CSE455 Machine Learning Homework 1

Sedef Erdoğdu, 1801042102

April 9, 2023

0.1 Import Necessary Libraries

```
[1]: import numpy as np
     import pandas as pd
     import math
     from sklearn.metrics import accuracy_score
     from sklearn.metrics import mean_squared_error
     from sklearn.svm import SVR
     from sklearn.model_selection import KFold
     from sklearn.metrics import confusion_matrix
     import scikitplot as skplt
     import matplotlib.pyplot as plt
     from sklearn.metrics import classification_report
     from sklearn.metrics import roc_curve
     from sklearn import metrics
     from sklearn.svm import SVC
     from sklearn import tree
     from sklearn.metrics import mean_absolute_error
     import time
```

0.2 Read Datasets

Reading audit dataset

3 10.80

6.0 ...

0.4

```
[2]: audit_risk_data = pd.read_csv("audit_data/audit_risk.csv")
     audit_risk_data.head()
[2]:
        Sector_score LOCATION_ID PARA_A Score_A Risk_A PARA_B
                                                                     Score_B Risk_B \
     0
                3.89
                               23
                                     4.18
                                               0.6
                                                      2.508
                                                               2.50
                                                                         0.2
                                                                                0.500
                3.89
                                     0.00
                                               0.2
                                                               4.83
     1
                                6
                                                      0.000
                                                                         0.2
                                                                                0.966
     2
                3.89
                                6
                                     0.51
                                               0.2
                                                               0.23
                                                                         0.2
                                                                                0.046
                                                      0.102
     3
                3.89
                                     0.00
                                               0.2
                                                      0.000
                                                              10.80
                                                                         0.6
                                                                                6.480
                3.89
                                     0.00
                                               0.2
                                                      0.000
                                                               0.08
                                                                         0.2
                                                                                0.016
        TOTAL numbers
                             RiSk_E History Prob Risk_F
                                                              Score
                                                                     Inherent_Risk \
                        . . .
         6.68
                   5.0
                                 0.4
                                                0.2
                                                         0.0
     0
                                                                2.4
                                                                             8.574
     1
         4.83
                   5.0
                                 0.4
                                                0.2
                                                         0.0
                                                                2.0
                                                                             2.554
                       . . .
         0.74
                                 0.4
                                                0.2
                   5.0
                                                         0.0
                                                                2.0
                                                                             1.548
```

0.2

0.0

4.4

17.530

```
0 0.2
                                                        0.0
        0.08
                   5.0 ...
                                 0.4
                                                                2.0
                                                                             1.416
        CONTROL_RISK Detection_Risk
                                       Audit_Risk Risk
     0
                 0.4
                                  0.5
                                           1.7148
                                                       1
     1
                 0.4
                                  0.5
                                           0.5108
                                                      0
                 0.4
                                  0.5
                                                      0
     2
                                           0.3096
     3
                 0.4
                                  0.5
                                           3.5060
                                                       1
     4
                 0.4
                                  0.5
                                                      0
                                           0.2832
     [5 rows x 27 columns]
[3]: audit_risk_data.shape
[3]: (776, 27)
[4]:
     audit_risk_data.columns
[4]: Index(['Sector_score', 'LOCATION_ID', 'PARA_A', 'Score_A', 'Risk_A', 'PARA_B',
            'Score_B', 'Risk_B', 'TOTAL', 'numbers', 'Score_B.1', 'Risk_C',
            'Money_Value', 'Score_MV', 'Risk_D', 'District_Loss', 'PROB', 'RiSk_E',
            'History', 'Prob', 'Risk_F', 'Score', 'Inherent_Risk', 'CONTROL_RISK',
            'Detection_Risk', 'Audit_Risk', 'Risk'],
           dtype='object')
    Check whether there is null value or not
[5]: audit_risk_data.isnull().sum()
[5]: Sector_score
     LOCATION_ID
                       0
    PARA_A
                       0
     Score_A
                       0
    Risk_A
                       0
                       0
    PARA_B
                       0
     Score_B
    Risk B
                       0
    TOTAL
                       0
    numbers
                       0
     Score_B.1
                       0
    Risk_C
                       0
    Money_Value
                       1
     Score_MV
                       0
                       0
     Risk_D
                       0
     District_Loss
     PROB
                       0
     RiSk_E
                       0
    History
                       0
```

