


```

# Create a pandas DataFrame with columns:
# 'Category', 'Subcategory', 'Value'
# and rows:
# 1. 'Electronics', 'Smartphones', 1000
# 2. 'Electronics', 'Laptops', 800
# 3. 'Electronics', 'Tablets', 500
# 4. 'Clothing', 'Shirts', 300
# 5. 'Clothing', 'Pants', 200
# 6. 'Clothing', 'Shoes', 150
# 7. 'Home', 'Furniture', 1200
# 8. 'Home', 'Decor', 800
# 9. 'Home', 'Garden', 600
# 10. 'Food', 'Groceries', 400
# 11. 'Food', 'Snacks', 250
# 12. 'Food', 'Beverages', 150
# 13. 'Toys', 'Action Figures', 100
# 14. 'Toys', 'Board Games', 75
# 15. 'Toys', 'Stuffed Animals', 50
# 16. 'Books', 'Fiction', 300
# 17. 'Books', 'Non-Fiction', 200
# 18. 'Books', 'Children's', 150
# 19. 'Garden', 'Flowers', 100
# 20. 'Garden', 'Vegetables', 75
# 21. 'Garden', 'Fruit Trees', 50
# 22. 'Tools', 'Power Tools', 150
# 23. 'Tools', 'Hand Tools', 100
# 24. 'Tools', 'Garden Tools', 75
# 25. 'Sports', 'Soccer', 100
# 26. 'Sports', 'Basketball', 75
# 27. 'Sports', 'Baseball', 50
# 28. 'Sports', 'Tennis', 25
# 29. 'Sports', 'Swimming', 25
# 30. 'Sports', 'Cycling', 25
# 31. 'Pets', 'Dogs', 100
# 32. 'Pets', 'Cats', 75
# 33. 'Pets', 'Birds', 50
# 34. 'Pets', 'Fish', 25
# 35. 'Pets', 'Reptiles', 25
# 36. 'Hobbies', 'Gardening', 100
# 37. 'Hobbies', 'Cooking', 75
# 38. 'Hobbies', 'Reading', 50
# 39. 'Hobbies', 'Golfing', 25
# 40. 'Hobbies', 'Fishing', 25
# 41. 'Hobbies', 'Horseback Riding', 25
# 42. 'Hobbies', 'Jogging', 25
# 43. 'Hobbies', 'Yoga', 25
# 44. 'Hobbies', 'Dancing', 25
# 45. 'Hobbies', 'Painting', 25
# 46. 'Hobbies', 'Sewing', 25
# 47. 'Hobbies', 'Knitting', 25
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# 60. 'Hobbies', 'Jogging', 25
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# 83. 'Hobbies', 'Knitting', 25
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# 85. 'Hobbies', 'Fishing', 25
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# 87. 'Hobbies', 'Jogging', 25
# 88. 'Hobbies', 'Yoga', 25
# 89. 'Hobbies', 'Dancing', 25
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# 94. 'Hobbies', 'Fishing', 25
# 95. 'Hobbies', 'Horseback Riding', 25
# 96. 'Hobbies', 'Jogging', 25
# 97. 'Hobbies', 'Yoga', 25
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# 103. 'Hobbies', 'Fishing', 25
# 104. 'Hobbies', 'Horseback Riding', 25
# 105. 'Hobbies', 'Jogging', 25
# 106. 'Hobbies', 'Yoga', 25
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# 113. 'Hobbies', 'Horseback Riding', 25
# 114. 'Hobbies', 'Jogging', 25
# 115. 'Hobbies', 'Yoga', 25
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# 118. 'Hobbies', 'Sewing', 25
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# 129. 'Hobbies', 'Golfing', 25
# 130. 'Hobbies', 'Fishing', 25
# 131. 'Hobbies', 'Horseback Riding', 25
# 132. 'Hobbies', 'Jogging', 25
# 133. 'Hobbies', 'Yoga', 25
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# 140. 'Hobbies', 'Horseback Riding', 25
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# 166. 'Hobbies', 'Fishing', 25
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# 205. 'Hobbies', 'Yoga', 25
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# 222. 'Hobbies', 'Jogging', 25
# 223. 'Hobbies', 'Yoga', 25
# 224. 'Hobbies', 'Dancing', 25
# 225. 'Hobbies', 'Painting', 25
# 226. 'Hobbies', 'Sewing', 25
# 227. 'Hobbies', 'Knitting', 25
```

But even so there are other categories. Nature, for example, is not said to have more than an *indirect* relation.

