

```
C:\Users\HP\AppData\Local\Microsoft\WindowsApps\python3.12.exe "Q:\Ai Courses\AI Hsoub\DeepLearning\Course Project\GitHubGalaxy\PredictHousePrice\app.py"
2024-04-17 20:38:01.690053: I tensorflow/core/util/port.cc:113] oneDNN custom operations are on. You may see slightly different numerical results due to floating-point round-off errors from different computation orders. To turn them off, set the environment variable `TF_ENABLE_ONEDNN_OPTS=0`.
2024-04-17 20:38:02.526057: I tensorflow/core/util/port.cc:113] oneDNN custom operations are on. You may see slightly different numerical results due to floating-point round-off errors from different computation orders. To turn them off, set the environment variable `TF_ENABLE_ONEDNN_OPTS=0`.
C:\Users\HP\AppData\Local\Packages\PythonSoftwareFoundation.Python.3.12_qbz5n2kfra8p0\LocalCache\local-packages\Python312\site-packages\keras\src\layers\core\dense.py:88: UserWarning: Do not pass an `input_shape` / `input_dim` argument to a layer. When using Sequential models, prefer using an `Input(shape)` object as the first layer in the model instead.
  super().__init__(activity_regularizer=activity_regularizer, **kwargs)
2024-04-17 20:38:03.808532: I tensorflow/core/platform/cpu_feature_guard.cc:210] This TensorFlow binary is optimized to use available CPU instructions in performance-critical operations.
To enable the following instructions: AVX2 FMA, in other operations, rebuild TensorFlow with the appropriate compiler flags.
Model: "sequential"
```

Layer (type)	Output Shape	Param #
dense (Dense)	(None, 128)	1,408
dense_1 (Dense)	(None, 64)	8,256
dense_2 (Dense)	(None, 32)	2,080
dense_3 (Dense)	(None, 16)	528
dense_4 (Dense)	(None, 1)	17

```
Total params: 12,289 (48.00 KB)
Trainable params: 12,289 (48.00 KB)
Non-trainable params: 0 (0.00 B)
Epoch 1/100
146/146 ██████████ 1s 3ms/step - accuracy: 0.5247 - loss: 0.6878 -
val_accuracy: 0.6130 - val_loss: 0.6732
Epoch 2/100
146/146 ██████████ 0s 1ms/step - accuracy: 0.7240 - loss: 0.6672 -
val_accuracy: 0.6952 - val_loss: 0.6475
Epoch 3/100
146/146 ██████████ 0s 1ms/step - accuracy: 0.7511 - loss: 0.6380 -
val_accuracy: 0.7260 - val_loss: 0.6089
Epoch 4/100
146/146 ██████████ 0s 1ms/step - accuracy: 0.7803 - loss: 0.5884 -
val_accuracy: 0.8459 - val_loss: 0.5329
Epoch 5/100
146/146 ██████████ 0s 1ms/step - accuracy: 0.8473 - loss: 0.5009 -
val_accuracy: 0.8527 - val_loss: 0.4497
Epoch 6/100
146/146 ██████████ 0s 1ms/step - accuracy: 0.8501 - loss: 0.4327 -
```

