## Sorting Pandas DataFrame\_Series

## November 16, 2016

```
In [1]: import pandas as pd
In [2]: movies = pd.read_csv('http://bit.ly/imdbratings')
In [3]: movies.head()
Out [3]:
           star_rating
                                            title content_rating
                                                                    genre
                                                                           duration
        0
                   9.3
                        The Shawshank Redemption
                                                                    Crime
                                                                                142
        1
                   9.2
                                    The Godfather
                                                               R
                                                                    Crime
                                                                                175
        2
                   9.1
                          The Godfather: Part II
                                                                    Crime
                                                                                200
                                                               R
                   9.0
                                  The Dark Knight
        3
                                                          PG-13 Action
                                                                                152
                   8.9
                                     Pulp Fiction
                                                                                154
                                                                    Crime
                                                  actors list
          [u'Tim Robbins', u'Morgan Freeman', u'Bob Gunt...
             [u'Marlon Brando', u'Al Pacino', u'James Caan']
        1
        2 [u'Al Pacino', u'Robert De Niro', u'Robert Duv...
        3 [u'Christian Bale', u'Heath Ledger', u'Aaron E...
           [u'John Travolta', u'Uma Thurman', u'Samuel L...
In [6]: # if you just wanted to just see the Series in sorted order
        # you can also use movies['title'].sort_values()
        movies.title.sort_values() # 'Title' series sorted
Out[6]: 542
                               (500) Days of Summer
        5
                                       12 Angry Men
        201
                                   12 Years a Slave
        698
                                          127 Hours
        110
                              2001: A Space Odyssey
        910
                                               2046
        596
                                           21 Grams
        624
                                          25th Hour
        708
                                   28 Days Later...
        60
                                           3 Idiots
        225
                                             3-Iron
        570
                                                300
        555
                                       3:10 to Yuma
                      4 Months, 3 Weeks and 2 Days
        427
```

824	42				
597	50/50				
203	8 1/2				
170	A Beautiful Mind				
941	A Bridge Too Far				
571	A Bronx Tale				
266	A Christmas Story				
86	A Clockwork Orange				
716	A Few Good Men				
750	A Fish Called Wanda				
276	A Fistful of Dollars				
612	A Hard Day's Night				
883	A History of Violence				
869	A Nightmare on Elm Street				
865	A Nightmare on Eim Street  A Perfect World				
426	A Prophet				
120	n Hophee				
207	What Ever Happened to Baby Jane?				
562					
719	What's Eating Gilbert Grape				
649	When Harry Met Sally				
	Where Eagles Dare				
33	Whiplash				
669	Who Framed Roger Rabbit				
219	Who's Afraid of Virginia Woolf?				
127					
497	Willy Wonka & the Chocolate Factory				
270	Wings of Desire				
483	Withnail & I				
920	Witness				
65	Witness for the Prosecution				
970	Wonder Boys				
518	Wreck-It Ralph				
954	X-Men				
248	X-Men: Days of Future Past				
532	X-Men: First Class				
871	X2				
695	Y Tu Mama Tambien				
403	Ying xiong				
235	Yip Man				
96	Yojimbo				
280	Young Frankenstein				
535	Zelig				
955	Zero Dark Thirty				
677	Zodiac				
615	Zodiac				
526	Zulu				
864	[Rec]				
	title, dtype: object				
manie:	erere' aclibe. Onlece				

```
In [8]: type(movies.title.sort_values()) # type is a Series
Out[8]: pandas.core.series.Series
In [9]: movies.title.sort_values(ascending=False) # descending order
Out[9]: 864
                                               [Rec]
        526
                                                Zulu
                                          Zombieland
        615
        677
                                              Zodiac
        955
                                    Zero Dark Thirty
        535
                                               Zeliq
        280
                                 Young Frankenstein
        96
                                             Yojimbo
        235
                                             Yip Man
        403
                                          Ying xiong
        695
                                  Y Tu Mama Tambien
        871
                                                  X2
        532
                                 X-Men: First Class
        248
                         X-Men: Days of Future Past
        954
                                               X-Men
        518
                                     Wreck-It Ralph
        970
                                         Wonder Boys
        65
                        Witness for the Prosecution
        920
                                             Witness
        483
                                        Withnail & I
        270
                                    Wings of Desire
        497
               Willy Wonka & the Chocolate Factory
                                  Wild Strawberries
        127
        219
                    Who's Afraid of Virginia Woolf?
        669
                            Who Framed Roger Rabbit
        33
                                            Whiplash
        649
                                  Where Eagles Dare
        719
                            When Harry Met Sally...
        562
                        What's Eating Gilbert Grape
        207
                  What Ever Happened to Baby Jane?
                                . . .
        426
                                           A Prophet
        865
                                    A Perfect World
        869
                          A Nightmare on Elm Street
        883
                              A History of Violence
        612
                                 A Hard Day's Night
        276
                               A Fistful of Dollars
        750
                                A Fish Called Wanda
        716
                                      A Few Good Men
        86
                                 A Clockwork Orange
        266
                                  A Christmas Story
        571
                                       A Bronx Tale
```