[illegible][illegible]

Year	Setting Price	Market Price	Rate Differ	Exp. Type	Sett. Type	Transaction	Value
4-2014	1.10	1.10	0.00	Pre-L	Close	Normal	1
4-2013	4.10	4.10	0.00	Close	Close	Normal	2
2-2017	1.10	0.90	0.20	Pre-L	Close	Normal	1
8-2013	1.10	0.90	0.20	Pre-L	Close	Normal	1
4-2014	4.10	0.90	3.20	Close	Close	Normal	2

4) Do you want the year it will be born from purchased?
 And how do you estimate the number of years of full-time work?

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```

    def __init__(self, num_embeddings, embedding_dim):
        self.embedding = nn.Embedding(num_embeddings, embedding_dim)
        self.relu = nn.ReLU()

```

	Selling Price	Purchase Price	Acq. Silver	Fee Type	Refill Type	Approximate Date	No. of years
1	1.00	0.50	2000	Acq.	Steel	1960	1
2	0.75	0.25	1000	Steel	Steel	1960	2
3	1.25	0.75	500	Steel	Steel	1960	3
4	1.50	1.00	100	Acq.	Steel	1960	4
5	1.00	0.50	5000	Steel	Steel	1960	5

```

11  print get_features(0, axes, kurt+tree)
12  print "\n"

```

Listing Price	Asking Price	Days Since Listed	Owner	No. of Bids	Final Price (Bid)	Final Cash Price	Listing Type	Listing Status	Transaction Fee
\$	1.00	1.00	1.00	1	1	1	1	1	1

1	475	0.36	4000	2	1	1	1	1
2	720	0.09	800	1	1	1	1	1
4	110	0.10	800	2	0	0	1	0
4	440	0.07	4000	1	1	1	1	1

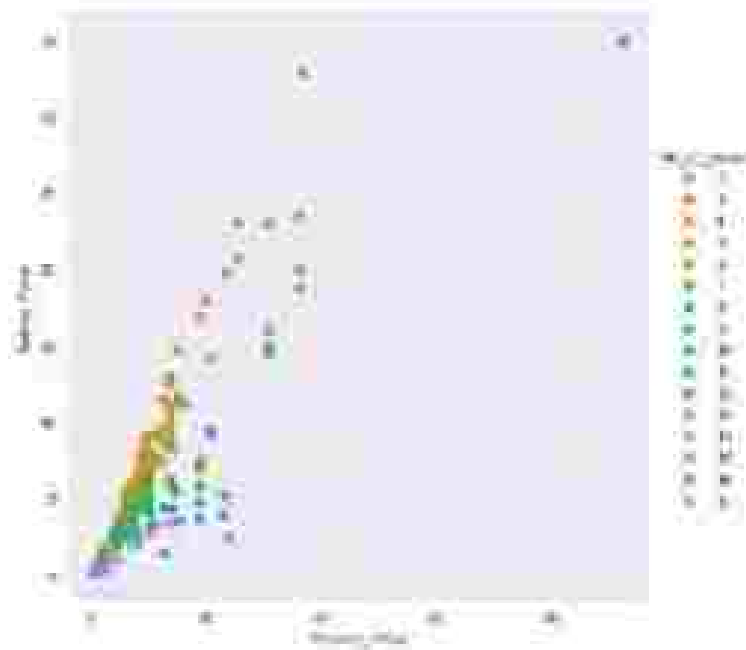
	Selling Price	Purchase Price	Res. Price	Owner	No. of years	Full Time Owner	Full Time Price	Other Time Price
Selling Price	1.00000	1.00000	1.00000	1.00000	0.25000	1.00000	1.00000	0.00
Purchase Price	0.00000	1.00000	0.00000	1.00000	0.00000	0.00000	1.00000	0.00
Res. Price	0.00000	0.00000	1.00000	1.00000	0.00000	0.00000	0.00000	0.00
Owner	0.00000	0.00000	0.00000	1.00000	0.00000	0.00000	0.00000	0.00
No. of years	0.00000	0.00000	0.00000	0.00000	1.00000	0.00000	0.00000	0.00
Full Time Owner	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000	0.00000	0.00
Full Time Price	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000	0.00
Other Time Price	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00
Sale Time Interval	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00
Purchase Method	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00

Data Visualization

```

sns.relplot(x="Selling Price", y="Purchase Price", hue="No. of years",
            data=df, marker="circle", legend=True, style="Full Time Owner",
            col="Full Time Owner", row="Full Time Price")

```



show number of years and full time owner for each data point