0

Prob

```
Risk_F 0
Score 0
Inherent_Risk 0
CONTROL_RISK 0
Detection_Risk 0
Audit_Risk 0
Risk 0
dtype: int64
```

According to this result, there is null value in dataset.

```
[6]: print("Mode: {}".format(audit_risk_data.Money_Value.mode()))
    print("Mean: {}".format(audit_risk_data.Money_Value.mean()))
    print("Median: {}".format(audit_risk_data.Money_Value.median()))
```

Mode: 0 0.0

Name: Money_Value, dtype: float64

Mean: 14.137630967741934

Median: 0.09

Fill the null value with mean.

```
[7]: audit_risk_data['Money_Value'] = audit_risk_data['Money_Value'].

ofillna(audit_risk_data.Money_Value.mean())
```

Check if there is a still null value or not

```
[8]: audit_risk_data.isnull().sum()
```

```
0
[8]: Sector_score
     LOCATION_ID
                        0
                        0
     PARA_A
     Score_A
                        0
     Risk_A
                        0
     PARA_B
                        0
                        0
     Score_B
                        0
     Risk_B
     TOTAL
                        0
     numbers
                        0
                        0
     Score_B.1
     Risk_C
                        0
     Money_Value
                        0
     Score_MV
                        0
                        0
     Risk_D
     District_Loss
                        0
     PROB
                        0
                        0
     RiSk_E
     History
                        0
     Prob
                        0
```

Risk_F	0
Score	0
Inherent_Risk	0
CONTROL_RISK	0
Detection_Risk	0
Audit_Risk	0
Risk	0
dtype: int64	

dtype: int64

There is no longer null values

Check the data type:

[9]: audit_risk_data.info()

<class 'pandas.core.frame.DataFrame'>
RangeIndex: 776 entries, 0 to 775
Data columns (total 27 columns):

Data	COLUMNIS (COURT .	Zi Columns).	
#	Column	Non-Null Count	Dtype
0	Sector_score	776 non-null	float64
1	LOCATION_ID	776 non-null	object
2	PARA_A	776 non-null	float64
3	Score_A	776 non-null	float64
4	Risk_A	776 non-null	float64
5	PARA_B	776 non-null	float64
6	Score_B	776 non-null	float64
7	Risk_B	776 non-null	float64
8	TOTAL	776 non-null	float64
9	numbers	776 non-null	float64
10	Score_B.1	776 non-null	float64
11	Risk_C	776 non-null	float64
12	Money_Value	776 non-null	float64
13	Score_MV	776 non-null	float64
14	Risk_D	776 non-null	float64
15	District_Loss	776 non-null	int64
16	PROB	776 non-null	float64
17	RiSk_E	776 non-null	float64
18	History	776 non-null	int64
19	Prob	776 non-null	float64
20	Risk_F	776 non-null	float64
21	Score	776 non-null	float64
22	Inherent_Risk	776 non-null	float64
23	CONTROL_RISK	776 non-null	float64
24	Detection_Risk	776 non-null	float64
25	Audit_Risk	776 non-null	float64
26	Risk	776 non-null	int64
dtype	es: float64(23),	int64(3), object	t(1)

memory usage: 163.8+ KB

4

When converthing LOCATION_ID column type from object to integer using this: audit_risk_data['LOCATION_ID'] = audit_risk_data['LOCATION_ID'].astype(int), an error occurred. The error says "invalid literal for int() with base 10: 'LOHARU'".

Check the value counts in LOCATION_ID columns

[10]:	<pre>counts = audit_risk_data['LOCATION_ID'].value_counts()</pre>	
	<pre>print(counts)</pre>	

8	76	
19	68	
9	53	
16	52	
12	47	
5	44	
2	41	
4	37	
15	35	
13	35	
6	33	
32	29	
11	26	
22	24	
29	21	
14	20	
18	16	
31	12	
1	11	
37	10	
39	9	
28	8	
21	8	
27	8	
43	7	
25	6	
20	5	
7	4	
30	4	
38	4	
36	4	
3	3	
40	3	
35	2	
44	1	
NUH	1	
LOHARU	1	
SAFIDON	1	
23	1	
42	1	

```
41 1
34 1
33 1
24 1
17 1
Name: LOCATION_ID, dtype: int64
```

