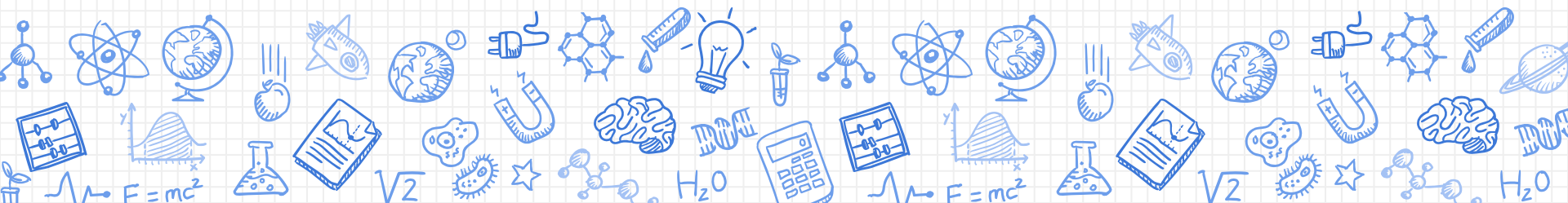
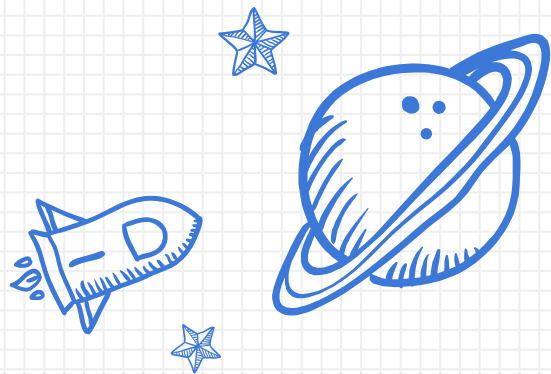


Predicting Professor Ratings Using Ratemyprofessors.com



Edward Leardi – Project Luther – Feb. 2nd, 2018





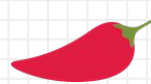
Why?

Ratemyprofessors has become a staple of college life, revealing just how much importance students place on professor ratings

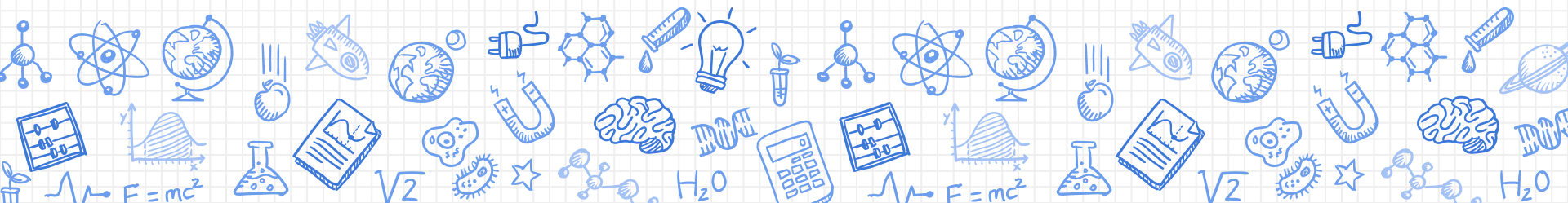
.....

- ✗ The data
- ✗ Building up the model
- ✗ Conclusions





The data



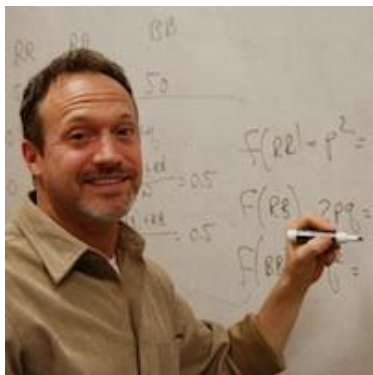
**Adam Fry**

Professor in the Ecology & Evolutionary Biology
department
at [University of Connecticut](#), Storrs, CT

ARE YOU ADAM?

Rate This Professor

Share

[SUBMIT A CORRECTION](#) | [LEARN HOW RATINGS WORK](#)

University of Connecticut

Storrs, CT
[WEBSITE](#)

Rate this campus

Share

[SUBMIT A CORRECTION](#)OVERALL
QUALITY

4.7

WOULD
TAKE
AGAIN

91%

LEVEL OF
DIFFICULTY

2.8

HOTNESS



Tags for this Professor

See how other students describe this professor.