val_accuracy: 0.8904 - val_loss: 0.3791
Epoch 7/100
146/146 ————— 0s 1ms/step - accuracy: 0.8603 - loss: 0.3723 -
val_accuracy: 0.8767 - val_loss: 0.3348
Epoch 8/100
146/146 ————— 0s 1ms/step - accuracy: 0.8731 - loss: 0.3356 -
val_accuracy: 0.8973 - val_loss: 0.3052
Epoch 9/100
146/146 ————— 0s 1ms/step - accuracy: 0.8659 - loss: 0.3279 -
val_accuracy: 0.8973 - val_loss: 0.2984
Epoch 10/100
146/146 ————— 0s 1ms/step - accuracy: 0.8636 - loss: 0.3189 -
val_accuracy: 0.8836 - val_loss: 0.2772
Epoch 11/100
146/146 ————— 0s 1ms/step - accuracy: 0.8765 - loss: 0.3000 -
val_accuracy: 0.8938 - val_loss: 0.2724
Epoch 12/100
146/146 ————— 0s 1ms/step - accuracy: 0.8812 - loss: 0.2882 -
val_accuracy: 0.8904 - val_loss: 0.2595
Epoch 13/100
146/146 ————— 0s 1ms/step - accuracy: 0.8962 - loss: 0.2601 -
val_accuracy: 0.9007 - val_loss: 0.2517
Epoch 14/100
146/146 ————— 0s 1ms/step - accuracy: 0.8900 - loss: 0.2732 -
val_accuracy: 0.9041 - val_loss: 0.2465
Epoch 15/100
146/146 ————— 0s 1ms/step - accuracy: 0.8847 - loss: 0.2707 -
val_accuracy: 0.8973 - val_loss: 0.2425
Epoch 16/100
146/146 ————— 0s 1ms/step - accuracy: 0.8824 - loss: 0.2696 -
val_accuracy: 0.9075 - val_loss: 0.2394
Epoch 17/100
146/146 ————— 0s 1ms/step - accuracy: 0.9010 - loss: 0.2465 -
val_accuracy: 0.9075 - val_loss: 0.2425
Epoch 18/100
146/146 ————— 0s 1ms/step - accuracy: 0.8812 - loss: 0.2662 -
val_accuracy: 0.9041 - val_loss: 0.2356
Epoch 19/100
146/146 ————— 0s 1ms/step - accuracy: 0.8906 - loss: 0.2629 -
val_accuracy: 0.8973 - val_loss: 0.2498
Epoch 20/100
146/146 ————— 0s 1ms/step - accuracy: 0.8871 - loss: 0.2685 -
val_accuracy: 0.8938 - val_loss: 0.2354
Epoch 21/100
146/146 ————— 0s 1ms/step - accuracy: 0.8861 - loss: 0.2739 -
val_accuracy: 0.9041 - val_loss: 0.2404
Epoch 22/100
146/146 ————— 0s 1ms/step - accuracy: 0.8992 - loss: 0.2387 -
val_accuracy: 0.9007 - val_loss: 0.2367
Epoch 23/100
146/146 ————— 0s 1ms/step - accuracy: 0.8926 - loss: 0.2498 -
val_accuracy: 0.9075 - val_loss: 0.2321
Epoch 24/100
146/146 ————— 0s 1ms/step - accuracy: 0.8843 - loss: 0.2482 -
val_accuracy: 0.8938 - val_loss: 0.2551
Epoch 25/100
146/146 ————— 0s 1ms/step - accuracy: 0.8850 - loss: 0.2701 -
val_accuracy: 0.9075 - val_loss: 0.2305

Epoch 26/100
146/146 ————— 0s 1ms/step - accuracy: 0.9002 - loss: 0.2408 -
val_accuracy: 0.8938 - val_loss: 0.2329

Epoch 27/100
146/146 ————— 0s 1ms/step - accuracy: 0.8916 - loss: 0.2533 -
val_accuracy: 0.8973 - val_loss: 0.2358

Epoch 28/100
146/146 ————— 0s 1ms/step - accuracy: 0.8900 - loss: 0.2541 -
val_accuracy: 0.9075 - val_loss: 0.2311

Epoch 29/100
146/146 ————— 0s 1ms/step - accuracy: 0.8908 - loss: 0.2546 -
val_accuracy: 0.8938 - val_loss: 0.2326

Epoch 30/100
146/146 ————— 0s 1ms/step - accuracy: 0.8848 - loss: 0.2685 -
val_accuracy: 0.9075 - val_loss: 0.2264

Epoch 31/100
146/146 ————— 0s 1ms/step - accuracy: 0.8942 - loss: 0.2490 -
val_accuracy: 0.9007 - val_loss: 0.2318

Epoch 32/100
146/146 ————— 0s 1ms/step - accuracy: 0.9081 - loss: 0.2307 -
val_accuracy: 0.9007 - val_loss: 0.2433

Epoch 33/100
146/146 ————— 0s 1ms/step - accuracy: 0.8881 - loss: 0.2375 -
val_accuracy: 0.8938 - val_loss: 0.2292

Epoch 34/100
146/146 ————— 0s 1ms/step - accuracy: 0.8828 - loss: 0.2535 -
val_accuracy: 0.8973 - val_loss: 0.2294