```

sns.relplot(x="Selling Price", y="Purchase Price", hue="No. of years",
            data=df, marker="circle", legend=True, style="Full Time Owner",
            col="Full Time Owner", row="Full Time Price")

```





Fig 1.1

4.1.10

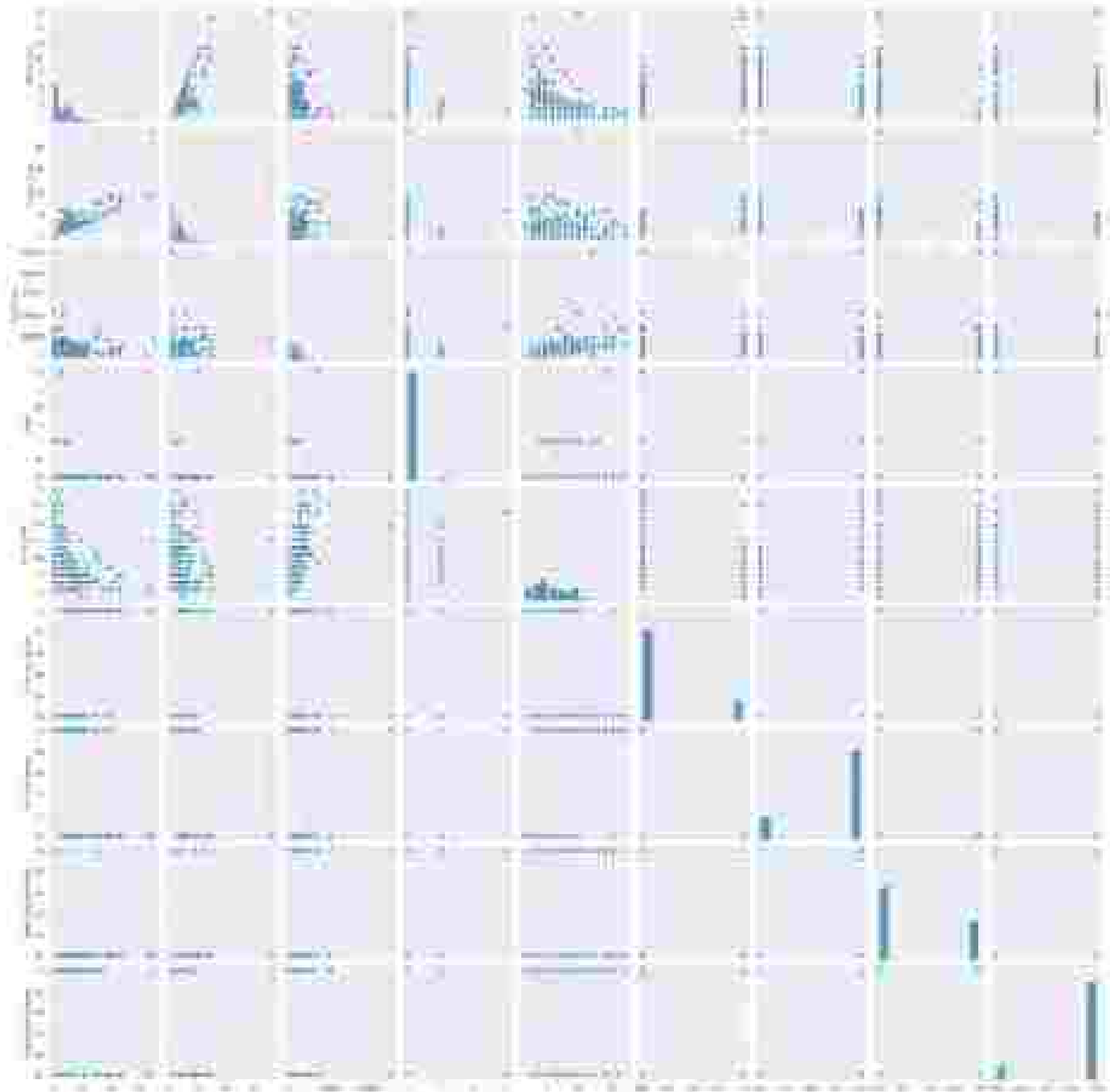