A Bridge Too Far	941
A Beautiful Mind	170
8 1/2	203
50/50	597
42	824
4 Months, 3 Weeks and 2 Days	427
3:10 to Yuma	555
300	570
3-Iron	225
3 Idiots	60
28 Days Later	708
25th Hour	624
21 Grams	596
2046	910
2001: A Space Odyssey	110
127 Hours	698
12 Years a Slave	201
12 Angry Men	5
(500) Days of Summer	542

Name: title, dtype: object

In [10]: movies.sort\_values('title') # if you wanted to sort the column

\	content_rating	title	star_rating	Out[10]:
	PG-13	(500) Days of Summer	7.8	542
	NOT RATED	12 Angry Men	8.9	5
	R	12 Years a Slave	8.1	201
	R	127 Hours	7.6	698
	G	2001: A Space Odyssey	8.3	110
	R	2046	7.5	910
	R	21 Grams	7.7	596
	R	25th Hour	7.7	624
	R	28 Days Later	7.6	708
	PG-13	3 Idiots	8.5	60
	R	3-Iron	8.1	225
	R	300	7.8	570
	R	3:10 to Yuma	7.8	555
	NOT RATED	4 Months, 3 Weeks and 2 Days	7.9	427
	PG-13	42	7.5	824
	R	50/50	7.7	597
	NOT RATED	8 1/2	8.1	203
	PG-13	A Beautiful Mind	8.2	170
	PG	A Bridge Too Far	7.4	941
	R	A Bronx Tale	7.8	571
	PG	A Christmas Story	8.1	266
	X	A Clockwork Orange	8.4	86
	R	A Few Good Men	7.6	716
	R	A Fish Called Wanda	7.6	750

```
883
              7.5
                                  A History of Violence
                                                                        R
869
              7.5
                              A Nightmare on Elm Street
                                                                        R
865
                                         A Perfect World
              7.5
                                                                    PG-13
426
              7.9
                                               A Prophet
                                                                        R
. .
              . . .
                                                      . . .
                                                                      . . .
207
              8.1
                      What Ever Happened to Baby Jane?
                                                                APPROVED
562
              7.8
                            What's Eating Gilbert Grape
                                                                    PG-13
719
              7.6
                                When Harry Met Sally...
                                                                        R
              7.7
649
                                      Where Eagles Dare
                                                                      NaN
33
              8.6
                                                Whiplash
                                                                        R
              7.7
669
                                Who Framed Roger Rabbit
                                                                       ΡG
                       Who's Afraid of Virginia Woolf?
              8.1
219
                                                                    TV-MA
              8.3
127
                                      Wild Strawberries
                                                                  UNRATED
497
             7.8
                   Willy Wonka & the Chocolate Factory
                                                                        G
270
             8.1
                                         Wings of Desire
                                                                    PG-13
             7.8
483
                                            Withnail & I
                                                                        R
920
             7.5
                                                 Witness
                                                                        R
65
              8.4
                            Witness for the Prosecution
                                                                APPROVED
970
              7.4
                                             Wonder Boys
                                                                        R
518
              7.8
                                          Wreck-It Ralph
                                                                       ΡG
                                                   X-Men
954
             7.4
                                                                    PG-13
248
              8.1
                             X-Men: Days of Future Past
                                                                    PG-13
532
              7.8
                                      X-Men: First Class
                                                                    PG-13
              7.5
871
                                                       X2
                                                                    PG-13
              7.7
695
                                      Y Tu Mama Tambien
                                                                        R
403
              7.9
                                              Ying xiong
                                                                    PG-13
              8.1
235
                                                 Yip Man
                                                                        R
96
              8.4
                                                 Yojimbo
                                                                  UNRATED
280
              8.1
                                     Young Frankenstein
                                                                       PG
535
              7.8
                                                                       РG
                                                    Zeliq
955
              7.4
                                        Zero Dark Thirty
                                                                        R
677
              7.7
                                                   Zodiac
                                                                        R
615
              7.7
                                              Zombieland
                                                                        R
              7.8
526
                                                     Zulu
                                                                  UNRATED
864
              7.5
                                                    [Rec]
                                                                        R
                                                                     actors_lis
         genre
                 duration
                            [u'Zooey Deschanel', u'Joseph Gordon-Levitt', ...
542
        Comedy
                       95
5
                            [u'Henry Fonda', u'Lee J. Cobb', u'Martin Bals.
         Drama
                       96
                            [u'Chiwetel Ejiofor', u'Michael Kenneth Willia.
201
     Biography
                      134
698
     Adventure
                       94
                            [u'James Franco', u'Amber Tamblyn', u'Kate Mara
                            [u'Keir Dullea', u'Gary Lockwood', u'William S.
110
       Mystery
                      160
910
         Drama
                      129
                            [u'Tony Chiu Wai Leung', u'Ziyi Zhang', u'Faye.
596
         Crime
                      124
                            [u'Sean Penn', u'Benicio Del Toro', u'Naomi Wa...
624
         Crime
                      135
                            [u'Edward Norton', u'Barry Pepper', u'Philip S.
708
        Horror
                      113
                            [u'Cillian Murphy', u'Naomie Harris', u'Christ.
```