According to this, there are some string value in this column. To handle this, first, find only the indices of non-integer values. Then, calculate the mean of the "LOCATION_ID" column in the dataset named "numeric_df" and replaces the "LOCATION_ID" values contained in the rows in the "non_numeric_indices" list with this mean value. And, finally, control the number of the indices of non-integer values which should be empty.

```
[11]: # select just LOCATION_ID column
      location_id = audit_risk_data["LOCATION_ID"]
      # a function to convert values to integer
      def str_to_int(val):
          try:
              int(val)
              return False
          except ValueError:
              return True
      #find only the indices of non-integer values.
      non_numeric_indices = [i for i, val in location_id.items() if str_to_int(val)]
      print(f"There are {len(non_numeric_indices)} non-numerical values. Indexes:
       →{non_numeric_indices}")
      numeric_df = audit_risk_data.copy()
      numeric_df = numeric_df.drop(non_numeric_indices)
      numeric_df["LOCATION_ID"] = pd.to_numeric(numeric_df["LOCATION_ID"])
      mean_location_id = numeric_df["LOCATION_ID"].mean()
      audit_risk_data.loc[non_numeric_indices, "LOCATION_ID"] = mean_location_id
      #find only the indices of non-integer values.
      non_numeric_indices = [i for i, val in location_id.items() if str_to_int(val)]
      print("After replacing the LOCATION_ID values contained in the rows in the⊔
       →non_numeric_indices list with this mean value:")
      print(f"There are {len(non_numeric_indices)} non-numerical values. Indexes:
       →{non_numeric_indices}")
```

There are 3 non-numerical values. Indexes: [351, 355, 367]

After replacing the LOCATION_ID values contained in the rows in the non_numeric_indices list with this mean value:
There are 0 non-numerical values. Indexes: []

Change data type of LOCATION ID from object to numeric

Check the data type:

[13]: audit_risk_data.info()

<class 'pandas.core.frame.DataFrame'>
RangeIndex: 776 entries, 0 to 775
Data columns (total 27 columns):

#	Column	Non-Null Count	Dtype
0	Sector_score	776 non-null	float64
1	LOCATION_ID	776 non-null	float64
2	PARA_A	776 non-null	float64
3	Score_A	776 non-null	float64
4	Risk_A	776 non-null	float64
5	PARA_B	776 non-null	float64
6	Score_B	776 non-null	float64
7	Risk_B	776 non-null	float64
8	TOTAL	776 non-null	float64
9	numbers	776 non-null	float64
10	Score_B.1	776 non-null	float64
11	Risk_C	776 non-null	float64
12	Money_Value	776 non-null	float64
13	Score_MV	776 non-null	float64
14	Risk_D	776 non-null	float64
15	District_Loss	776 non-null	int64
16	PROB	776 non-null	float64
17	RiSk_E	776 non-null	float64
18	History	776 non-null	int64
19	Prob	776 non-null	float64
20	Risk_F	776 non-null	float64
21	Score	776 non-null	float64
22	Inherent_Risk	776 non-null	float64
23	CONTROL_RISK	776 non-null	float64
24	Detection_Risk	776 non-null	float64
25	Audit_Risk	776 non-null	float64
26	Risk	776 non-null	int64
d+ vn	Ag: float64(24)	in+64(3)	

dtypes: float64(24), int64(3)

memory usage: 163.8 KB

As you can see, LOCATION ID is no longer an object.