Change the color of the data points with the same color as the price of the house. (e.g. yellow < 2000000, blue 2000000 < 3000000, red 3000000 < 4000000, etc.)

4.1.11

price > 1000000

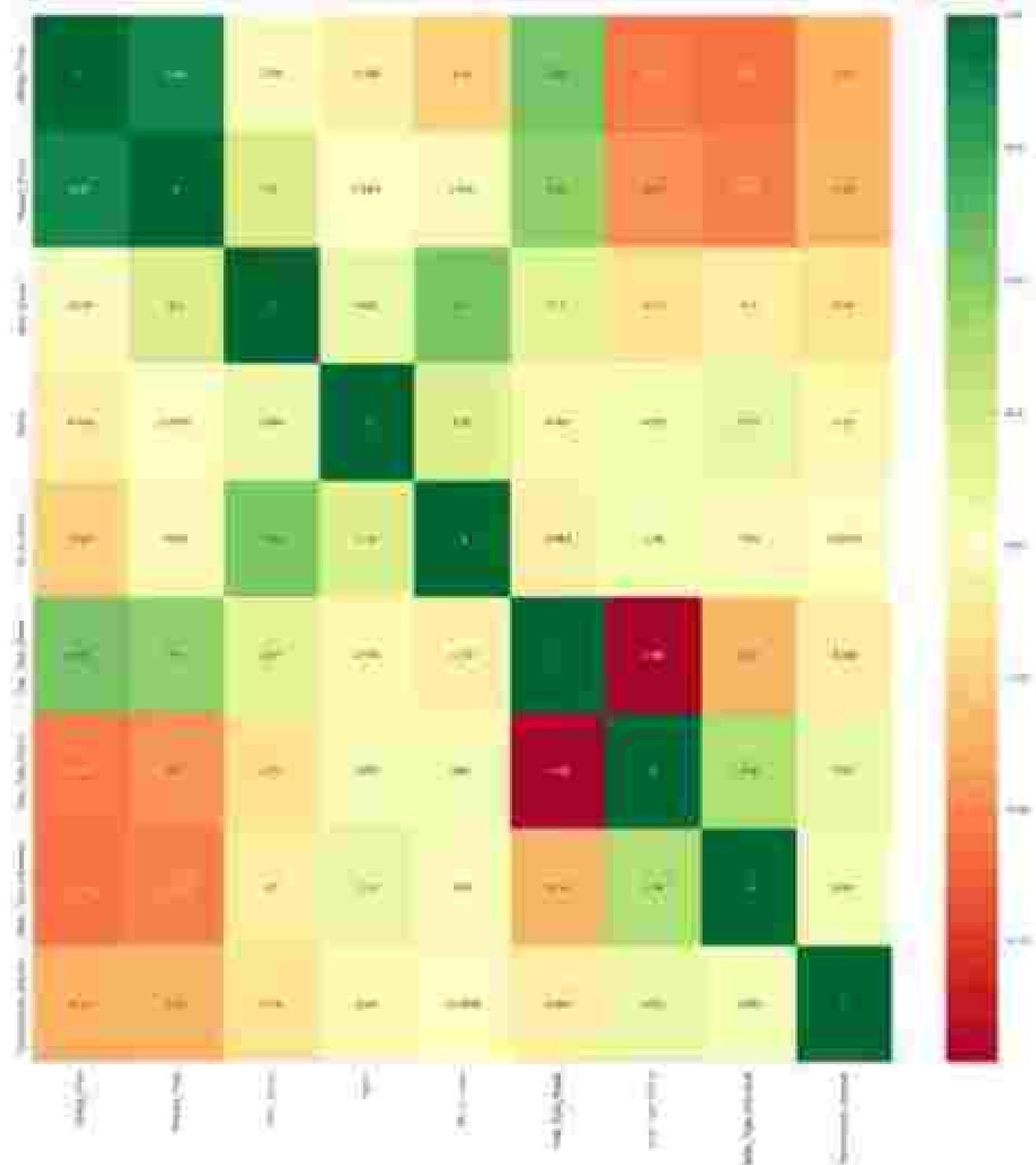
4.1.12

Median, average, standard deviation



