PREDICTING HOUSE PRICE USING MACHINE LEARNING

TEAM MEMBER

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PHASE-1 Document Submission

Project : House Price Prediction

Data Source :

~A good data source for house price prediction using a machine learning should be accurate,complete,covering the geographic area of intrests,accessible.

Dataset Link: (https://www.kaggle.com/datasets/vedavyasv/usa-housing)

Avg. Area House Age	Avg. Area Number of Rooms	Avg. Area Number of Bedrooms	Avg. Area Income	Area Population	Price	Address
86754.2	6.60444	6.252455	4.02	43017.44	1662495	91863 Curtis Point New Richard, AK 99996-7554
74399.84	6.382453	7.252665	6.36	41084.66	1417820	03819 Lee Junction Suite 046 Mooneyborough, WA 19656
49408.2	5.82592	5.831739	3.32	26881.13	549976.1	7796 Joseph Burg Danielsside, RI 70370
62279.79	6.10845	6.306116	4.12	35263.65	1054771	173 Mendoza Land West John, NJ 57690
73078.2	5.923906	6.445457	3.32	54915.96	1415648	3288 Lee Pass South Julieton, PW 02759-4964
72942.71	4.786222	7.319886	6.41	24377.91	948788.3	86908 Marshall Port Suite 252 Scotttown, NM 69143
63819.62	5.949839	8.022469	4.09	27825.57	1159597	951 Bryant Dale Suite 735 Lake Jacqueline, NH 95266
73265.45	8.314762	7.425597	3.24	21030.97	1547133	00301 Bradshaw Avenue Suite 833 Suzannefurt, IN 00654-8754
68488.13	6.116112	7.182527	5.08	18267.95	1186689	84473 Ochoa Pines Apt. 808 Jamesport, KY 70207-2955
55193.86	7.186121	5.096917	4.01	32537.82	772112	13706 Morgan Turnpike Suite 378 Hohaven, NC 42699
77434.69	6.309271	5.219754	3.06	36252.34	1172730	4872 Delgado Ramp North James, IA 36544
66158.88	4.476429	6.911743	2.28	37098.74	1111085	73202 Christopher Tunnel New Roberttown, MN 08925-1536
60502.91	7.533381	5.731824	4.23	33579.63	1022781	8781 Olivia Port Apt. 225 Thompsonside, VT 22884
60910.89	5.635467	7.325974	4.2	43347.8	1274475	PSC 9354, Box 0703 APO AA 58696-1278
73931.98	6.394108	4.58084	4.32	36543.07	1213531	271 Johnson Hills Apt. 001 Mcculloughfurt, FM 70847
59539.95	6.01859	7.007676	5.43	58600.83	1411730	122 Russo Neck South Kevin, KY 20712-5282
56547.51	5.435415	6.51515	3.13	37585.27	858685.6	85225 Christopher Inlet Apt. 627 West Calebberg, KS 76460
65950.35	5.476513	6.717844	3.28	40110.85	1200962	7125 Mullins Cliff Maryborough, WY 66971
74533.16	6.679353	5.919231	4	49481.57	1520234	905 Lane Pines Suite 348 Brownborough, DE 57196-3319
66422.92	7.122072	7.078584	6.36	31019.32	1360908	61090 Griffith Ridges Craigstad, AK 28807-8602
74334.49	5.419013	6.261535	4.12	41640.44	1360921	270 Jennifer Loop Suite 343 South Jesse, ND 60570-1483
63538.35	4.764499	7.168662	3.27	43282.18	1146532	10973 Clark Trafficway Meyersbury, LA 63237
83953.1	7.385135	6.898847	3.08	37283.36	1789099	91733 Baker Orchard South Kyle, KS 37301
57279.06	5.118109	6.56152	3.17	44023.79	852099.5	024 William Course East Charlotteview, DE 69073-3104
56553.55	5.691129	7.021252	3.15	29682.41	746096.7	PSC 4455, Box 3268 APO AP 45454
75795.58	5.78678	7.327325	6.25	33197.78	1534480	562 Brown Junction Suite 282 Christopherborough, KS 20719
70848.79	5.282325	6.766445	3.27	40458.74	1215609	USCGC Thompson FPO AA 13237-3887

Problem Definition:

~The goal is to create a machine learning model that accurately predicts house prices based on various features. This model should assist potential homebuyers and sellers in making informed decisions about property transactions.

Design Thinking:

~By clearly defining the problem and considering the needs of various stakeholders, you set the foundation for developing a robust and effective machine learning solution for house price prediction.

1. EMPATHIZE:

- Understand the user's needs. In this case, it's potential homebuyers or sellers who want accurate price predictions.

- Consider factors like location, size, amenities, and market trends.

2. DEFINE:

- Clearly define the problem. For example, "How might we provide accurate and user-friendly house price predictions?"

- List the key features users would want to know when predicting house prices.

3. IDEATE:

- Brainstorm potential features that could contribute to accurate predictions (e.g., location, number of bedrooms, square footage, recent sales data).

- Think about how to present this information in an understandable and user-friendly way.

4. PROTOTYPE:

- Develop a simple machine learning model using a dataset of house prices and relevant features.

- Create a basic interface to input features (e.g., a form for users to input details about a house)

5. TEST:

- Gather feedback on the prototype. What do users like? What's confusing?

- Test the accuracy of predictions against real market data.

6. ITERATE:

- Based on feedback, refine the model and the user interface.
- Consider adding more features or tweaking existing ones to improve accuracy.

7. IMPLEMENT:

- Develop the final product incorporating all the feedback and improvements.
- Ensure it's user-friendly and accessible.

8. LAUNCH:

- Release the tool to users, perhaps as a web application.
- Monitor user interactions and gather additional feedback for future updates.

9. EVALUATE:

- Continuously assess the model's accuracy as it interacts with real-world data.
- Collect user reviews and make necessary adjustments.

10. EVOLVE:

- Stay updated on real estate trends and adjust the model as needed.
- Consider expanding the tool to include additional features or cater to different markets.

THE END!!