A Fistful of Dollars

A Hard Day's Night

R

APPROVED

276

612

8.1

7.7

```
60
                      170
                                  [u'Aamir Khan', u'Madhavan', u'Mona Singh
        Comedy
225
         Crime
                       88
                           [u'Seung-yeon Lee', u'Hyun-kyoon Lee', u'Hyuk-...
570
                      117
                           [u'Gerard Butler', u'Lena Headey', u'David Wen.
        Action
555
                      122
                           [u'Russell Crowe', u'Christian Bale', u'Ben Fo.
     Adventure
427
         Drama
                      113
                           [u'Anamaria Marinca', u'Vlad Ivanov', u'Laura ...
824
                           [u'Chadwick Boseman', u'T.R. Knight', u'Harris.
     Biography
                      128
597
        Comedy
                      100
                           [u'Joseph Gordon-Levitt', u'Seth Rogen', u'Ann.
203
         Drama
                      138
                           [u'Marcello Mastroianni', u'Anouk Aim\xe9e', u.
170
                           [u'Russell Crowe', u'Ed Harris', u'Jennifer Co.
     Biography
                      135
941
         Drama
                      175
                           [u'Sean Connery', u"Ryan O'Neal", u'Michael Ca.
                           [u'Robert De Niro', u'Chazz Palminteri', u'Lil.
571
                      121
         Crime
266
                           [u'Peter Billingsley', u'Melinda Dillon', u'Da.
        Comedy
                       94
86
                           [u'Malcolm McDowell', u'Patrick Magee', u'Mich.
         Crime
                      136
716
         Drama
                      138
                           [u'Tom Cruise', u'Jack Nicholson', u'Demi Moore
750
        Comedy
                      108
                           [u'John Cleese', u'Jamie Lee Curtis', u'Kevin ...
276
                       99
                           [u'Clint Eastwood', u'Gian Maria Volont\xe9', ...
        Action
612
                       87
                           [u'John Lennon', u'Paul McCartney', u'George H.
        Comedy
883
                           [u'Viggo Mortensen', u'Maria Bello', u'Ed Harr.
         Crime
                       96
869
                       91
                           [u'Heather Langenkamp', u'Johnny Depp', u'Robe.
        Horror
865
                      138
                           [u'Kevin Costner', u'Clint Eastwood', u'Laura ...
         Crime
426
         Crime
                      155
                           [u'Tahar Rahim', u'Niels Arestrup', u'Adel Ben.
. .
           . . .
                      . . .
207
         Drama
                      134
                           [u'Bette Davis', u'Joan Crawford', u'Victor Bu...
562
         Drama
                      118
                           [u'Johnny Depp', u'Leonardo DiCaprio', u'Julie.
719
                       96
                           [u'Billy Crystal', u'Meg Ryan', u'Carrie Fisher
        Comedy
649
                      158
                           [u'Richard Burton', u'Clint Eastwood', u'Mary ...
        Action
                           [u'Miles Teller', u'J.K. Simmons', u'Melissa B.
33
                      107
         Drama
669
     Animation
                      104
                           [u'Bob Hoskins', u'Christopher Lloyd', u'Joann.
219
         Drama
                      131
                           [u'Elizabeth Taylor', u'Richard Burton', u'Geo...
127
                       91
                           [u'Victor Sj\xf6str\xf6m', u'Bibi Andersson', ...
         Drama
497
                      100
                           [u'Gene Wilder', u'Jack Albertson', u'Peter Os.
        Family
270
                      128
                           [u'Bruno Ganz', u'Solveig Dommartin', u'Otto S.
         Drama
                           [u'Richard E. Grant', u'Paul McGann', u'Richar.
483
        Comedy
                      107
920
                      112
                           [u'Harrison Ford', u'Kelly McGillis', u'Lukas ...
         Crime
65
                      116
                           [u'Tyrone Power', u'Marlene Dietrich', u'Charl.
         Crime
970
         Drama
                      107
                           [u'Michael Douglas', u'Tobey Maguire', u'Franc.
518
     Animation
                      101
                           [u'John C. Reilly', u'Jack McBrayer', u'Jane L.
954
                      104
                           [u'Patrick Stewart', u'Hugh Jackman', u'Ian Mc.
        Action
248
        Action
                      131
                           [u'Patrick Stewart', u'Ian McKellen', u'Hugh J.
532
                      132
                           [u'James McAvoy', u'Michael Fassbender', u'Jen.
