590509950.0...</a>
<b>15</b>	Harry Potter and the Bible: The Menace Behind...	Richard Abanes	<a href="http://images.amazon.com/images/P/0889652015.0...">http://images.amazon.com/images/P/0889652015.0...</a>
<b>16</b>	Highland Desire (Zebra Splendor Historical Ro...	Joyce Carlow	<a href="http://images.amazon.com/images/P/0821760580.0...">http://images.amazon.com/images/P/0821760580.0...</a>
<b>17</b>	Hiking the California Coastal Trail: Oregon t...	Bob Lorentzen	<a href="http://images.amazon.com/images/P/0939431181.0...">http://images.amazon.com/images/P/0939431181.0...</a>
<b>18</b>	It Takes Two	Nancy Krlik	<a href="http://images.amazon.com/images/P/0590853112.0...">http://images.amazon.com/images/P/0590853112.0...</a>
<b>19</b>	LA Gallinita Roja/the Little Red Hen	Lucinda McQueen	<a href="http://images.amazon.com/images/P/0590449273.0...">http://images.amazon.com/images/P/0590449273.0...</a>
<b>20</b>	Little Comic Shop of Horrors (Give Yourself G...	R. L. Stine	<a href="http://images.amazon.com/images/P/059093483X.0...">http://images.amazon.com/images/P/059093483X.0...</a>
<b>21</b>	Microsoft Application Architecture For Micros...	Microsoft Corporation Staff	<a href="http://images.amazon.com/images/P/0735618372.0...">http://images.amazon.com/images/P/0735618372.0...</a>
<b>22</b>	Murder of a Sleeping Beauty (Scumble River My...	Denise Swanson	<a href="http://images.amazon.com/images/P/0451205480.0...">http://images.amazon.com/images/P/0451205480.0...</a>
<b>23</b>	Mystery Mile	Margery Allingham	<a href="http://images.amazon.com/images/P/1567230148.0...">http://images.amazon.com/images/P/1567230148.0...</a>
<b>24</b>	Nonbook Materials: The Organization of Integr...	Jean Riddle Weihs	<a href="http://images.amazon.com/images/P/0888020910.0...">http://images.amazon.com/images/P/0888020910.0...</a>
<b>25</b>	Pokemon: The Official Collector's Sticker Book	Maria S. Barbo	<a href="http://images.amazon.com/images/P/0439106591.0...">http://images.amazon.com/images/P/0439106591.0...</a>