audit_risk_data.describe() [14]: 「14]: Sector_score LOCATION_ID PARA_A Score_A Risk_A \ count 776.000000 776.000000 776.000000 776.000000 776.000000 20.184536 14.856404 2.450194 0.351289 1.351029 mean std 24.319017 9.872154 5.678870 0.174055 3.440447 0.00000 min 1.850000 1.000000 0.000000 0.200000 25% 2.370000 8.000000 0.210000 0.200000 0.042000 50% 3.890000 13.000000 0.875000 0.200000 0.175000 75% 55.570000 19.000000 2.480000 0.600000 1.488000 59.850000 44.000000 85.000000 0.600000 51.000000 maxPARA_B Score_B Risk_B TOTAL numbers 776.000000 776.000000 776.000000 776.000000 776.000000 count mean 10.799988 0.313144 6.334008 13.218481 5.067655 std 50.083624 0.169804 30.072845 51.312829 0.264449 min 0.000000 0.200000 0.000000 0.00000 5.000000 25% 0.000000 0.200000 0.00000 0.537500 5.000000 50% 0.405000 0.200000 0.081000 1.370000 5.000000 75% 4.160000 0.400000 1.840500 7.707500 5.000000 1268.910000 max1264.630000 0.600000 758.778000 9.000000 RiSk_E History Prob Risk_F Score 776.000000 776.000000 776.000000 776.000000 776.000000 count 0.519072 0.104381 0.216753 0.053608 2.702577 mean std 0.290312 0.531031 0.067987 0.305835 0.858923 min 0.400000 0.000000 0.200000 0.000000 2.000000 25% 0.400000 0.000000 0.000000 2.000000 0.200000 50% 0.400000 0.00000 0.200000 0.000000 2.400000 75% 0.400000 0.000000 0.200000 0.000000 3.250000 max 2.400000 9.000000 0.600000 5.400000 5.200000 Inherent_Risk Detection_Risk CONTROL_RISK Audit_Risk Risk count 776.000000 776.000000 776.0 776.000000 776.000000 mean 17.680612 0.572680 0.5 7.168158 0.393041 std 0.0 54.740244 0.444581 38.667494 0.488741 min 0.400000 0.5 0.280000 0.00000 1.400000 25% 1.583500 0.400000 0.5 0.316700 0.000000 50% 2.214000 0.400000 0.5 0.555600 0.00000 75% 0.5 10.663500 0.400000 3.249900 1.000000 801.262000 5.800000 0.5 961.514400 1.000000 max

Reading bike sharing dataset

[8 rows x 27 columns]

```
mnth holiday weekday workingday \
[15]:
         instant
                      dteday
                               season
                                       yr
               1 2011-01-01
      0
                                    1
                                        0
                                              1
                                                        0
                                                                 6
                                                                             0
               2 2011-01-02
                                                        0
                                                                 0
                                                                             0
      1
                                    1
                                        0
                                              1
      2
               3 2011-01-03
                                    1
                                        0
                                              1
                                                        0
                                                                 1
                                                                             1
                  2011-01-04
                                              1
                                                        0
                                                                 2
      3
               4
                                    1
                                        0
                                                                             1
                                                        0
                                                                 3
      4
               5 2011-01-05
                                    1
                                        0
                                              1
                                                                             1
                                                                casual registered \
         weathersit
                         temp
                                   atemp
                                               hum
                                                    windspeed
      0
                  2 0.344167
                               0.363625 0.805833
                                                     0.160446
                                                                   331
                                                                               654
                                                                               670
      1
                  2 0.363478
                               0.353739
                                          0.696087
                                                     0.248539
                                                                   131
      2
                  1 0.196364
                               0.189405 0.437273
                                                     0.248309
                                                                   120
                                                                              1229
      3
                  1 0.200000
                               0.212122 0.590435
                                                     0.160296
                                                                   108
                                                                              1454
      4
                  1 0.226957 0.229270 0.436957
                                                     0.186900
                                                                    82
                                                                              1518
          cnt
          985
      0
      1
          801
      2 1349
      3 1562
      4 1600
[16]: day_data.shape
[16]: (731, 16)
[17]: day_data.columns
[17]: Index(['instant', 'dteday', 'season', 'yr', 'mnth', 'holiday', 'weekday',
             'workingday', 'weathersit', 'temp', 'atemp', 'hum', 'windspeed',
             'casual', 'registered', 'cnt'],
            dtype='object')
     Check whether there is null value or not
[18]: day_data.isnull().sum()
                    0
[18]: instant
      dteday
                    0
                    0
      season
                    0
      yr
      mnth
                    0
      holiday
                    0
      weekday
                    0
      workingday
                    0
      weathersit
                    0
      temp
                    0
      atemp
                    0
      hum
                    0
```

```
windspeed
                     0
      casual
                     0
      registered
                     0
      cnt
      dtype: int64
[19]: day_data.info()
     <class 'pandas.core.frame.DataFrame'>
     RangeIndex: 731 entries, 0 to 730
     Data columns (total 16 columns):
          Column
                       Non-Null Count
                                        Dtype
                       -----
          ____
                                        ____
      0
          instant
                       731 non-null
                                        int64
      1
          dteday
                       731 non-null
                                        object
      2
                       731 non-null
                                        int64
          season
      3
                       731 non-null
                                        int64
          yr
      4
          mnth
                       731 non-null
                                        int64
      5
          holiday
                       731 non-null
                                        int64
      6
          weekday
                       731 non-null
                                        int64
      7
          workingday
                       731 non-null
                                        int64
      8
          weathersit
                       731 non-null
                                        int64
      9
          temp
                       731 non-null
                                        float64
      10
                       731 non-null
                                        float64
          atemp
      11
          hum
                       731 non-null
                                        float64
      12
          windspeed
                       731 non-null
                                        float64
      13
          casual
                       731 non-null
                                        int64
      14
          registered
                       731 non-null
                                        int64
      15
                       731 non-null
                                        int64
     dtypes: float64(4), int64(11), object(1)
     memory usage: 91.5+ KB
     I chose to drop this column because it is a object type and in the dataset there are information
     about year and month.
[20]: day_data = day_data.drop("dteday", axis = 1)
     Drop this column because it is a record directory.
[21]: day_data = day_data.drop("instant", axis = 1)
[22]:
      day_data.shape
```

```
'registered', 'cnt'],
            dtype='object')
[24]: # Print Confsion Matrix
      def ViewConfusionMatrix(y_test, y_pred):
          cm = confusion_matrix(y_test, y_pred)
          plt.rcParams["figure.figsize"] = [12,9]
          skplt.metrics.plot_confusion_matrix(y_test, y_pred)
          plt.show()
[25]: # Print Accuracy
      def ViewAccuracy(y_test, y_pred):
          print("Accuracy : %",accuracy_score(y_test, y_pred) * 100)
[26]: # Print Mean Squared Error
      def ViewMeanSquaredError(y_test, y_pred):
          mse = mean_squared_error(y_test, y_pred)
          print("Mean Squared Error: {:.2f}".format(mse))
[27]: # Print Mean Absolute Error
      def ViewMeanAbsoluteError(y_test, y_pred):
          mae = mean_absolute_error(y_test, y_pred)
          print("Mean Absolute Error: {:.2f}".format(mae))
[28]: # Report perfomance
      def ReportPerformance(y_test, y_pred):
          report = classification_report(y_test, y_pred)
          print(report)
[29]: #Find Best Threshold
      def find_best_threshold(y_true, y_prob):
          fpr, tpr, thresholds = metrics.roc_curve(y_true, y_prob)
          optimal_idx = np.argmax(tpr - fpr)
          optimal_threshold = thresholds[optimal_idx]
          return optimal_threshold
      # View Roc Curve
      def ViewRocCurve(y_test, y_pred):
          fpr, tpr, thresholds = metrics.roc_curve(y_test, y_pred)
          roc_auc = metrics.auc(fpr, tpr)
          plt.figure()
```