        Action
871
        Action
                      134
                           [u'Patrick Stewart', u'Hugh Jackman', u'Halle ...
695
                      106
                           [u'Maribel Verd\xfa', u'Gael Garc\xeda Bernal'...
         Drama
403
                       99
                           [u'Jet Li', u'Tony Chiu Wai Leung', u'Maggie C.
        Action
235
        Action
                      106
                              [u'Donnie Yen', u'Simon Yam', u'Siu-Wong Fan'
96
        Action
                      110
                           [u'Toshir\xf4 Mifune', u'Eijir\xf4 T\xf4no', u...
280
        Comedy
                      106
                           [u'Gene Wilder', u'Madeline Kahn', u'Marty Fel.
535
        Comedy
                       79
                           [u'Woody Allen', u'Mia Farrow', u'Patrick Horg.
955
                      157
                           [u'Jessica Chastain', u'Joel Edgerton', u'Chri...
         Drama
```

```
677
                                    [u'Jake Gyllenhaal', u'Robert Downey Jr.', u'M.
                  Crime
                               157
                                   [u'Jesse Eisenberg', u'Emma Stone', u'Woody Ha...
         615
                 Comedy
                                88
         526
                               138
                                    [u'Stanley Baker', u'Jack Hawkins', u'Ulla Jac.
                  Drama
         864
                                78
                                    [u'Manuela Velasco', u'Ferran Terraza', u'Jorg.
                 Horror
         [979 rows x 6 columns]
In [12]: movies.sort_values(['star_rating'])
Out [12]:
              star_rating
                                                                           title \
                                                                    Wall Street
         978
                       7.4
         950
                       7.4
                                                                           Bound
         949
                       7.4
                                                                     Home Alone
         948
                       7.4
                                                                     Frances Ha
         947
                       7.4
                                                                      Eraserhead
                       7.4
                                                                Far from Heaven
         946
         945
                       7.4
                                                                   Take Shelter
         944
                       7.4
                                                            Terms of Endearment
                       7.4
         943
                                                                The Bucket List
         942
                       7.4
                                                                Raising Arizona
         941
                       7.4
                                                               A Bridge Too Far
         940
                       7.4
                                                         Much Ado About Nothing
                       7.4
         939
                                                                 Predestination
         938
                       7.4
                                                            Alice in Wonderland
         937
                       7.4
                                                                       Labyrinth
                       7.4
                                                                       True Grit
         936
         935
                       7.4
                                                                       Excalibur
         934
                       7.4
                                                           Crazy, Stupid, Love.
         933
                       7.4
                                                                    Beetlejuice
                       7.4
         932
                                    Harry Potter and the Order of the Phoenix
         931
                       7.4
                                                                   Mean Streets
         930
                       7.4
                                                                Man on the Moon
         951
                       7.4
                                                                  Sleepy Hollow
                       7.4
         952
                                                                   Pirate Radio
         977
                       7.4
                                                                    Poltergeist
```