	<b>Book-Title</b>	<b>Book-Author</b>	<b>Image-URL-M</b>
<b>26</b>	Q-Space (Star Trek The Next Generation, Book 47)	Greg Cox	<a href="http://images.amazon.com/images/P/0671019155.0...">http://images.amazon.com/images/P/0671019155.0...</a>
<b>27</b>	Q-Zone (Star Trek The Next Generation, Book 48)	Greg Cox	<a href="http://images.amazon.com/images/P/067101921X.0...">http://images.amazon.com/images/P/067101921X.0...</a>
<b>28</b>	Stories of an Imaginary Childhood	Melvin Jules Bukiet	<a href="http://images.amazon.com/images/P/0810110318.0...">http://images.amazon.com/images/P/0810110318.0...</a>
<b>29</b>	Summonings: Books of Magic, Vol. 2	John Ney Rieber	<a href="http://images.amazon.com/images/P/1563892650.0...">http://images.amazon.com/images/P/1563892650.0...</a>
...	...	...	...
<b>270265</b>	Äko-Tricks und Bio-Schwindel: Damit uns Wirts...	Adam Adler	<a href="http://images.amazon.com/images/P/3701501246.0...">http://images.amazon.com/images/P/3701501246.0...</a>
<b>270266</b>	Äkotozia: Notizen und Reportagen von William ...	Ernest Callenbach	<a href="http://images.amazon.com/images/P/3880220409.0...">http://images.amazon.com/images/P/3880220409.0...</a>
<b>270267</b>	Ängeles fugaces (Falling Angels)	Tracy Chevalier	<a href="http://images.amazon.com/images/P/8420451398.0...">http://images.amazon.com/images/P/8420451398.0...</a>
<b>270268</b>	Ärsringen: Roman	Ing-Marie Eriksson	<a href="http://images.amazon.com/images/P/9174583204.0...">http://images.amazon.com/images/P/9174583204.0...</a>
<b>270269</b>	Ätude socio-Linguistique de la segmentation s...	Inger Britt Robach	<a href="http://images.amazon.com/images/P/9140033244.0...">http://images.amazon.com/images/P/9140033244.0...</a>
<b>270270</b>	ÄÄ?. Kolumnen.	Max Goldt	<a href="http://images.amazon.com/images/P/3453137159.0...">http://images.amazon.com/images/P/3453137159.0...</a>
<b>270271</b>	ÄÄa	Stephen King	<a href="http://images.amazon.com/images/P/2226034536.0...">http://images.amazon.com/images/P/2226034536.0...</a>
<b>270272</b>	ÄÄber das Fernsehen.	Pierre Bourdieu	<a href="http://images.amazon.com/images/P/3518120549.0...">http://images.amazon.com/images/P/3518120549.0...</a>
<b>270273</b>	ÄÄber das VolksvermÄÄgen. Exkurse in den l...	Peter RÄÄhmkorf	<a href="http://images.amazon.com/images/P/3499111802.0...">http://images.amazon.com/images/P/3499111802.0...</a>

	<b>Book-Title</b>	<b>Book-Author</b>	<b>Image-URL-M</b>
<b>270274</b>	Über den Prozeß der Zivilisation 1.	Norbert Elias	<a href="http://images.amazon.com/images/P/3518277588.0...">http://images.amazon.com/images/P/3518277588.0...</a>
<b>270275</b>	Über den Prozeß der Zivilisation 2.	Norbert Elias	<a href="http://images.amazon.com/images/P/3518277596.0...">http://images.amazon.com/images/P/3518277596.0...</a>
<b>270276</b>	Über den Wassern schweben.	Ragnar Hovland	<a href="http://images.amazon.com/images/P/3426618613.0...">http://images.amazon.com/images/P/3426618613.0...</a>
<b>270277</b>	Über den letzten Stand der Dinge.	Ulrich Wickert	<a href="http://images.amazon.com/images/P/3453132254.0...">http://images.amazon.com/images/P/3453132254.0...</a>
<b>270278</b>	Über die Freiheit.	John Stuart Mill	<a href="http://images.amazon.com/images/P/3150034914.0...">http://images.amazon.com/images/P/3150034914.0...</a>
<b>270279</b>	Über die Pflicht zum Ungehorsam gegen den S...	Henry David Thoreau	<a href="http://images.amazon.com/images/P/3257700512.0...">http://images.amazon.com/images/P/3257700512.0...</a>
<b>270280</b>	Über die Regierung.	John Locke	<a href="http://images.amazon.com/images/P/315009691X.0...">http://images.amazon.com/images/P/315009691X.0...</a>
<b>270281</b>	Über mich selbst. Autobiographische Schriften.	Thomas Mann	<a href="http://images.amazon.com/images/P/3596123895.0...">http://images.amazon.com/images/P/3596123895.0...</a>
<b>270282</b>	Überall, nur nicht hier	Mona Simpson	<a href="http://images.amazon.com/images/P/3442444330.0...">http://images.amazon.com/images/P/3442444330.0...</a>
<b>270283</b>	Überallnie. Ausgewählte Gedichte 1928 - ...	Marie Luise Kaschnitz	<a href="http://images.amazon.com/images/P/3423120150.0...">http://images.amazon.com/images/P/3423120150.0...</a>
<b>270284</b>	Überfall auf hoher See.	James Cobb	<a href="http://images.amazon.com/images/P/3453210735.0...">http://images.amazon.com/images/P/3453210735.0...</a>
<b>270285</b>	Überleben in der Wüste Danakil.	Rüdiger Nehberg	<a href="http://images.amazon.com/images/P/3492218091.0...">http://images.amazon.com/images/P/3492218091.0...</a>
<b>270287</b>	Übermorgen.	Allan Folsom	<a href="http://images.amazon.com/images/P/3442424747.0...">http://images.amazon.com/images/P/3442424747.0...</a>
<b>270288</b>	Übernachten mit Stil. Die schönsten...	Christopher Fennel	<a href="http://images.amazon.com/images/P/3724303432.0...">http://images.amazon.com/images/P/3724303432.0...</a>