0.3 Part 1

KNN Classifier

```
[30]: class KNNClassifier:
          def __init__(self, k=4):
              self.k = k
              self.X_train = None
              self.y_train = None
          def euclidean_distance(self, x1, x2):
              distance = 0
              for i in range(len(x1)):
                  distance += (x1[i] - x2[i]) ** 2
              return math.sqrt(distance)
          def get_neighbors(self, test_instance):
              distances = []
              for i in range(len(self.X_train)):
                  dist = self.euclidean_distance(test_instance, self.X_train[i])
                  distances.append((i, dist))
              distances.sort(key=lambda x: x[1])
              neighbors = []
              for i in range(self.k):
                  neighbors.append(distances[i][0])
              return neighbors
          def predict(self, X_test):
              y_pred = []
              for test_instance in X_test:
                  neighbors = self.get_neighbors(test_instance)
                  classes = {}
```

```
for index in neighbors:
    if self.y_train[index] in classes:
        classes[self.y_train[index]] += 1
    else:
        classes[self.y_train[index]] = 1
    predicted_class = max(classes, key=classes.get)
    y_pred.append(predicted_class)
    return y_pred

def fit(self, X_train, y_train):
    self.X_train = X_train
    self.y_train = y_train
```

```
[31]: start = time.time()
      dataset = audit_risk_data.copy()
      X = dataset.drop("Risk", axis = 1)
      y = dataset['Risk']
      \# define the number of folds for k-fold cross-validation
      n\_splits = 6 # number of folds for k-fold cross-validation
      kf = KFold(n_splits=n_splits, shuffle=True)
      total_v_test = []
      total_y_pred = []
      for tr, te in kf.split(dataset):
          x_train, x_test = X.iloc[tr], X.iloc[te]
          y_train, y_test = y.iloc[tr], y.iloc[te]
          \# Convert X_train and y_train to NumPy arrays
          x_train = np.array(x_train)
          y_train = np.array(y_train)
          # Convert X_test and y_test to a NumPy array
          x_test = np.array(x_test)
          y_test = np.array(y_test)
          knn = KNNClassifier(k=4)
          knn.fit(x_train, y_train)
          y_pred = knn.predict(x_test)
          # Convert y_pred to a NumPy array
          y_pred = np.array(y_pred)
          total_y_test += y_test.tolist()
```

