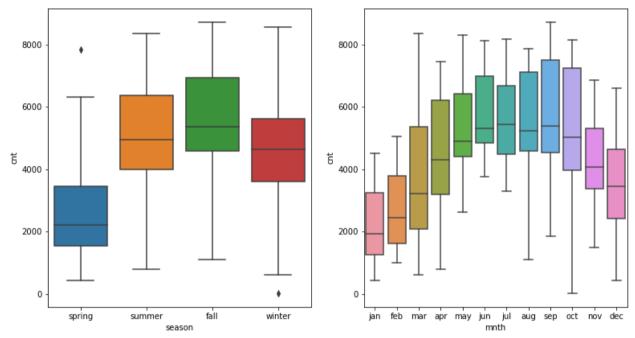
Assignment-based Subjective Questions

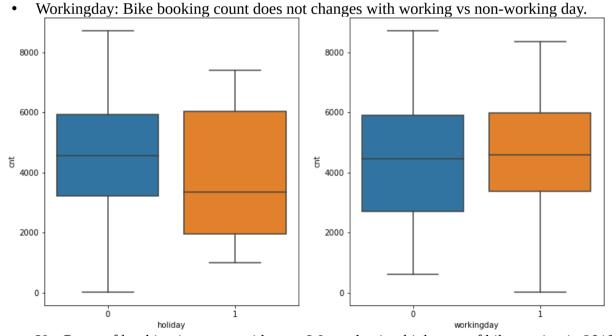
1. From your analysis of the categorical variables from the dataset, what could you infer about their effect on the dependent variable? (3 marks)

Answer: We are having the following catagorical features in the dataset:

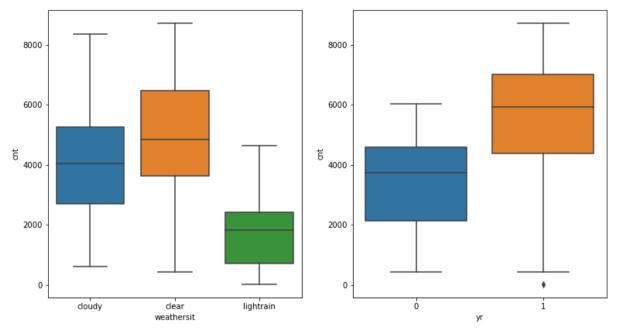
- Season: Counts of rented bikes depends on season, cnt increases in Fall and Summer season and it gets decreases with winter and spring
- mnth: Cnt varies with months as we are having higher booking with May, June, July, August, and September. And booking drcreases with Winters month.



• Holiday: Cnt depends on holiday. On non-holiday we are having higher cnt value.



 Yr: Count of booking increases with year. We are having higher no of bike renting in 2019 year compared to 2018.



• Weathersit: Weathersit affects the bike booking. Clear weather attracts the customers and have higher booking then cloudy and then light rain.

2. Why is it important to use drop_first=True during dummy variable creation? (2 mark)

Answer: When we are converting the catagorical features to numeric feature. So that these can be scalarized. We break the single column into the all possible probable columns and fill the values between 0 and 1.

For example: We are having the following catagorical feature:

Season	
summer	
winter	
fall	
spring	

And it will be converted to following table:

summer	Winter	Fall	spring
1	0	0	0
0	1	0	0
0	0	1	0
0	0	0	1

But we can extract the information with with 1 less column like if all the values are zero the we can assume it would be the final option and we can have the following table:

Winter	Fall	spring
0	0	0
1	0	0
0	1	0
0	0	1

As we can see 4 colums are reduced to 3 columns.

3. Looking at the pair-plot among the numerical variables, which one has the highest correlation with the target variable? (1 mark)

Answer: temp attribute is having the highest correlation with cnt (target variable) with 0.63 value.