	<b>Book-Title</b>	<b>Book-Author</b>	<b>Image-URL-M</b>
<b>270289</b>	Ä?Ä?berraschung am Valentinstag.	Barbara Dobrick	<a href="http://images.amazon.com/images/P/3596146194.0...">http://images.amazon.com/images/P/3596146194.0...</a>
<b>270290</b>	Ä?Ä?I-Connection.	Heinz GÄ?Ä?nther Konsalik	<a href="http://images.amazon.com/images/P/3442429617.0...">http://images.amazon.com/images/P/3442429617.0...</a>
<b>270291</b>	Ä?Ä?piraten.	Janwillem van de Wetering	<a href="http://images.amazon.com/images/P/3499232499.0...">http://images.amazon.com/images/P/3499232499.0...</a>
<b>270292</b>	Ä?Ä?rger mit Produkt X. Roman.	Joan Aiken	<a href="http://images.amazon.com/images/P/325721538X.0...">http://images.amazon.com/images/P/325721538X.0...</a>
<b>270293</b>	Ä?Ä?sterlich leben.	Anselm GrÄ?Ä?n	<a href="http://images.amazon.com/images/P/3451274973.0...">http://images.amazon.com/images/P/3451274973.0...</a>
<b>270294</b>	Ä?Ä?stlich der Berge.	David Guterson	<a href="http://images.amazon.com/images/P/3442725739.0...">http://images.amazon.com/images/P/3442725739.0...</a>
<b>270295</b>	Ä?Ä?thique en toc	Didier Daeninckx	<a href="http://images.amazon.com/images/P/2842192508.0...">http://images.amazon.com/images/P/2842192508.0...</a>

241071 rows × 5 columns

In [27]: ratings\_with\_name

Out[27]:

	User-ID	ISBN	Book-Rating	Book-Title	Book-Author	Year-Of-Publication	
0	276725	034545104X	0	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
1	2313	034545104X	5	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
2	6543	034545104X	0	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
3	8680	034545104X	5	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
4	10314	034545104X	9	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
5	23768	034545104X	0	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
6	28266	034545104X	0	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
7	28523	034545104X	0	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
8	39002	034545104X	0	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
9	50403	034545104X	9	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
10	56157	034545104X	0	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
11	59102	034545104X	0	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
12	59287	034545104X	0	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
13	63970	034545104X	8	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
14	77480	034545104X	8	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
15	77940	034545104X	0	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
16	81977	034545104X	0	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
17	94362	034545104X	5	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine

	User-ID	ISBN	Book-Rating	Book-Title	Book-Author	Year-Of-Publication	
18	98391	034545104X	9	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
19	112199	034545104X	6	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
20	115435	034545104X	5	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
21	123981	034545104X	0	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
22	128045	034545104X	7	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
23	128276	034545104X	5	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
24	129311	034545104X	7	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
25	132081	034545104X	0	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
26	133235	034545104X	0	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
27	135045	034545104X	0	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
28	138543	034545104X	0	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
29	144315	034545104X	0	Flesh Tones: A Novel	M. J. Rose	2002	Ballantine
...	...	...	...	...	...	...	...
1031106	276680	0312324766	0	The Men We Became : My Friendship with John F....	Robert T. Littell	2004	St. Martin'
1031107	276680	0452267943	0	Bellefleur	Joyce Carol Oates	1991	Plume Bo
1031108	276680	0671516949	7	A MARRIAGE MADE AT WOODSTOCK	Cathie Pelletier	1995	Washingtc Press
1031109	276680	067179387X	9	The WEIGHT OF WINTER	Cathie Pelletier	1993	Washingtc Press