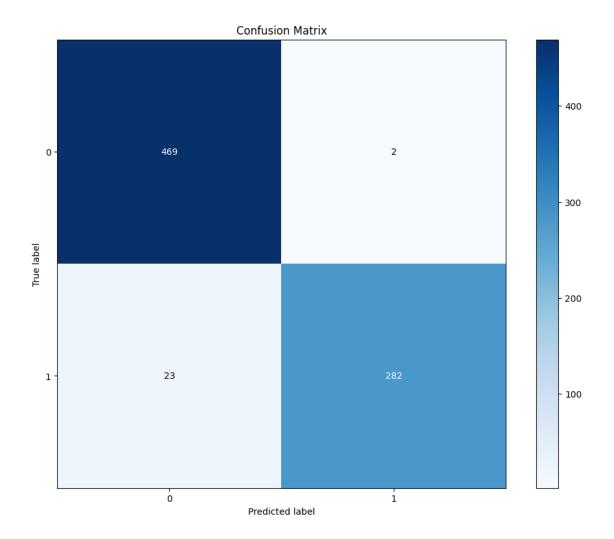
```
total_y_pred += y_pred.tolist()

total_y_test = np.array(total_y_test)
total_y_pred = np.array(total_y_pred)

ReportPerformance(total_y_test, total_y_pred)
ViewAccuracy(total_y_test, total_y_pred)
ViewConfusionMatrix(total_y_test.astype(int), total_y_pred.astype(int))
end = time.time()
print(f"Run Time Performance = {end - start} seconds")
```

	precision	recall	f1-score	support
0	0.95	1.00	0.97	471
1	0.99	0.92	0.96	305
			0.07	77.0
accuracy			0.97	776
macro avg	0.97	0.96	0.97	776
weighted avg	0.97	0.97	0.97	776

Accuracy : % 96.77835051546391



Run Time Performance = 10.744776248931885 seconds

0.4 Part 2

KNN Regressor

```
[32]: class KNNRegressor:
    def __init__(self, k=4):
        self.k = k

    def fit(self, X, y):
        self.X_train = X
        self.y_train = y

    def manhattan_distance(self, x1, x2):
        distance = 0
        for i in range(len(x1)):
```

```
distance += np.abs(x1[i] - x2[i])

return distance

def predict(self, X):
    y_pred = []
    for i in range(X.shape[0]):
        distances = []
        for j in range(self.X_train.shape[0]):
            dist = self.manhattan_distance(X[i], self.X_train[j])
            distances.append((dist, self.y_train[j]))
            distances.sort()
            neighbors = distances[:self.k]
            pred = np.mean([neighbor[1] for neighbor in neighbors])
            y_pred.append(pred)
            return np.array(y_pred)
```

```
[33]: start = time.time()
      dataset = day_data.copy()
      X = dataset.drop("cnt", axis = 1)
      y = dataset['cnt']
      # define the number of folds for k-fold cross-validation
      n\_splits = 6 # number of folds for k-fold cross-validation
      kf = KFold(n_splits=n_splits, shuffle=True)
      total_y_test = []
      total_y_pred = []
      for tr, te in kf.split(dataset):
          x_train, x_test = X.iloc[tr], X.iloc[te]
          y_train, y_test = y.iloc[tr], y.iloc[te]
          # Convert X_train and y_train to NumPy arrays
          x_train = np.array(x_train)
          y_train = np.array(y_train)
          # Convert X_test and y_test to a NumPy array
          x_{test} = np.array(x_{test})
          y_test = np.array(y_test)
          knn = KNNRegressor(k=4)
          knn.fit(x_train, y_train)
```

```
y_pred = knn.predict(x_test)

# Convert y_pred to a NumPy array
y_pred = np.array(y_pred)

total_y_test += y_test.tolist()
total_y_pred += y_pred.tolist()

total_y_test = np.array(total_y_test)
total_y_pred = np.array(total_y_pred)

ViewMeanAbsoluteError(total_y_test, total_y_pred)

end = time.time()
print(f"Run Time Performance = {end - start} seconds")
```