SKIP CLASS? YOU WON'T PASS. (34)

RESPECTED (20)

CLEAR GRADING CRITERIA (17)

BEWARE OF POP QUIZZES (9)

CARING (9)

EXTRA CREDIT (7)

TOUGH GRADER (7)

ACCESSIBLE OUTSIDE CLASS (7)

PARTICIPATION MATTERS (5)

AMAZING LECTURES (5)

GIVES GOOD FEEDBACK (4)

LECTURE HEAVY (4)

TEST HEAVY (3)

LOTS OF HOMEWORK (1)

GET READY TO READ (1)

HILARIOUS (1)

INSPIRATIONAL (1)

CHOOSE YOUR TAGS

Top Professors

[VIEW ALL PROFESSORS](#)**Shor, Mike**

25 REVIEWS

5.0

**Farley, William**

23 REVIEWS

5.0

**Schlund-Vials, Cathy**

18 REVIEWS

5.0

3.64

AVERAGE PROFESSOR RATING

How This School Stacks Up

3.9

OVERALL QUALITY RATING



4.2

REPUTATION



3.1

LOCATION



3.6

INTERNET



3.5

FOOD



3.9

OPPORTUNITY



4.2

FACILITIES



4.2

CLUBS



4.0

SOCIAL



4.2

HAPPINESS



4.2

SAFETY

04/18/2017



AWESOME

5.0

OVERALL QUALITY

3.0

LEVEL OF DIFFICULTY

BIOL1102

For Credit: Yes

Attendance: Mandatory

Textbook Used: No

Would Take Again: Yes

Grade Received: N/A

RESPECTED

SKIP CLASS? YOU WON'T PASS.

HILARIOUS

Daddy Fry is honestly one of my favorite professors ever. At the beginning he seems like kind of a jerk, but he is a jerk because he wants you to take what he says seriously. USE HIS METHODS OF STUDYING. Once I actually listened to his tips, everything was so much easier. Dope dude, totally a feminist, 10/10 would recommend. 3

👍 0 people found this useful

👎 0 people did not find this useful

[report this rating](#)

03/21/2017



AWESOME

5.0

OVERALL QUALITY

2.0

LEVEL OF DIFFICULTY

BIOL1102

For Credit: Yes

Attendance: N/A

Textbook Used: No

Would Take Again: Yes

Grade Received: A

ACCESSIBLE OUTSIDE CLASS

SKIP CLASS? YOU WON'T PASS.

RESPECTED

He is a great professor! You can always ask him question when he is in his office or email him. He'll response quickly! He is always willing to help you to learn bio, as long as you ask for help! If you feel confused about something, feel free to stop by his office hour and he'd like to explain to you as much as he can. He talks kind of fast!

👍 0 people found this useful

👎 0 people did not find this useful

[report this rating](#)