	User-ID	ISBN	Book-Rating	Book-Title	Book-Author	Year-Of-Publication	
<b>1031110</b>	276680	0671883917	0	VERA	Elizabeth Von arnim	1995	Washingtc Press
<b>1031111</b>	276680	0743257502	0	The Glory Cloak : A Novel of Louisa May Alcott...	Patricia O'Brien	2004	Touchston
<b>1031112</b>	276680	0767409752	0	A Guided Tour of Rene Descartes' Meditations o...	Christopher Biffle	2000	McGraw-H Humanitie Sciences/
<b>1031113</b>	276680	0785263195	0	If It's Not Close, They Can't Cheat: Crushing ...	Hugh Hewitt	2004	Nelson Bc
<b>1031114</b>	276680	0802141358	0	The Mammoth Cheese	Sheri Holman	2004	Grove Pre
<b>1031115</b>	276680	0812881311	0	Streets of Gold	Evan Hunter	1985	Madison E
<b>1031116</b>	276680	0865055041	0	Kitchen (Historic Communities (Paperback))	Bobbie Kalman	1990	Crabtree F Company
<b>1031117</b>	276680	086505505X	0	Home Crafts (Historic Communities (Paperback))	Bobbie Kalman	1990	Crabtree F Company
<b>1031118</b>	276680	1564407284	0	The Old Sturbridge Village Cookbook, 2nd : Aut...	Caroline Sloat	1995	Globe Pec
<b>1031119</b>	276680	1582343594	0	City of Masks : A Cree Black Novel	Daniel Hecht	2004	Bloomsbu
<b>1031120</b>	276681	0140290788	9	Time Out Chicago (Time Out Chicago)	Time Out	2000	Penguin E
<b>1031121</b>	276681	0609806491	7	The Zen of Proposal Writing: An Expert's Stres...	Kitta Reeds	2002	Three Riv (CA)

	User-ID	ISBN	Book-Rating	Book-Title	Book-Author	Year-Of-Publication	
1031122	276681	0764504444	0	Access 2000 for Windows for Dummies	John Kaufeld	1999	For Dumm
1031123	276681	1931333246	10	Chorus	Kurt Messick	2003	Dry Bones
1031124	276683	0316185922	5	The River Cafe Wine Primer	Joseph Delissio	2000	Little, Bro
1031125	276688	0060164220	0	Coyote Waits	Tony Hillerman	1990	Harpercoll
1031126	276688	0060168307	0	Sacred Clowns	Tony Hillerman	1994	Harpercoll
1031127	276688	0312264186	8	You Can't Catch Death: A Daughter's Memoir	Ilanthe Brautigan	2001	St. Martin'
1031128	276688	0385471092	0	Mrs. Pollifax and the Second Thief	Dorothy Gilman	1993	Doubleday
1031129	276688	0425150526	0	Death Crosses the Border	Janice Steinberg	1995	Berkley Pi Group
1031130	276688	0449907422	0	Jazz Funeral: A Skip Langdon Novel	Julie Smith	1993	Ballantine
1031131	276688	0517145553	0	Mostly Harmless	Douglas Adams	1995	Random H Value Pub
1031132	276688	1575660792	7	Gray Matter	Shirley Kennett	1996	Kensington Publishing Corporatic
1031133	276690	0590907301	0	Triplet Trouble and the Class Trip (Triplet Tr...	Debbie Dadey	1997	Apple
1031134	276704	0679752714	0	A Desert of Pure Feeling (Vintage Contemporaries)	Judith Freeman	1997	Vintage B
1031135	276704	0806917695	5	Perplexing Lateral Thinking Puzzles: Scholasti...	Paul Sloane	1997	Sterling P