holiday 0.008. 1 4.0.25-0.029-0.0160.00630.0690.035-0.024-0.017-0.019-0.03-0.0520.00640.012-0.0360.00640.052-0.0520.00640.0082.028 4.0.071-0.0710.023-0.047-0.041 53 0 023 0.019 0 063 0.028 0 015 0.0046 0 049 0 029 0 038 0 0150 00310 0250 015 0 021 0 028 0 00650 0110 0040 011 0 15 40.6 40.6 0 26 0 27 0 2 049-0.0290 053 1 0.13 0.16 0.63 0.62 0.15 0.23 0.0960 058 0.35 0.29 0.31 0.43 0.43 0.31 0.17 0.17 0.21 0.018 0.2 0.00480.03 0.027 0.019 0.019 0.019 -08 hum - 0.11 - 0.160 023 013 1 0.25 - 0.099 - 0.180 0029 0.16 0.49 0.27 0.022 0.002 0.13 - 0.09 - 0.064 - 0.11 - 0.084 0.13 - 0.0058 0.14 0.18 0.029 - 0.023 2e-05 - 0.052 0.041 0.0 windspeed -0.0120.00630.019-0.16-0.25 1 0.24 0.18 0.097 0.14-0.037 0.12-0.0690.055 0.096 0.062-0.096-0.02 0.13 0.03 0.026-0.06-0.095.0001 0.032 0.010.00580.007-0.014 cnt - 057 - 0.069 0.063 0.063 0.099 0.24 1 0.56 0.15 0.065 -0.17 0.24 0.18 -0.17 0.27 0.37 0.17 0.2 0.13 0.13 0.04 0.11 0.19 0.036 0.009 0.059 0.030 0.000 0.059 0.6 summer 4.8e-170.024:015 0.15 0.0025:097 0.15 0.33 1 0.33 0.4 0.043-0.18 0.18 0.18 0.18 0.29 0.072 0.52 0.17 0.18 0.17 0.0480.0048.0048.0048.0018.0019.0019 winter 4 1e-16 0170.00460.23 016 0.14 0.065 0.32 0.33 1 0.034 0.093 0.17 0.28 0.16 0.17 0.17 0.17 0.17 0.17 0.17 0.53 0.54 0.16 0.016 0.003@.005@.003@.005@.001 doudy -0.00580 019 0 049 -0.096 0 49 -0.096 0 49 -0.037 -0.17 0 029 0 04 0 034 1 -0.12 -0.02 0 063 0.0095 0 32 -0.11 -0.066 0 032 0 043 -0.055 0 043 0 0.055 0 043 0 0.05 0 044 0 013 -0.011 0.0440 00870 0 24 0 023 0.4 lightrain -0.074-0.03 0.029-0.058 0.27 0.12 0.24-0.022-0.043 0.093 0.12 1 0.052 0.036-0.019-0.023-0.052 0.0640-0.052 0.038 0.095 0.038-0.024 0.023-0.048 0.0019-0.024 0.024 0.025 0.038 0.095 0.038 0.024 0.023-0.048 0.0019-0.024 0.024 0.025 0.038 0.024 0.023-0.048 0.0019-0.024 dec 378-1800640.015-0.29 0.082-0.055-0.17 0.077 0.18 0.28 0.063-0.036-0.093 1 0.088-0.093-- 0.2 feb = 8e-1600120.0031-0.31 -0.13 -0.096 -0.27 -0.5 -0.17 -0.16-0.00950 019-0.088-0.088 -0.088-0.088-0.088-0.088-0.088-0.088-0.088-0.088-0.088-0.088-0.008-0. pan \$56-170.036.0.025-0.43-0.09-0.062-0.37-0.53-0.18-0.17-0.032-0.0230.093-0.093-0.086-1-0.093-0.091-0.093-0.091-0.093-0.091-0.093-0.091-0.150.0012-0.150.0023-0.011 ы 3.5e-10.00640.015 0.43 0.0640.096 017 0.17 0.18 0.17 0.11 0.0230.0930.0930.0930.093 1 0.0910.0930.0930.0930.0930.0930.0910.0930.0910.00120.00120.00120.00120.00130.00 - 0.0 mar 1 6e-160.052 0 028 0 0.17 0 0.084 0 13 0 0.13 0 28 0 072 0 0.17 0 0 034 0 0.13 0 0.13 0 0.13 0 0.13 0 0.13 0 0.13 0 0.14 0 0.000 may 7.7e-18006-0.0065 0.17 0.13 0.03 0.13 0.17 0.52 0.17 0.52 0.17 0.043 0.052 0.093 0.003 0.003 0.003 0.003 0.003 0.003 0.003 0.003 0.003 0.003 0.003 0.003 0.003 0.003 0.003 0.003 0.003 0.003 oct 8.6e-18.00640.0040.018 0.14 0.06 0.11 0.17 0.18 0.54 0.043 0.095 0.093.0.003.0.0 --0.2 920 2 18-1000820 011 02 0.18 0.095 0.19 0.017 0.17 0.016 0.04 0.038 0.0910.0910.0860.0910.09-0.0910.09-0.0910.09-0.0910.09-0.0910.09-0.091 monday 0.003 0.28 0.15 0.0048 0.02 0.001 0.036 0.009 0.001 0.036 0.0099 0.048 0.020 0.001 0.036 0.0099 0.015 0.0008 0.015 0.0012 0.009 0.015 0.009 0.000 0.0 satuarday -0.00390.071 -0.6 | 0.03 -0.023 -0.032 -0.009 -0.01-0.00420.00550 0.11 -0.23 -0.013 -0.15-0.0008 0.0120.00120.00530 0.0120 0.013 -0.090 0.0120.0053 -0.17 | 1 | 0.17 -0.17 -0.17 -0.17 -0.17 --0.4 sunday 000390.071 0.6 0.027 2e-05 0.01 0.059 0.01-0.059 0.01-0.004200360.044-0.0470.0130.00120.0008:015 0.015 0.0090.0130.00120.0093.0120.0053-0.17 -0.17 -0.17 -0.17 -0.17 thrusday 4.1e-1-0.023 0.26 0.019-0.0520.0058-03-0.0058-0.018-0.03-0.008700018-0.0320.008700018-0.0230.00230.00230.00230.0065-0.160.00230.0065-0.012-0.065-0.17-0.17 0.17 0.17 0.17 Lucsday -2e-16-0.047 027 0.019 0.041 0.0070.00056 0.059 0.019 0.024 0.0240 0.0230 0.018 0.0038 0.0230 0.0230 0.0230 0.0230 0.016 0.00650 0.0230 0.078 0.17 -0.17 -0.17 -0.17 wednesday -0.00390.046 0.27 0.023 0.046-0.014 0.014 0.014 0.0130.00940.00110.023 0.095 0.018-0.0110.00150.0110.0110.00770.00360.00360.00360.00670.17 -0.17 -0.17 -0.17 -0.17 -0.17