AWFUL

1.0

OVERALL QUALITY

5.0

LEVEL OF DIFFICULTY

For Credit: N/A

Attendance: N/A

Textbook Used: No

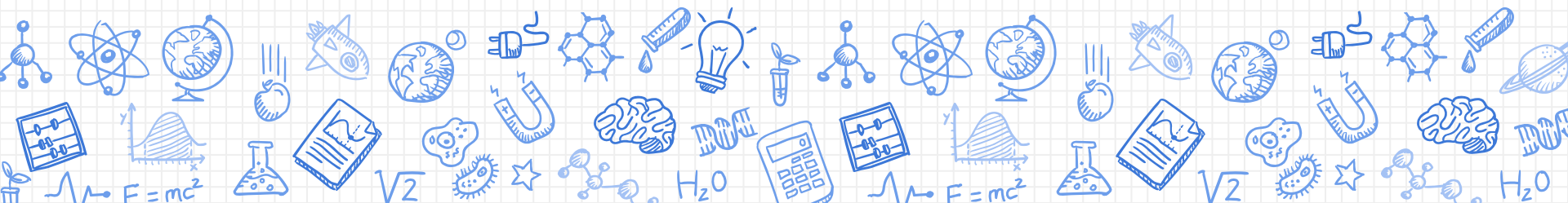
Would Take Again: N/A

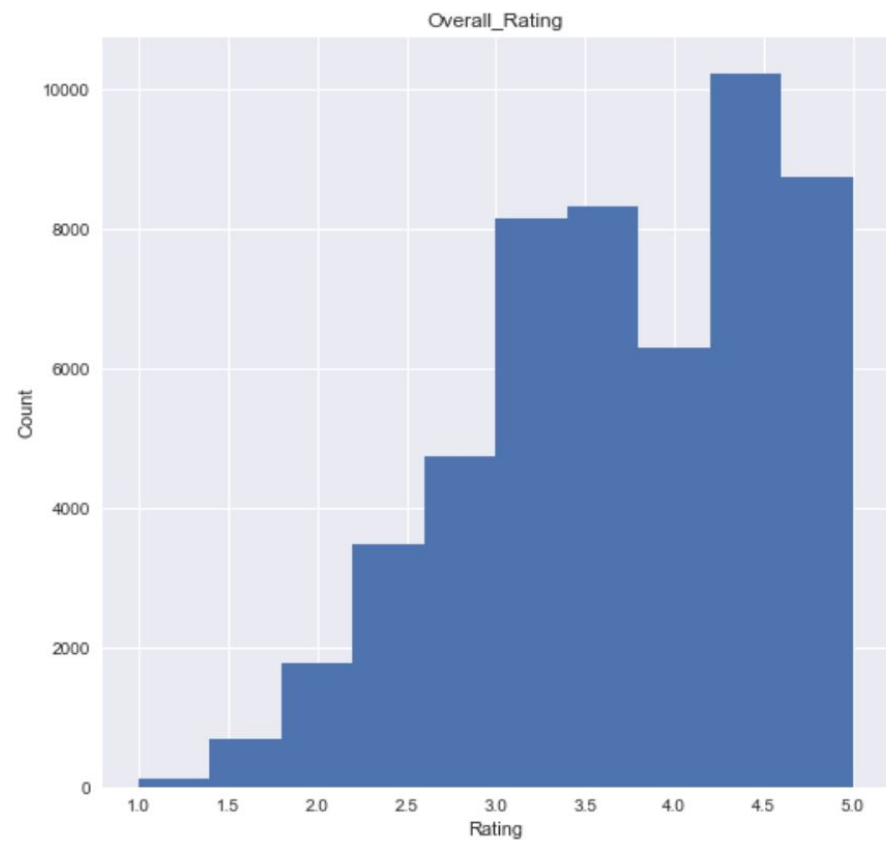
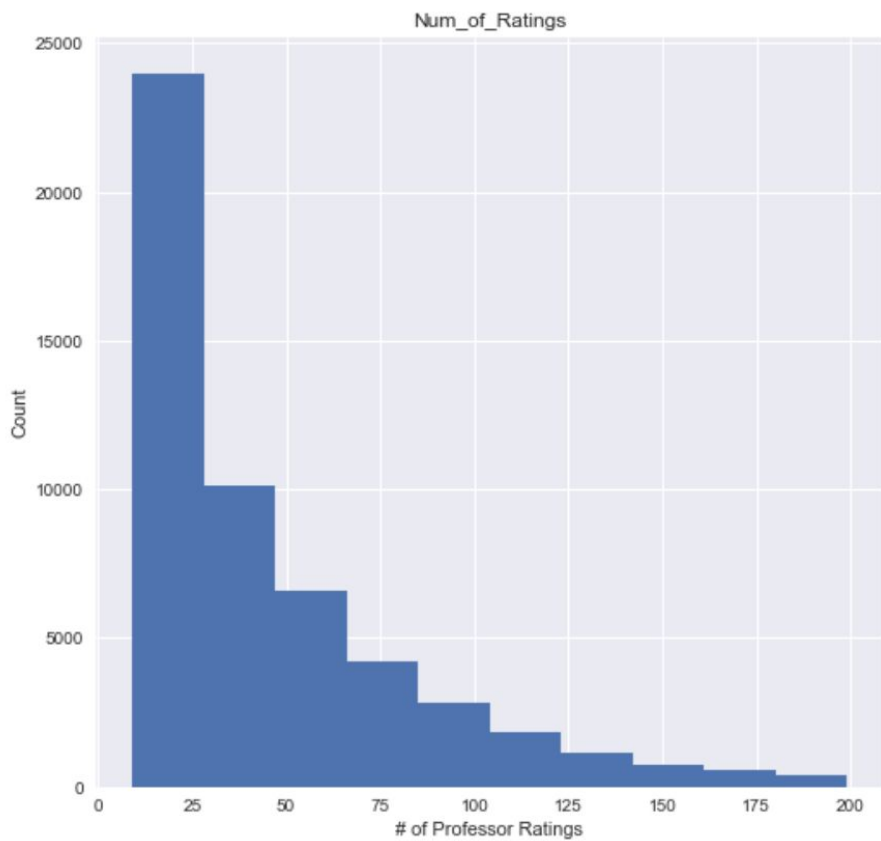
Grade Received: N/A