Epoch 35/100
146/146 ————— 0s 1ms/step - accuracy: 0.8955 - loss: 0.2362 -
val_accuracy: 0.9007 - val_loss: 0.2340

Epoch 36/100
146/146 ————— 0s 1ms/step - accuracy: 0.8954 - loss: 0.2463 -
val_accuracy: 0.9007 - val_loss: 0.2506

Epoch 37/100
146/146 ————— 0s 1ms/step - accuracy: 0.8928 - loss: 0.2575 -
val_accuracy: 0.8973 - val_loss: 0.2370

Epoch 38/100
146/146 ————— 0s 1ms/step - accuracy: 0.8912 - loss: 0.2537 -
val_accuracy: 0.8973 - val_loss: 0.2487

Epoch 39/100
146/146 ————— 0s 1ms/step - accuracy: 0.9079 - loss: 0.2079 -
val_accuracy: 0.8801 - val_loss: 0.2441

Epoch 40/100
146/146 ————— 0s 1ms/step - accuracy: 0.9026 - loss: 0.2250 -
val_accuracy: 0.8938 - val_loss: 0.2520

Epoch 41/100
146/146 ————— 0s 1ms/step - accuracy: 0.8928 - loss: 0.2336 -
val_accuracy: 0.9041 - val_loss: 0.2349

Epoch 42/100
146/146 ————— 0s 1ms/step - accuracy: 0.9163 - loss: 0.2347 -
val_accuracy: 0.8973 - val_loss: 0.2633

Epoch 43/100
146/146 ————— 0s 1ms/step - accuracy: 0.8937 - loss: 0.2464 -
val_accuracy: 0.8973 - val_loss: 0.2583

Epoch 44/100
146/146 ————— 0s 1ms/step - accuracy: 0.8914 - loss: 0.2309 -
val_accuracy: 0.8870 - val_loss: 0.2367

Epoch 45/100

146/146 ————— 0s 1ms/step - accuracy: 0.8951 - loss: 0.2602 -
val_accuracy: 0.8938 - val_loss: 0.2411
Epoch 46/100
146/146 ————— 0s 1ms/step - accuracy: 0.8980 - loss: 0.2294 -
val_accuracy: 0.9075 - val_loss: 0.2308
Epoch 47/100
146/146 ————— 0s 1ms/step - accuracy: 0.9066 - loss: 0.2305 -
val_accuracy: 0.8425 - val_loss: 0.3609
Epoch 48/100
146/146 ————— 0s 1ms/step - accuracy: 0.8977 - loss: 0.2492 -
val_accuracy: 0.8938 - val_loss: 0.2318
Epoch 49/100
146/146 ————— 0s 1ms/step - accuracy: 0.9127 - loss: 0.2340 -
val_accuracy: 0.8938 - val_loss: 0.2360
Epoch 50/100
146/146 ————— 0s 1ms/step - accuracy: 0.9071 - loss: 0.2240 -
val_accuracy: 0.8767 - val_loss: 0.3085
Epoch 51/100
146/146 ————— 0s 1ms/step - accuracy: 0.9038 - loss: 0.2331 -
val_accuracy: 0.9007 - val_loss: 0.2553
Epoch 52/100
146/146 ————— 0s 1ms/step - accuracy: 0.9118 - loss: 0.2269 -
val_accuracy: 0.8836 - val_loss: 0.2395
Epoch 53/100
146/146 ————— 0s 1ms/step - accuracy: 0.8796 - loss: 0.2871 -
val_accuracy: 0.8870 - val_loss: 0.2763
Epoch 54/100
146/146 ————— 0s 1ms/step - accuracy: 0.9056 - loss: 0.2183 -
val_accuracy: 0.8904 - val_loss: 0.2389
Epoch 55/100
146/146 ————— 0s 1ms/step - accuracy: 0.9085 - loss: 0.2183 -
val_accuracy: 0.8938 - val_loss: 0.2343
Epoch 56/100
146/146 ————— 0s 1ms/step - accuracy: 0.8982 - loss: 0.2184 -
val_accuracy: 0.9041 - val_loss: 0.2472
Epoch 57/100
146/146 ————— 0s 1ms/step - accuracy: 0.8934 - loss: 0.2364 -
val_accuracy: 0.8904 - val_loss: 0.2335
Epoch 58/100
146/146 ————— 0s 1ms/step - accuracy: 0.8869 - loss: 0.2501 -
val_accuracy: 0.8836 - val_loss: 0.2623
Epoch 59/100
146/146 ————— 0s 1ms/step - accuracy: 0.9051 - loss: 0.2395 -
val_accuracy: 0.8836 - val_loss: 0.2369
Epoch 60/100
146/146 ————— 0s 1ms/step - accuracy: 0.8994 - loss: 0.2323 -
val_accuracy: 0.8973 - val_loss: 0.2365
Epoch 61/100
146/146 ————— 0s 1ms/step - accuracy: 0.9028 - loss: 0.2522 -
val_accuracy: 0.9007 - val_loss: 0.2350
Epoch 62/100
146/146 ————— 0s 1ms/step - accuracy: 0.9023 - loss: 0.2217 -
val_accuracy: 0.8836 - val_loss: 0.3295
Epoch 63/100
146/146 ————— 0s 1ms/step - accuracy: 0.9109 - loss: 0.2113 -
val_accuracy: 0.8904 - val_loss: 0.2907
Epoch 64/100
146/146 ————— 0s 1ms/step - accuracy: 0.8930 - loss: 0.2467 -