X-Men

Tootsie

Psycho

Rear Window

Casablanca

Seven Samurai

Interstellar

. . .

The NeverEnding Story

Saving Private Ryan

Raiders of the Lost Ark

Back to the Future Part III

Master and Commander: The Far Side of the World

7

954

953

976

975

974

. .

36

37

38

39

32

17

15

7.4

7.4

7.4

7.4

7.4

. . .

8.6

8.6

8.6

8.6

8.6

8.7

8.7

```
16
              8.7
                                       One Flew Over the Cuckoo's Nest
              8.7
                                                              Goodfellas
18
24
              8.7
                                                                    Se7en
20
              8.7
                                                              The Matrix
              8.7
                                                             City of God
21
22
              8.7
                                                  It's a Wonderful Life
23
              8.7
                                                     The Usual Suspects
              8.7
19
                                                               Star Wars
14
              8.8
                                The Lord of the Rings: The Two Towers
13
              8.8
                                                            Forrest Gump
              8.8
12
                      Star Wars: Episode V - The Empire Strikes Back
              8.8
11
                                                               Inception
10
              8.8
                   The Lord of the Rings: The Fellowship of the Ring
              8.9
4
                                                            Pulp Fiction
5
              8.9
                                                            12 Angry Men
9
              8.9
                                                              Fight Club
7
              8.9
                       The Lord of the Rings: The Return of the King
8
              8.9
                                                        Schindler's List
6
              8.9
                                        The Good, the Bad and the Ugly
3
              9.0
                                                         The Dark Knight
2
              9.1
                                                 The Godfather: Part II
              9.2
                                                           The Godfather
1
0
              9.3
                                              The Shawshank Redemption
    content_rating
                                 duration \
                          genre
978
                  R
                          Crime
                                       126
950
                  R
                                       108
                          Crime
949
                 РG
                         Comedy
                                       103
948
                  R
                         Comedy
                                        86
947
           UNRATED
                          Drama
                                        89
946
              PG - 13
                                       107
                          Drama
945
                  R
                          Drama
                                       120
944
                  R
                        Comedy
                                       132
943
              PG-13
                                        97
                     Adventure
942
              PG-13
                        Comedy
                                        94
941
                 ΡG
                          Drama
                                       175
              PG-13
940
                        Comedy
                                       111
939
                  R
                          Drama
                                        97
938
                     Animation
                                        75
                  G
937
                     Adventure
                 PG
                                       101
936
                NaN
                     Adventure
                                       128
                     Adventure
935
                  R
                                       140
934
              PG-13
                         Comedy
                                       118
933
                 РG
                        Comedy
                                        92
932
              PG-13
                     Adventure
                                       138
931
                  R
                          Crime
                                       112
930
                  R
                     Biography
                                       118
951
                  R
                          Drama
                                       105
```

```
952
                         Comedy
                                        117
                  R
977
                 ΡG
                         Horror
                                        114
954
              PG-13
                         Action
                                        104
953
                 ΡG
                      Adventure
                                        102
976
              PG-13
                         Action
                                        138
975
                 ΡG
                      Adventure
                                        118
974
                 ΡG
                         Comedy
                                        116
                             . . .
. .
                 . . .
                                        . . .
36
                                        169
                  R
                         Action
37
                 ΡG
                         Action
                                        115
38
           APPROVED
                        Mystery
                                        112
39
                  R
                         Horror
                                        109
32
                 РG
                          Drama
                                        102
17
            UNRATED
                          Drama
                                        207
15
              PG-13
                      Adventure
                                        169
16
                                        133
                  R
                          Drama
18
                  R
                      Biography
                                        146
24
                  R
                                        127
                          Drama
20
                  R
                         Action
                                        136
21
                  R
                          Crime
                                        130
22
           APPROVED
                          Drama
                                        130
23
                          Crime
                  R
                                        106
19
                 ΡG
                         Action
                                        121
14
              PG-13
                      Adventure
                                        179
13
              PG-13
                          Drama
                                        142
12
                 ΡG
                         Action
                                        124
              PG-13
                                        148
11
                         Action
10
              PG-13
                      Adventure
                                        178
4
                          Crime
                                        154
                  R
5
         NOT RATED
                          Drama
                                         96
9
                          Drama
                                        139
                  R
7
              PG-13
                      Adventure
                                        201
8
                  R
                      Biography
                                        195
6
          NOT RATED
                        Western
                                        161
3
              PG-13
                         Action
                                        152
2
                  R
                          Crime
                                        200
1
                          Crime
                                        175
                  R
0
                   R
                          Crime
                                        142
     [u'Charlie Sheen', u'Michael Douglas', u'Tamar...
978
```