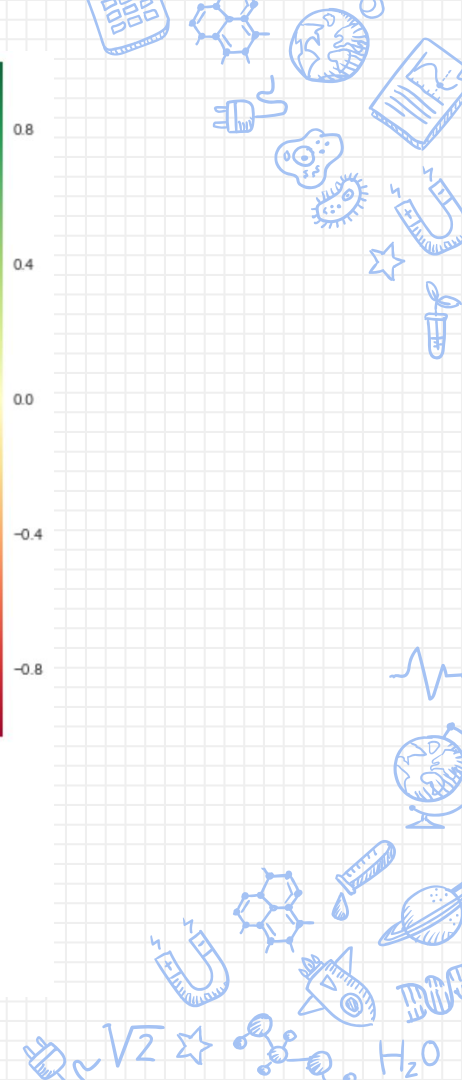
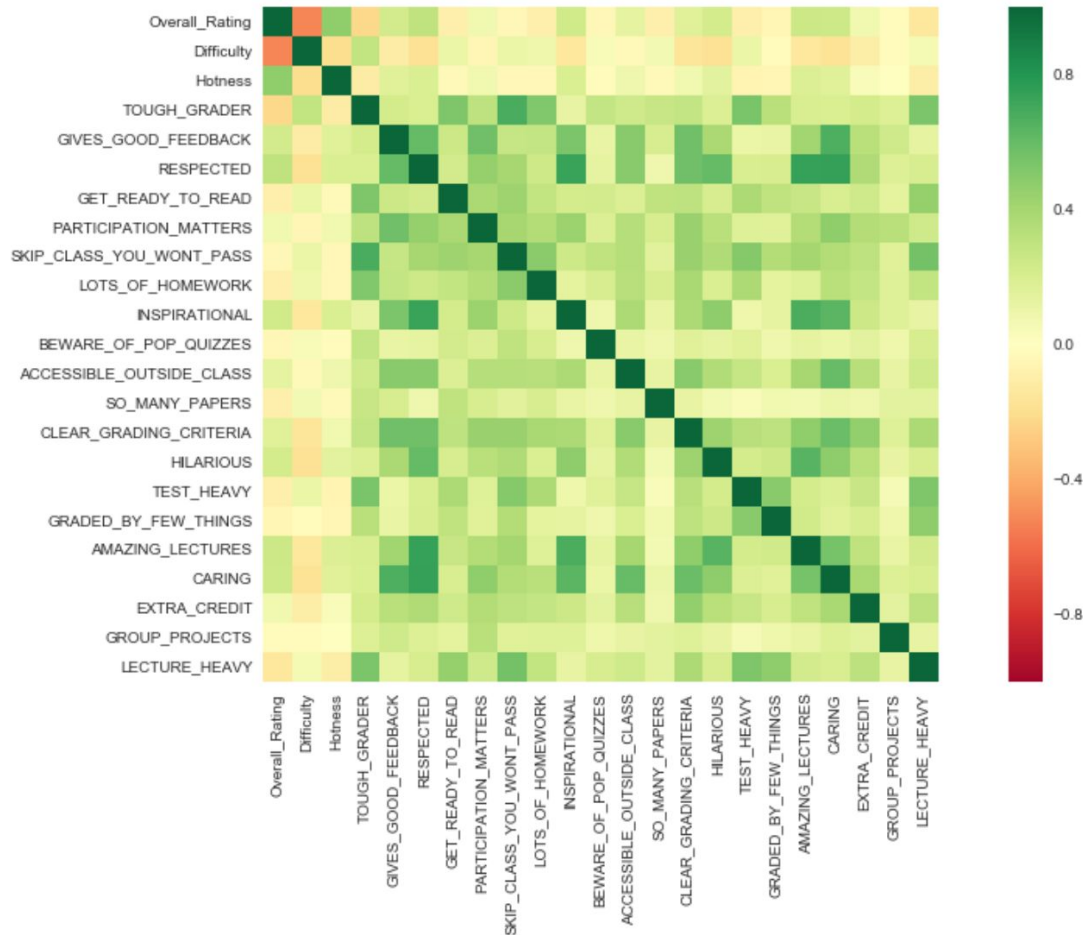
I don't wear my seatbelt driving to school because I want to die before I can make it to this class