val_accuracy: 0.8973 - val_loss: 0.2420
Epoch 65/100
146/146 ————— 0s 1ms/step - accuracy: 0.8880 - loss: 0.2498 -
val_accuracy: 0.9007 - val_loss: 0.2441
Epoch 66/100
146/146 ————— 0s 1ms/step - accuracy: 0.8845 - loss: 0.2493 -
val_accuracy: 0.8973 - val_loss: 0.2446
Epoch 67/100
146/146 ————— 0s 1ms/step - accuracy: 0.9046 - loss: 0.2175 -
val_accuracy: 0.8973 - val_loss: 0.2361
Epoch 68/100
146/146 ————— 0s 1ms/step - accuracy: 0.9024 - loss: 0.2192 -
val_accuracy: 0.8973 - val_loss: 0.2410
Epoch 69/100
146/146 ————— 0s 1ms/step - accuracy: 0.9095 - loss: 0.2254 -
val_accuracy: 0.8767 - val_loss: 0.2466
Epoch 70/100
146/146 ————— 0s 1ms/step - accuracy: 0.8954 - loss: 0.2342 -
val_accuracy: 0.8801 - val_loss: 0.2405
Epoch 71/100
146/146 ————— 0s 1ms/step - accuracy: 0.9017 - loss: 0.2374 -
val_accuracy: 0.8801 - val_loss: 0.2782
Epoch 72/100
146/146 ————— 0s 1ms/step - accuracy: 0.9254 - loss: 0.2055 -
val_accuracy: 0.8904 - val_loss: 0.2366
Epoch 73/100
146/146 ————— 0s 1ms/step - accuracy: 0.9145 - loss: 0.2025 -
val_accuracy: 0.9007 - val_loss: 0.2333
Epoch 74/100
146/146 ————— 0s 1ms/step - accuracy: 0.9082 - loss: 0.2147 -
val_accuracy: 0.8973 - val_loss: 0.2410
Epoch 75/100
146/146 ————— 0s 1ms/step - accuracy: 0.9178 - loss: 0.2195 -
val_accuracy: 0.8904 - val_loss: 0.2395
Epoch 76/100
146/146 ————— 0s 1ms/step - accuracy: 0.9264 - loss: 0.1944 -
val_accuracy: 0.8904 - val_loss: 0.2413
Epoch 77/100
146/146 ————— 0s 1ms/step - accuracy: 0.9186 - loss: 0.2403 -
val_accuracy: 0.8973 - val_loss: 0.2494
Epoch 78/100
146/146 ————— 0s 1ms/step - accuracy: 0.8860 - loss: 0.2487 -
val_accuracy: 0.8767 - val_loss: 0.2489
Epoch 79/100
146/146 ————— 0s 1ms/step - accuracy: 0.8983 - loss: 0.2314 -
val_accuracy: 0.8904 - val_loss: 0.2827
Epoch 80/100
146/146 ————— 0s 1ms/step - accuracy: 0.9173 - loss: 0.1799 -
val_accuracy: 0.8904 - val_loss: 0.2394
Epoch 81/100
146/146 ————— 0s 1ms/step - accuracy: 0.8997 - loss: 0.2321 -
val_accuracy: 0.9007 - val_loss: 0.2591
Epoch 82/100
146/146 ————— 0s 1ms/step - accuracy: 0.9038 - loss: 0.2166 -
val_accuracy: 0.9041 - val_loss: 0.2631
Epoch 83/100
146/146 ————— 0s 1ms/step - accuracy: 0.9037 - loss: 0.2331 -
val_accuracy: 0.8973 - val_loss: 0.2371