actors list

```
950
     [u'Jennifer Tilly', u'Gina Gershon', u'Joe Pan...
949
     [u'Macaulay Culkin', u'Joe Pesci', u'Daniel St...
948
     [u'Greta Gerwig', u'Mickey Sumner', u'Adam Dri...
     [u'Jack Nance', u'Charlotte Stewart', u'Allen ...
947
946
     [u'Julianne Moore', u'Dennis Quaid', u'Dennis ...
945
     [u'Michael Shannon', u'Jessica Chastain', u'Sh...
944
     [u'Shirley MacLaine', u'Debra Winger', u'Jack ...
```

```
943
     [u'Jack Nicholson', u'Morgan Freeman', u'Sean ...
942
     [u'Nicolas Cage', u'Holly Hunter', u'Trey Wils...
     [u'Sean Connery', u"Ryan O'Neal", u'Michael Ca...
941
940
     [u'Kenneth Branagh', u'Emma Thompson', u'Keanu...
939
      [u'Ethan Hawke', u'Sarah Snook', u'Noah Taylor']
938
     [u'Kathryn Beaumont', u'Ed Wynn', u'Richard Ha...
937
     [u'David Bowie', u'Jennifer Connelly', u'Toby ...
936
       [u'John Wayne', u'Kim Darby', u'Glen Campbell']
935
     [u'Nigel Terry', u'Helen Mirren', u'Nicholas C...
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                                     The Godfather
                                                                  R
                                                                      Crime
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                            The Godfather: Part II
                                                                  R
                                                                      Crime
                                                                                   200
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                                   The Dark Knight
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                                                    The Killing
                                                                       APPROVED
                       7.6
                                                        Dracula
         703
                                                                       APPROVED
                                             A Hard Day's Night
         612
                       7.7
                                                                       APPROVED
         58
                       8.5
                                                 Paths of Glory
                                                                       APPROVED
         210
                       8.1
                                                           Laura
                                                                       APPROVED
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                               Snow White and the Seven Dwarfs
                                                                       APPROVED
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                       7.8
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                                                                       APPROVED
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                                                      Notorious
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                                                                       APPROVED
         285
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                                               Bringing Up Baby
                                                                       APPROVED
                                            Singin' in the Rain
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                                              Kramer vs. Kramer
                                                                       APPROVED
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                                                                       APPROVED
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                                               To Catch a Thief
                                                                       APPROVED
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                       8.1
                                         Cat on a Hot Tin Roof
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329
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                                      Bonnie and Clyde
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253
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                                         The Big Sleep
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896
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                                                              APPROVED
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                                       This Is England
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144
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                                                               UNRATED
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                                            The Return
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             7.8
523
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123
                                           The General
                                                               UNRATED
             7.8
472
                         Guess Who's Coming to Dinner
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             7.6
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96
             8.4
                                                Yojimbo
                                                               UNRATED
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687
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                                                               UNRATED
582
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                                                Sabrina
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823
             7.5
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                                                               UNRATED
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239
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                                                               UNRATED
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161
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317
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                                      Dawn of the Dead
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802
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262
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                                           The Hustler
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289
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526
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730
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                                                                      Χ
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Shadow of a Doubt

**APPROVED** 

350

8.0

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