👍 4 people found this useful

 0 people did not find this useful

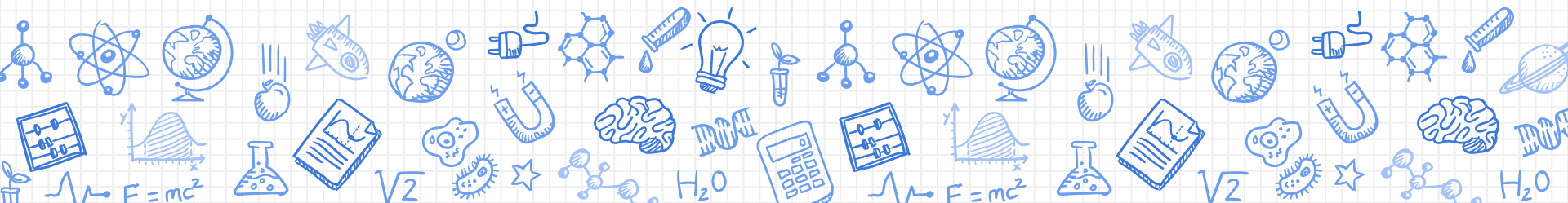
[report this rating](#)







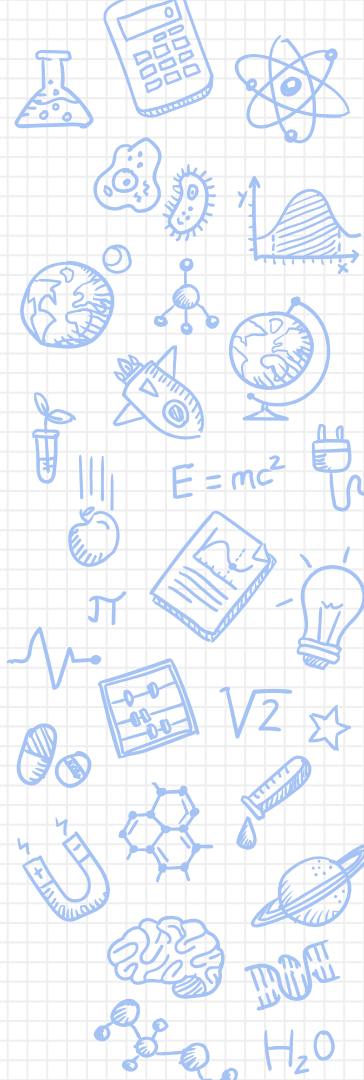
The models



How I modeled with base linear regression

- ✗ Baselined (using Difficulty)
 - R-squared = 0.269
- ✗ Expanded to features with $r > .2$
 - R-squared = 0.340
- ✗ Completed the model using all 21 features
 - R-squared = 0.431