Epoch 84/100
146/146 ————— 0s 1ms/step - accuracy: 0.8951 - loss: 0.2453 -
val_accuracy: 0.8733 - val_loss: 0.2440
Epoch 85/100
146/146 ————— 0s 1ms/step - accuracy: 0.9186 - loss: 0.2216 -
val_accuracy: 0.8836 - val_loss: 0.2436
Epoch 86/100
146/146 ————— 0s 1ms/step - accuracy: 0.9100 - loss: 0.2008 -
val_accuracy: 0.8870 - val_loss: 0.2402
Epoch 87/100
146/146 ————— 0s 1ms/step - accuracy: 0.9158 - loss: 0.2016 -
val_accuracy: 0.8938 - val_loss: 0.2333
Epoch 88/100
146/146 ————— 0s 1ms/step - accuracy: 0.9111 - loss: 0.2012 -
val_accuracy: 0.9007 - val_loss: 0.2597
Epoch 89/100
146/146 ————— 0s 1ms/step - accuracy: 0.9110 - loss: 0.2336 -
val_accuracy: 0.8870 - val_loss: 0.2398
Epoch 90/100
146/146 ————— 0s 1ms/step - accuracy: 0.8936 - loss: 0.2346 -
val_accuracy: 0.8904 - val_loss: 0.2405
Epoch 91/100
146/146 ————— 0s 1ms/step - accuracy: 0.9073 - loss: 0.2327 -
val_accuracy: 0.8938 - val_loss: 0.2409
Epoch 92/100
146/146 ————— 0s 1ms/step - accuracy: 0.9079 - loss: 0.2064 -
val_accuracy: 0.8904 - val_loss: 0.2421
Epoch 93/100
146/146 ————— 0s 1ms/step - accuracy: 0.9208 - loss: 0.1909 -
val_accuracy: 0.8973 - val_loss: 0.2397
Epoch 94/100
146/146 ————— 0s 1ms/step - accuracy: 0.9181 - loss: 0.2026 -
val_accuracy: 0.8973 - val_loss: 0.2513
Epoch 95/100
146/146 ————— 0s 1ms/step - accuracy: 0.8967 - loss: 0.2185 -
val_accuracy: 0.8973 - val_loss: 0.2474
Epoch 96/100
146/146 ————— 0s 1ms/step - accuracy: 0.9090 - loss: 0.2117 -
val_accuracy: 0.8973 - val_loss: 0.2535
Epoch 97/100
146/146 ————— 0s 1ms/step - accuracy: 0.9127 - loss: 0.1962 -
val_accuracy: 0.8938 - val_loss: 0.2513
Epoch 98/100
146/146 ————— 0s 1ms/step - accuracy: 0.9055 - loss: 0.2386 -
val_accuracy: 0.8938 - val_loss: 0.2441
Epoch 99/100
146/146 ————— 0s 2ms/step - accuracy: 0.8957 - loss: 0.2521 -
val_accuracy: 0.8938 - val_loss: 0.2371
Epoch 100/100
146/146 ————— 0s 1ms/step - accuracy: 0.9207 - loss: 0.2116 -
val_accuracy: 0.8938 - val_loss: 0.2437
5/5 ————— 0s 2ms/step - accuracy: 0.9313 - loss: 0.2030
The Value of the Loss Function 0.23565618693828583
The Value of the Accuracy Function 0.9109588861465454
5/5 ————— 0s 11ms/step
Precision: 88.0
Recall: 92.0
F1 Score: 90.0

Process finished with exit code 0