1031136 rows × 10 columns



```
In [28]: x=ratings_with_name.groupby('User-ID').count()['Book-Rating']>200
         educated_users=x[x].index
```

```
In [29]: filtered_rating=ratings_with_name[ratings_with_name['User-ID'].isin(educated_u
         sers)]
```

```
In [31]: y=filtered_rating.groupby('Book-Title').count()['Book-Rating']>=50
         famous_books=y[y].index
```

```
In [32]: famous_books
```

```
Out[32]: Index(['1984', '1st to Die: A Novel', '2nd Chance', '4 Blondes',
              'A Bend in the Road', 'A Case of Need',
              'A Child Called \It\": One Child's Courage to Survive"',
              'A Civil Action', 'A Day Late and a Dollar Short', 'A Fine Balance',
              ...,
              'Winter Solstice', 'Wish You Well', 'Without Remorse',
              'Wizard and Glass (The Dark Tower, Book 4)', 'Wuthering Heights',
              'Year of Wonders', 'You Belong To Me',
              'Zen and the Art of Motorcycle Maintenance: An Inquiry into Values',
              'Zoya', '\0" Is for Outlaw"'],
              dtype='object', name='Book-Title', length=706)
```

```
In [35]: final_ratings=filtered_rating[filtered_rating['Book-Title'].isin(famous_book
         s)]
```

```
In [36]: final_ratings.drop_duplicates()
```

Out[36]:

	User-ID	ISBN	Book-Rating	Book-Title	Book-Author	Year-Of-Publication	Publisher
<b>63</b>	278418	0446520802	0	The Notebook	Nicholas Sparks	1996	Warner Books
<b>65</b>	3363	0446520802	0	The Notebook	Nicholas Sparks	1996	Warner Books
<b>66</b>	7158	0446520802	10	The Notebook	Nicholas Sparks	1996	Warner Books
<b>69</b>	11676	0446520802	10	The Notebook	Nicholas Sparks	1996	Warner Books
<b>74</b>	23768	0446520802	6	The Notebook	Nicholas Sparks	1996	Warner Books
<b>77</b>	27617	0446520802	9	The Notebook	Nicholas Sparks	1996	Warner Books
<b>78</b>	28204	0446520802	0	The Notebook	Nicholas Sparks	1996	Warner Books
<b>79</b>	29855	0446520802	0	The Notebook	Nicholas Sparks	1996	Warner Books
<b>81</b>	30711	0446520802	6	The Notebook	Nicholas Sparks	1996	Warner Books
<b>82</b>	32440	0446520802	0	The Notebook	Nicholas Sparks	1996	Warner Books
<b>83</b>	33974	0446520802	0	The Notebook	Nicholas Sparks	1996	Warner Books
<b>95</b>	85993	0446520802	10	The Notebook	Nicholas Sparks	1996	Warner Books
<b>100</b>	102967	0446520802	0	The Notebook	Nicholas Sparks	1996	Warner Books
<b>102</b>	105979	0446520802	0	The Notebook	Nicholas Sparks	1996	Warner Books
<b>105</b>	115490	0446520802	0	The Notebook	Nicholas Sparks	1996	Warner Books
<b>111</b>	135831	0446520802	0	The Notebook	Nicholas Sparks	1996	Warner Books
<b>121</b>	153718	0446520802	7	The Notebook	Nicholas Sparks	1996	Warner Books
<b>122</b>	154992	0446520802	8	The Notebook	Nicholas Sparks	1996	Warner Books