```
## Add the new column with the correlation of the new variable with the original variables (see also A6)
```

```
## Add the new column with the correlation of the new variable with the original variables (see also A6)
correlation = c()
for (i in 1:nrow(data)) {
  correlation[i] = cor.test(data[,new_var], data[,old_var])$p.value
}
data = data.frame(data, correlation)
```



```
## Add the new column with the correlation of the new variable with the original variables (see also A6)
```

```
## Add the new column with the correlation of the new variable with the original variables (see also A6)
correlation = c()
for (i in 1:nrow(data)) {
  correlation[i] = cor.test(data[,new_var], data[,old_var])$p.value
}
```

17. <http://www.irs.gov/efile>

Figure 1. The effect of the concentration of the inhibitor on the rate of polymerization.

15 August 2017

Year	Amount Paid	From Budget	From Other	Total	From Budget	From Other	Total	From Budget	From Other	Total
1	100	100	0	100	100	0	100	100	0	100
2	100	100	0	100	100	0	100	100	0	100
3	100	100	0	100	100	0	100	100	0	100
4	100	100	0	100	100	0	100	100	0	100
5	100	100	0	100	100	0	100	100	0	100
6	100	100	0	100	100	0	100	100	0	100

WATERGATE

[illegible]

```
from sklearn.metrics import confusion_matrix
import numpy as np
y_act = y_test.numpy()
y_hat = y_hat.numpy()
```

1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 26

[illegible]

19. 4076.964 0.2620479 0.0004401 0.3700021 0.2100440 0.0147004
0.0011200 0.0000000

[illegible]

```

C:\Users\johnd>cd C:\Program Files\Foxit Software\Foxit Reader
C:\Program Files\Foxit Software\Foxit Reader>foxit reader.exe %*

```

Figure 14.20: A diagram illustrating the relationship between the number of nodes and the number of edges in a tree. The diagram shows a tree structure with 5 nodes and 4 edges. The nodes are labeled 1 through 5, and the edges are labeled 1 through 4. The tree is rooted at node 1, which has two children, nodes 2 and 3. Node 2 has one child, node 4, and node 3 has one child, node 5. The edges are labeled 1 through 4, corresponding to the connections between the nodes.

TABLE 1

```

x = x + 1;
while (true) {
    if (x == 10) break;
    print(x);
}

```

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```

# Number of states to remove from
n_states_to_remove = 1000000 # See e.g. 20 Apr 2016 email about 1000000, 10000000, 100000000
# Number of features to remove at each state
n_features_to_remove = 1 # None, 1
# Number of trials to try
n_trials = 10000 # See e.g. 20 Apr 2016 email about 10000, 100000, 1000000
# Use single environment
n_episodes = 1 # None, 1
# Number of samples required to split a set
n_samples_split = 10 # 5, 10, 100
# Number of samples required to split a leaf node
n_samples_leaf = 1 # 2, 3, 10

```

[illegible]

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[illegible]

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Listing 3: Code for each of the conditions, controlling for  $\eta$ 
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[02] for n12=1:10; for n13=1:10; for n14=1:10; for n15=1:10; for n16=1:10; for n17=1:10;
[03] for n18=1:10; for n19=1:10; for n20=1:10; for n21=1:10; for n22=1:10; for n23=1:10;
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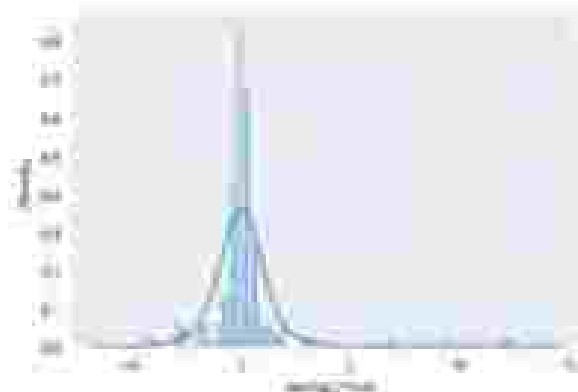
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1. Introduction

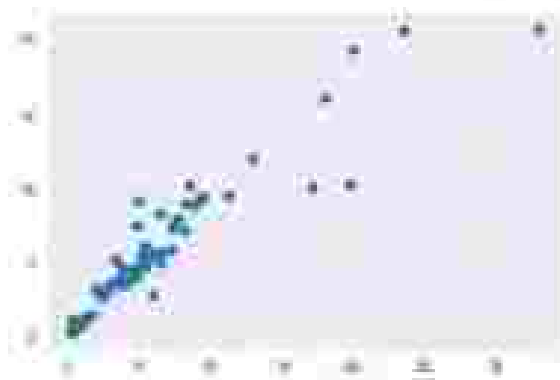
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100% CATIONIC POLYMERIZATION

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2. On 24-08-2018, the following information was received from the concerned authorities:

```
#include <stdio.h>
int main() {
    int a[10];
    printf("Enter 10 numbers: ");
    for(int i=0; i<10; i++)
        scanf("%d", &a[i]);
    printf("Sum = %d\n", sum(a));
}
```

```
in __main__:
    import pickle
    # open a file, where you get to write the data
    file = open('pickle.pickle', 'wb')
    # dump information to that file
    pickle.dump(my_object, file)
```

5-4)

11-1

11-2

5-1

5-2)

4-1-1)

4-1-2

11-1

5-2)

<https://docs.python.org/3.7/library/pickle.html>