Mean Absolute Error: 54.03 Run Time Performance = 11.118610382080078 seconds

0.5 Part 3

SVM Classifer (Linear)

```
[34]: start = time.time()

dataset = audit_risk_data.copy()

X = dataset.drop("Risk", axis = 1)
y = dataset['Risk']

# define the number of folds for k-fold cross-validation
n_splits = 6 # number of folds for k-fold cross-validation
kf = KFold(n_splits=n_splits, shuffle=True)
total_y_test = []
total_y_pred = []

for tr, te in kf.split(dataset):

    x_train, x_test = X.iloc[tr], X.iloc[te]
    y_train, y_test = y.iloc[tr], y.iloc[te]

    svclassifier = SVC(kernel='linear',gamma='scale')
    svclassifier.fit(x_train, y_train)
    y_pred = svclassifier.predict(x_test)
```

```
# Convert y_pred to a NumPy array
y_pred = np.array(y_pred)

total_y_test += y_test.tolist()

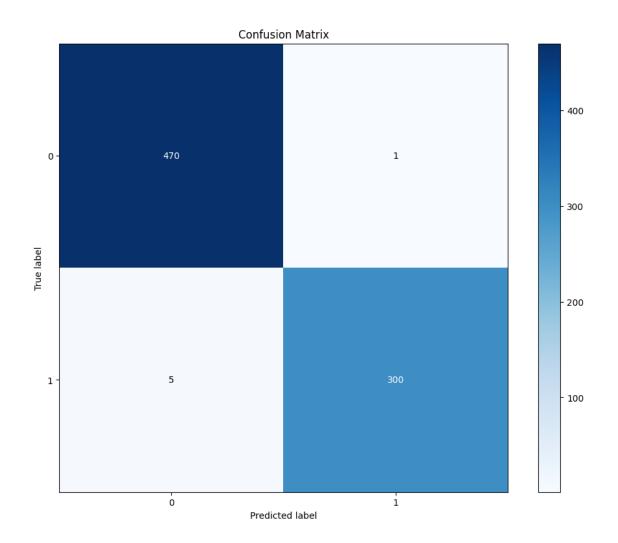
total_y_pred += y_pred.tolist()

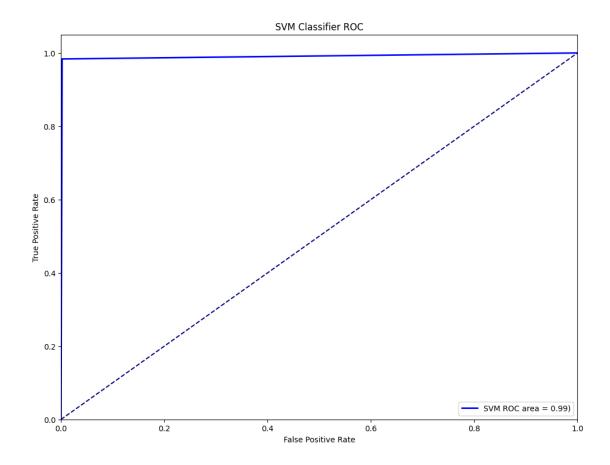
total_y_test = np.array(total_y_test)
total_y_pred = np.array(total_y_pred)

ReportPerformance(total_y_test, total_y_pred)
ViewAccuracy(total_y_test, total_y_pred)
ViewConfusionMatrix(total_y_test.astype(int), total_y_pred.astype(int))
ViewRocCurve(total_y_test, total_y_pred)
end = time.time()
print(f"Run Time Performance = {end - start} seconds")
```

	precision	recall	f1-score	support
0	0.99	1.00	0.99	471
1	1.00	0.98	0.99	305
accuracy			0.99	776
macro avg	0.99	0.99	0.99	776
weighted avg	0.99	0.99	0.99	776