	User-ID	ISBN	Book-Rating	Book-Title	Book-Author	Year-Of-Publication	Publisher
<b>124</b>	158295	0446520802	8	The Notebook	Nicholas Sparks	1996	Warner Books
<b>125</b>	159033	0446520802	0	The Notebook	Nicholas Sparks	1996	Warner Books
<b>127</b>	169699	0446520802	8	The Notebook	Nicholas Sparks	1996	Warner Books
<b>131</b>	181687	0446520802	9	The Notebook	Nicholas Sparks	1996	Warner Books
<b>132</b>	185233	0446520802	7	The Notebook	Nicholas Sparks	1996	Warner Books
<b>135</b>	188010	0446520802	0	The Notebook	Nicholas Sparks	1996	Warner Books
<b>138</b>	194669	0446520802	0	The Notebook	Nicholas Sparks	1996	Warner Books
<b>140</b>	200226	0446520802	9	The Notebook	Nicholas Sparks	1996	Warner Books
<b>141</b>	201017	0446520802	0	The Notebook	Nicholas Sparks	1996	Warner Books
<b>144</b>	203240	0446520802	0	The Notebook	Nicholas Sparks	1996	Warner Books
<b>145</b>	208671	0446520802	9	The Notebook	Nicholas Sparks	1996	Warner Books
<b>146</b>	208829	0446520802	0	The Notebook	Nicholas Sparks	1996	Warner Books
...	...	...	...	...	...	...	...
<b>1011607</b>	241980	0613025024	10	Desperation	Stephen King	1999	Sagebrush Bound
<b>1011609</b>	241980	0613171004	9	Bag of Bones	Stephen King	1999	Sagebrush Bound
<b>1011892</b>	258534	0451186125	9	Insomnia	Stephen King	1995	Dutton Books
<b>1014227</b>	245827	0842319662	0	Journey	Myrna Grant	0	Tyndale House Publishers
<b>1014499</b>	245963	0345283651	0	Southern Cross	Terry Coleman	1980	Ballantine Books

	User-ID	ISBN	Book-Rating	Book-Title	Book-Author	Year-Of-Publication	Publisher
<b>1014579</b>	245963	0380781506	0	Remember Me	Danice Allen	1996	Harper Mass Market Paperback (Mm)
<b>1014580</b>	246671	0380781506	0	Remember Me	Danice Allen	1996	Harper Mass Market Paperback (Mm)
<b>1014581</b>	252071	0380781506	0	Remember Me	Danice Allen	1996	Harper Mass Market Paperback (Mm)
<b>1015968</b>	247429	073940086X	0	Mirror Image	Danielle Steel	0	Delacorte Press
<b>1016664</b>	248718	031202164X	8	Ashes to Ashes	Mary Monica Pulver	1988	Horizon Book Promotion
<b>1018115</b>	250405	0399144781	0	Southern Cross	Patricia Daniels Cornwell	1999	Putnam Pub Group
<b>1019130</b>	251613	0553471759	0	Coming Home	ROSAMUNDE PILCHER	1995	Random House Audio
<b>1019982</b>	252848	0590325183	0	Secrets	Deborah Aytz	1981	Scholastic
<b>1020500</b>	254206	555053150X	9	Christine	Stephen King	1983	Viking Books
<b>1021217</b>	255218	0375704167	0	Timeline	MICHAEL CRICHTON	2000	Random House Large Print
<b>1021640</b>	256167	038524813X	0	Mercy	David L. Lindsey	1990	Bantam Dell Pub Group
<b>1021641</b>	270820	038524813X	0	Mercy	David L. Lindsey	1990	Bantam Dell Pub Group