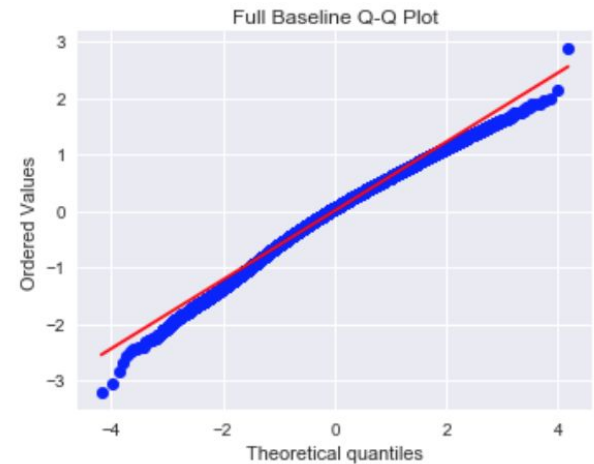
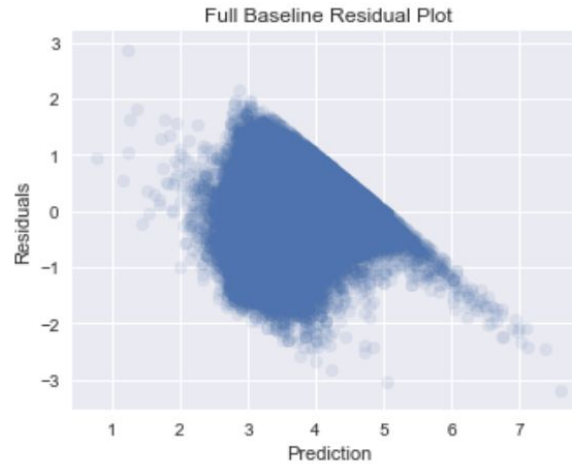
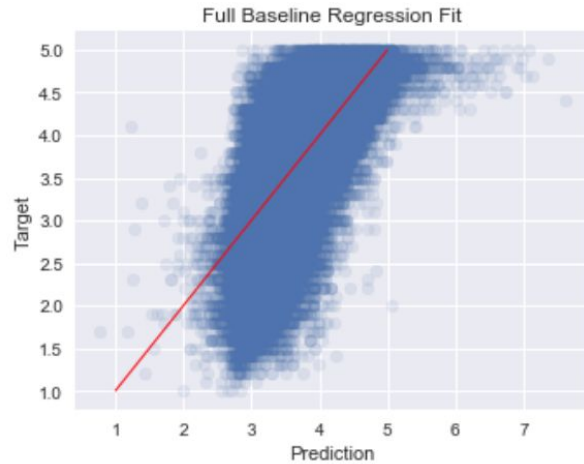
R-squared rose with more features, leading me to believe regularization probably wouldn't help much

