

House Price Reprice Test Procedure

Revision History

Authors	Description of Change	Sections	Rev	Date
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1 Team Description

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2 Introduction

The following document details the steps taken to test each of the requirements proposed in written document. The tests are broken into three major partitions: 1) Interface , 2) Data Management, and 3) Predictors.

2.1 Identification

Requirement Document Tested:	Reprice Written Requirement
Requirement Document Revision:	1
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3 Test Procedures

3.1 Test Case 1

Description:

This section details the specific tests done on the User Interface to test for accuracy and usability. The tests will be done on the User input and the system output.

Precondition:

- 1) User input is semantically correct and fits a predictable value
- 2) User fills out all fields of the form on the 'homepage'
- 3) User must pick from drop down autocomplete menus

Step Number	Action	System Response	Requirement Tested (if applicable)
1	User Inputs search data in form fields and clicks the submit button	System 'gets' form data from the front-end and sends it to the back end	RID-7001,7002,7003
2	Backend receives data from the front-end, stores it and sends it to the predictor model for calculation.	System stores results of the calculation into a separate variable	RID-7001,7002,7003
3	System sends result to the front-end	System displays result on the 'results.html' page	RID-7002,7003,7004
4	User can click the back button from the results page	System redirects to the 'homepage' and resets the form data so new inputs can be added.	RID- 7004

3.2 Test Case 2

Description:

This section details the steps taken to test the chain of models and their prediction quality. These tests include single level tests and aggregated tests and checking the entire stack of models and their interaction with one another.

Note that the train-test phase development indicated that all the proposed models are capable of recalling and predicting values with a maximum error of \$3.0. Thus, $E_{train_max} = E_{test_max} = 3.0$.

Precondition:

- 1) The model should be loaded from memory successfully to perform the test
- 2) The sample test used for model testing should be reasonably large and representative.

Step Number	Action	System Response	Requirement Tested (if applicable)
1	Draw a random sample of size 1000 from each of the levels including state, county, city, and neighborhood	None. Background action to generate a fair input.	None
2	Pass the respective data to state level predictor	The model returns a vector of predictions for each input	RID-3001, RID-3002
3	Pass the respective data to county level predictor	The model returns a vector of predictions for each input	RID-4001, RID-4002
4	Pass the respective data to city level predictor	The model returns a vector of predictions for each input	RID-5001, RID-002
5	Pass the respective data to neighborhood level predictor	The model returns a vector of predictions for each input	RID-6001, RID-6002

6	Pass the respective data to predictor class to check the aggregated set of models integrated	The model returns a vector of predictions for each input	RID-2002, RID-2003
7	Call the data manager to retrieve the most recent values from Zillow's website	The data manager returns a Pandas data frame with the past three months values for the requested level	RID-2001

3.3 Test Case 3

Description: Tests dataset correct retrieved and limited to newest three months data. Dataset correctly return the value when specific request made.

Precondition:

- 1) Zillow's data-base still available to access

Step Number	Action	System Response	Requirement Tested (if applicable)
1	Run data manager each week	Retrieve newest data from Zillow, if action fail return error message.	RID-1001, RID-1002
2	Call the data manager, given an input	Return the past three months value for the requested level, or there is no matched data return error message	RID-1003
3	Call the data manager, given m,	Return the vector of past m true observations	RID-1004

4 Verification Cross Reference Matrix

Requirement Identifier	Where Tested
RID-7001	User Interface Test
RID-7002	User Interface Test
RID-7003	User Interface Test
RID-7004	User Interface Test
RID-2001	Predictor Test
RID-2002	Predictor Test
RID-2003	Predictor Test
RID-2004	Predictor Test
RID-3001	Predictor Test
RID-3002	Predictor Test
RID-4001	Predictor Test
RID-4002	Predictor Test
RID-5001	Predictor Test
RID-5002	Predictor Test
RID-6001	Predictor Test
RID-6002	Predictor Test
RID-1001	Dataset Test
RID-1002	Dataset Test
RID-1003	Dataset Test
RID-1004	Dataset Test