	User-ID	ISBN	Book-Rating	Book-Title	Book-Author	Year-Of-Publication	Publisher
1021788	256407	0671047930	0	Heartbreaker	Julie Garwood	2000	Simon & Schuster Audio
1023677	260897	0590406280	0	Journey	Joyce Carol Thomas	1990	Scholastic Paperback (Mm)
1025257	263877	0451211081	0	A Day Late and a Dollar Short	Terry McMillan	2004	New American Library
1025261	263877	0613335864	0	False Memory	Dean Koontz	2001	Sagebrush Bound
1025321	264082	0821750666	0	Paradise	Phoebe Conn	1995	Zebra Books
1025418	264317	0613224450	0	Still Waters	Tami Hoag	1992	Sagebrush Bound
1025422	264317	0833563505	0	The Queen of the Damned (Vampire Chronicles (P...	Anne Rice	1999	Sagebrush Bound
1025428	264317	B000234N76	0	Falling Angels	Tracy Chevalier	2001	E P Dutton
1026724	266865	0531001725	10	The Catcher in the Rye	Jerome David Salinger	1973	Scholastic Library Pu
1027923	269566	0670809381	0	Echoes	Maeve Binchy	1986	Penguin USA
1028777	271284	0440910927	0	The Rainmaker	John Grisham	1995	Island
1029070	271705	B0001PIOX4	0	Fahrenheit 451	Ray Bradbury	1993	Simon & Schuster
1030868	275970	1586210661	9	Me Talk Pretty One Day	David Sedaris	2001	Time Warner Audio Major

58586 rows × 10 columns

```
In [38]: pt=final_ratings.pivot_table(index='Book-Title',columns='User-ID',values='Book-  
-Rating')
```

```
In [43]: pt.fillna(0,inplace=True)
```

In [44]: pt



Out[44]:

User-ID	254	2276	2766	2977	3363	4017	4385	6251	6323	6543	...	271705	27
Book-Title													
<b>1984</b>	9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	...	10.0	0.0
<b>1st to Die: A Novel</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.0	...	0.0	0.0
<b>2nd Chance</b>	0.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	...	0.0	0.0
<b>4 Blondes</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	...	0.0	0.0
<b>A Bend in the Road</b>	0.0	0.0	7.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	...	0.0	0.0
<b>A Case of Need</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	...	0.0	0.0
<b>A Child Called It: One Child's Courage to Survive"</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	...	0.0	0.0
<b>A Civil Action</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	...	0.0	0.0
<b>A Day Late and a Dollar Short</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	...	0.0	0.0
<b>A Fine Balance</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	...	0.0	0.0
<b>A Great Deliverance</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	...	0.0	0.0
<b>A Heartbreaking Work of Staggering Genius</b>	0.0	0.0	0.0	3.0	0.0	0.0	0.0	4.0	0.0	0.0	...	0.0	0.0
<b>A Is for Alibi (Kinsey Millhone Mysteries (Paperback))</b>	0.0	0.0	7.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	...	0.0	0.0
<b>A Lesson Before Dying (Vintage Contemporaries (Paperback))</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	...	0.0	6.0
<b>A Man Named Dave: A Story of Triumph and Forgiveness</b>	0.0	0.0	0.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	...	0.0	0.0

User-ID	254	2276	2766	2977	3363	4017	4385	6251	6323	6543	...	271705	27
Book-Title													
<b>A Man in Full</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	...	0.0	0.0
<b>A Map of the World</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	...	0.0	0.0
<b>A Painted House</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	...	0.0	0.0
<b>A Patchwork Planet</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	...	0.0	0.0
<b>A Prayer for Owen Meany</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	...	0.0	0.0
<b>A Thin Dark Line (Mysteries &amp; Horror)</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	...	0.0	0.0
<b>A Thousand Acres (Ballantine Reader's Circle)</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	...	0.0	0.0
<b>A Time to Kill</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	...	0.0	0.0
<b>A Virtuous Woman (Oprah's Book Club (Paperback))</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	...	0.0	0.0
<b>A Walk to Remember</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	...	0.0	0.0
<b>A Widow for One Year</b>	0.0	0.0	0.0	0.0	0.0	10.0	0.0	0.0	0.0	0.0	...	0.0	0.0
<b>A Wrinkle In Time</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	0.0	0.0	...	0.0	0.0
<b>A Wrinkle in Time</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	0.0	0.0	...	0.0	0.0
<b>A Year in Provence</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.0	0.0	0.0	...	0.0	0.0
<b>ANGELA'S ASHES</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	...	0.0	0.0
...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>We'll Meet Again</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	...	0.0	0.0