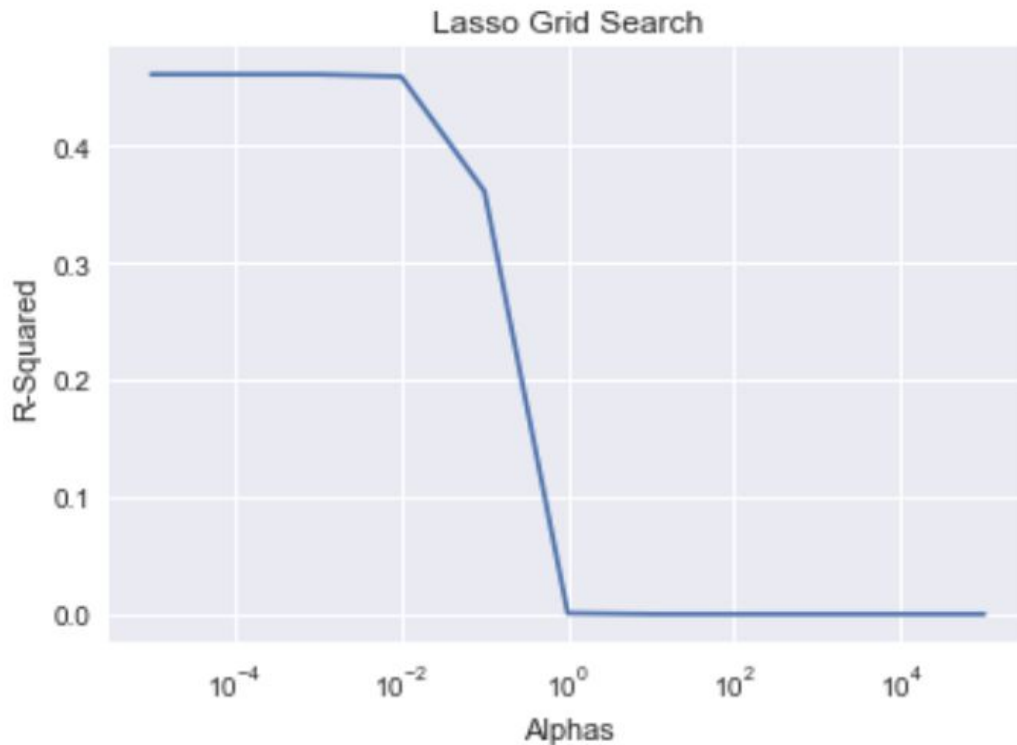


After performing 5-fold cross-validation

Linear Regression Mean R-squared Score: 0.4607

R-squared = [0.4554181, 0.45705191, 0.45671281, 0.46476376, 0.46958973]





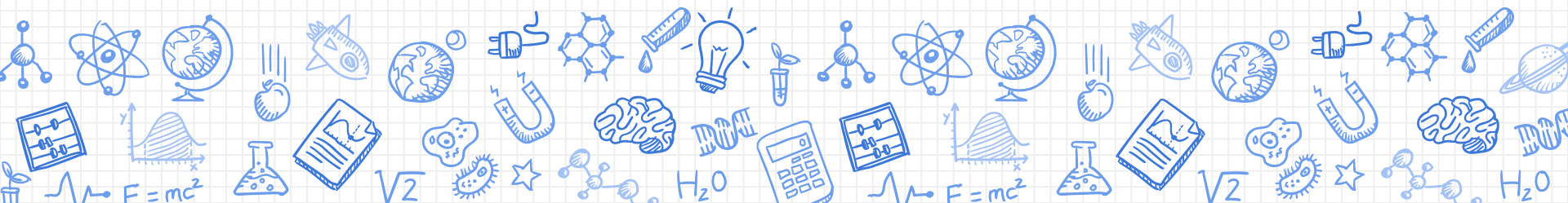
Lasso R-squared:

- For 0.01 alpha, R-squared = .458
- For 0.1 alpha, R-squared = .360

	Feature	0.01=alpha	0.1=alpha
0	Difficulty	-0.420768	-0.279436
1	Hotness	0.580946	0.147300
2	TOUGH_GRADER	-0.011732	-0.024262
3	GIVES_GOOD_FEEDBACK	0.018107	0.012874
4	RESPECTED	0.030490	0.034705
5	GET_READY_TO_READ	-0.000000	-0.000000
6	PARTICIPATION_MATTERS	-0.009066	-0.000000
7	SKIP_CLASS_YOU_WONT_PASS	0.010565	0.000000
8	LOTS_OF_HOMework	-0.011720	-0.000431
9	INSPIRATIONAL	-0.010693	0.000000
10	BEWARE_OF_POP_QUIZZES	-0.001964	-0.000000
11	ACCESSIBLE_OUTSIDE_CLASS	0.005475	0.000000
12	SO_MANY_PAPERS	-0.020021	-0.000000
13	CLEAR_GRADING_CRITERIA	-0.000000	0.000000
14	HILARIOUS	0.000000	0.001335
15	TEST_HEAVY	0.003247	-0.000000
16	GRADED_BY_FEW_THINGS	-0.022907	-0.000000
17	AMAZING_LECTURES	0.011929	0.012782
18	CARING	0.002461	0.000000
19	EXTRA_CREDIT	-0.001449	-0.000000
20	GROUP_PROJECTS	-0.015834	-0.000000
21	LECTURE_HEAVY	-0.027162	-0.015344

