Predict the house price

Generate average real-estate price of any 3 suburbs for year 2017,2018 (next two years), 2022 (5 years),2027 (10 years) with its reasoning. (North Sydney, St. Leonards, Chatswood, North Ryde, Parramatta, Sydney Olympic Park, Rhodes, Norwest, Rockdale)

Task

Create a simulation of the residential property prices around any 3 Suburbs of Sydney out of (North Sydney, St. Leonards, Chatswood, North Ryde, Parramatta, Sydney Olympic Park, Rhodes, Norwest, Rockdale). You could use inputs from http://www.planning.nsw.gov.au/Plans-for-your-area/Sydney/A-Plan-for-Growing-Sydney, and/or "Sydney Office Market Research Report 2014" (Available as a PDF or downloadable from http://www.planning.nsw.gov.au/~/media/Files/DPE/Plans-and-policies/a-plan-for-growing-sydney-2014-12.ashx), and/or "A plan for growing Sydney" (Available as PDF or downloadable from http://www.planning.nsw.gov.au/~/media/Files/DPE/Reports/sydney-office-market-research-report-2014-06.ashx) along with any available open source data. You could assume that home demand could be directly proportional to the development of that specific suburb or ease of commute to a nearby developed suburb, or similar assumptions. You could code-ify these assumed co-relations that could affect the property prices and generate an output similar to

Eg (This is only a sample, we haven't considered the real data):

Suburb	2017 (Unit)	2017 (House)	2018 (Unit)	2018 (House)	2022 (Unit)	2022 (House)	2027 (Unit)	2027 (House)	Reasoning
Chatswood	567K	600K	600K	700K	800K	1M	1M	1.5M	New Railway Line, New Highway

Obviously you can't hard code all the values and or read it from a table and print it or just use any APIs which provides this info straight away. Please create a simulation model. We would really love to see some good amount of your code

Implementation

Please choose one of the programming language among Scala, Haskell, Java or Python. You will need to tell us how to build and run your code. However, ideally this will be nothing more than mvn install, or stack build, or sbt test, or python predicthouseprice.py, or Configure && make && make install

Expectations

We expect you to think and code out of the box. It shouldn't take more than 8 to 10 hrs. of your time. This exercise is an opportunity for you to demonstrate that you can do some research, take some interesting algorithms and implement them in appropriately tested, reasonably performing and — most importantly — readable code. We would like to evaluate your problem solving capability, writing good code and test case documentation.

We don't expect you to learn everything about real estate or to get the simulation "right". Make reasonable guesses based on your experience about how house price changes. Your submission is the starting point for the next conversation we'll have together.

Buena Suerte!

Some data I worked with:

North Sydney

Walkability score 92. Number of residents 6261

Years	2010	2015	2020	2025	2030	2035
No. of people employed in ’000 persons	42	42	46	48	53	56

Vacancy rate 9% 2014 of 854251 sum Off rent $565 per sim

Median individual income $1146 per week

	HOUSE	UNIT
Median price	$1,912,500	$794,000
12-month growth	12.30%	-8.84%
Average Annual Growth	8.38%	6.06%

North Ryde

Years	2010	2015	2020	2025	2030	2035
No. of people employed in ’000 persons	35	38	47	53	61	71

Vacancy rate 7.5% 2014 Off rent $340 per sim

median individual salary $579 per week 2011

Walkability score: 62

Number of residents 10131. Places of recreation 22

	HOUSE	UNIT
Median price	$1,430,000	$895,000
12-month growth	1.98%	5.42%
Average Annual Growth	9.74%	6.10%

Parramatta

Walkability score 81: Numresidents 19732

Years	2010	2015	2020	2025	2030	2035
No. of people employed in ’000 persons	35	37	42	47	52	56

Vacancy rate 5.9% of 685878 sum Off rent $403 per sim

median individual salary $623 in 2011

	HOUSE	UNIT
Median price	$961,000	$585,000
12-month growth	-14.27%	-5.65%
Average Annual Growth	8.78%	6.83%

Outputs:

Suburb name: North Sydney

Coefficients: [[7.22225999 15.82018856]]

HOUSE PRICES-- 2017: [153.70773268K] 2018: [153.70773268K] 2022: [153.70773268K] 2027: [153.70773268K]

('Coefficients: \n', array([[2.70530738, 5.92591141]]))

UNIT PRICES-- 2017: [135.19323974K] 2018: [135.19323974K] 2022: [135.19323974K] 2027: [135.19323974K]

Suburb name: North Ryde

Coefficients: [[9.05043947 14.7665065]]

HOUSE PRICES in 1000s-- 2017: [170.55989737K] 2018: [170.55989737K] 2022: [170.55989737K] 2027: [170.55989737K]

('Coefficients: \n', array([[5.3527499 , 8.73343404]]))

UNIT PRICES in 1000s-- 2017: [150.12259317K] 2018: [150.12259317K] 2022: [150.12259317K] 2027: [150.12259317K]