User-ID	254	2276	2766	2977	3363	4017	4385	6251	6323	6543	...	271705	27
Book-Title													
<b>Weep No More My Lady</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	...	0.0	0.0
<b>Welcome to Temptation</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	...	0.0	0.0
<b>Welcome to the World, Baby Girl!</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	...	0.0	0.0
<b>What Looks Like Crazy On An Ordinary Day</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	...	0.0	0.0
<b>What to Expect When You're Expecting (Revised Edition)</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	...	0.0	0.0
<b>When the Wind Blows</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	...	0.0	0.0
<b>Where the Heart Is (Oprah's Book Club (Paperback))</b>	0.0	0.0	0.0	0.0	10.0	0.0	0.0	0.0	0.0	0.0	...	0.0	0.0
<b>Where the Red Fern Grows</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	...	0.0	0.0
<b>While I Was Gone</b>	0.0	0.0	0.0	0.0	0.0	10.0	0.0	0.0	0.0	0.0	...	0.0	0.0
<b>While My Pretty One Sleeps</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	...	0.0	0.0
<b>Whirlwind (Tyler, Book 1)</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	...	0.0	0.0
<b>Whispers</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	...	0.0	0.0
<b>White Oleander : A Novel</b>	0.0	0.0	0.0	7.0	0.0	0.0	0.0	8.0	0.0	0.0	...	0.0	0.0
<b>White Oleander : A Novel (Oprah's Book Club)</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	...	0.0	0.0
<b>White Teeth: A Novel</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	...	0.0	0.0

User-ID	254	2276	2766	2977	3363	4017	4385	6251	6323	6543	...	271705	27
Book-Title													
<b>Wicked: The Life and Times of the Wicked Witch of the West</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	...	0.0	0.0
<b>Wifey</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	...	0.0	0.0
<b>Wild Animus</b>	0.0	0.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	...	0.0	0.0
<b>Winter Moon</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	...	0.0	0.0
<b>Winter Solstice</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	...	0.0	0.0
<b>Wish You Well</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	...	0.0	0.0
<b>Without Remorse</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	...	0.0	0.0
<b>Wizard and Glass (The Dark Tower, Book 4)</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	...	0.0	0.0
<b>Wuthering Heights</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	...	0.0	0.0
<b>Year of Wonders</b>	0.0	0.0	0.0	7.0	0.0	0.0	0.0	0.0	0.0	0.0	...	0.0	9.0
<b>You Belong To Me</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	...	0.0	0.0
<b>Zen and the Art of Motorcycle Maintenance: An Inquiry into Values</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	...	0.0	0.0
<b>Zoya</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	...	0.0	0.0
<b>"Is for Outlaw"</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	...	0.0	0.0

706 rows × 810 columns

```
In [45]: from sklearn.metrics.pairwise import cosine_similarity
```

```
In [47]: similarity_score=cosine_similarity(pt)
```

```
In [48]: similarity_score.shape
```

```
Out[48]: (706, 706)
```

```
In [62]: def recommend(book_name):  
         #index fetch  
         index=np.where(pt.index==book_name)[0][0]  
         similar_items=sorted(list(enumerate(similarity_score[index])),key=lambda  
         x:x[1],reverse=True)[1:6]  
         for i in similar_items:  
             print(pt.index[i[0]])
```

```
In [68]: recommend('A Time to Kill')
```

```
The Pelican Brief  
The Client  
The Firm  
The Chamber  
The Rainmaker
```

```
In [65]: pt.index[545]
```

```
Out[65]: "The Handmaid's Tale"
```