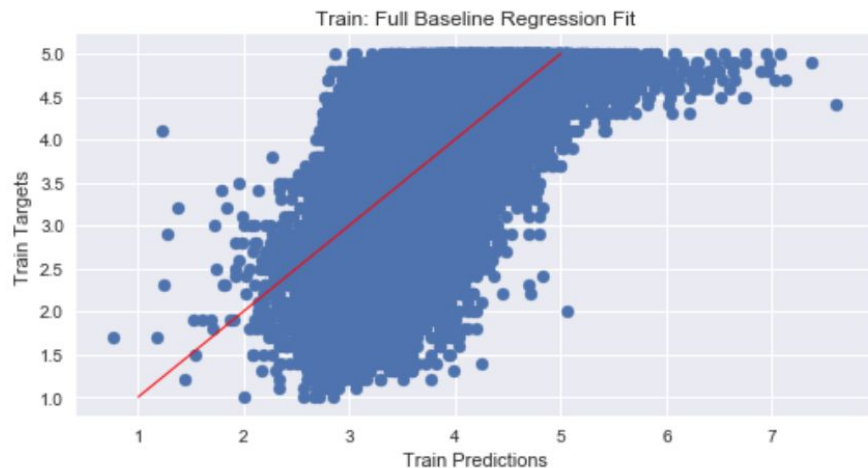
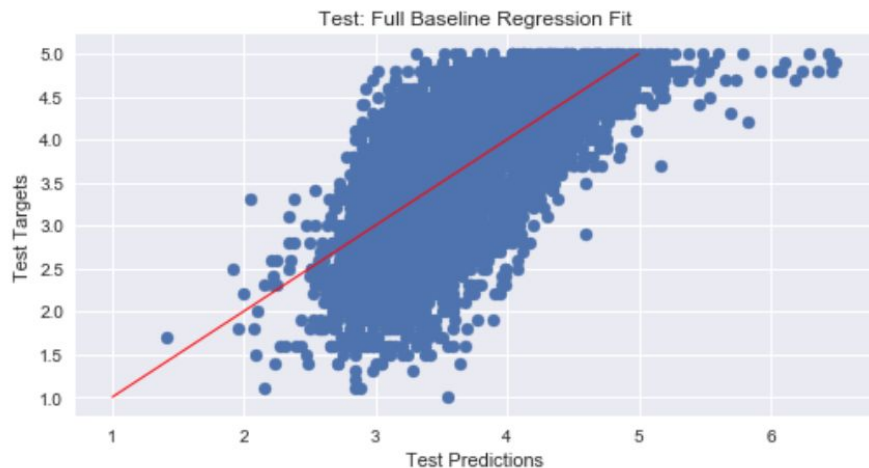


Test data



$R\text{-sq} = 0.4705$

Base Linear Regression R-Squared on Test Data



A decorative border surrounds the central text, featuring various hand-drawn science and mathematics icons. In the top-left corner, there is a molecular structure, a globe, and the chemical formula H_2O . The top-right corner includes a calculator, a plug, a cell, a star, and a test tube. The bottom-left corner shows a lightbulb, a brain, a graph, and the equation $E=mc^2$. The bottom-right corner contains a magnet, a planet, a DNA helix, and the chemical formula H_2O .
$$R-sq = 0.4704$$

Lasso Regression (alpha = .0001)

$$R-sq = 0.4703$$

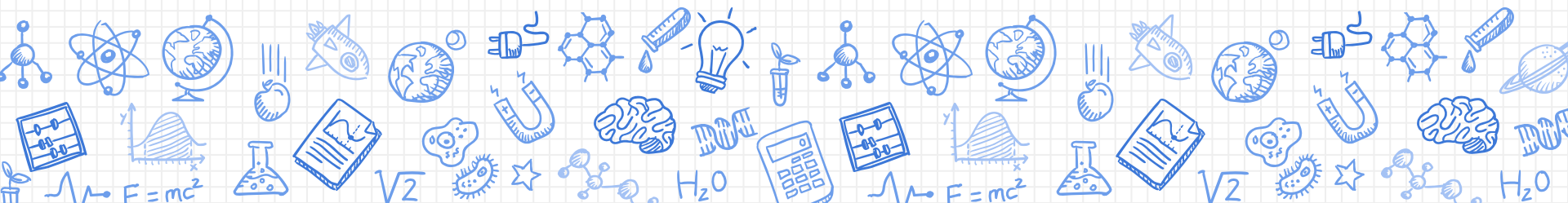
Ridge Regression (alpha = .0001)

$$R-sq = 0.4703$$

Elastic Net Regression (alpha = .0001)



Conclusions



Lasso and base linear regression produced similar results. For less complicated model, use Lasso.

Bimodal distribution with peaks at 3 and 5. Linear regression may not be the best for the problem. Could try classification?