Accuracy: % 99.22680412371135





Best threshold : 1

Run Time Performance = 0.5273785591125488 seconds

0.6 Part 4

SVM Regressor

```
[35]: start = time.time()

dataset = day_data.copy()

X = dataset.drop('cnt', axis=1)
y = dataset['cnt']

# Define the number of folds for cross-validation
n_folds = 6
```

```
svm_regressor = SVR(kernel='linear')
# Initialize the cross-validation object
kf = KFold(n_splits=n_folds, shuffle=True)
mse_scores = np.zeros(n_folds)
r2_scores = np.zeros(n_folds)
\# Perform k-fold cross-validation
fold = 0
for train_idx, test_idx in kf.split(dataset):
   X_train, y_train = X.iloc[train_idx], y.iloc[train_idx]
    X_test, y_test = X.iloc[test_idx], y.iloc[test_idx]
    svm_regressor.fit(X_train, y_train)
    y_pred = svm_regressor.predict(X_test)
    mse_scores[fold] = mean_squared_error(y_test, y_pred)
    r2_scores[fold] = svm_regressor.score(X_test, y_test)
    fold += 1
# Print the cross-validation results
print('Mean MSE score: ', mse_scores.mean())
print('Mean R2 score: ', r2_scores.mean())
end = time.time()
print(f"Run Time Performance = {end - start} seconds")
```

Mean MSE score: 0.004474998613150794 Mean R2 score: 0.9999999987953724

Run Time Performance = 0.418015718460083 seconds

0.7 Part 5

SVM Classifier (Polynomial)

```
[36]: start = time.time()

dataset = audit_risk_data.copy()

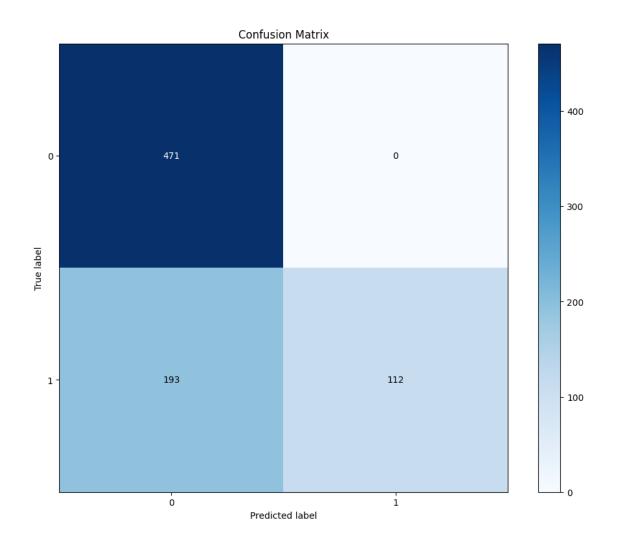
X = dataset.drop("Risk", axis = 1)
y = dataset['Risk']

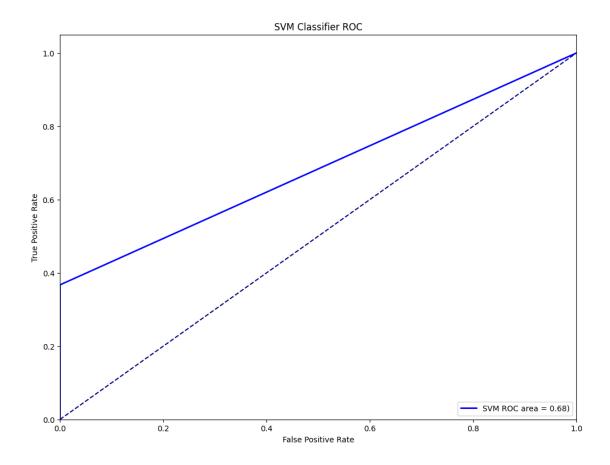
# define the number of folds for k-fold cross-validation
n_splits = 6 # number of folds for k-fold cross-validation
```

```
kf = KFold(n_splits=n_splits, shuffle=True)
total_y_test = []
total_y_pred = []
for tr, te in kf.split(dataset):
    x_train, x_test = X.iloc[tr], X.iloc[te]
    y_train, y_test = y.iloc[tr], y.iloc[te]
    svclassifier = SVC(kernel='poly',gamma='scale')
    svclassifier.fit(x_train, y_train)
    y_pred = svclassifier.predict(x_test)
    # Convert y_pred to a NumPy array
    y_pred = np.array(y_pred)
    total_y_test += y_test.tolist()
    total_y_pred += y_pred.tolist()
total_y_test = np.array(total_y_test)
total_y_pred = np.array(total_y_pred)
ReportPerformance(total_y_test, total_y_pred)
ViewAccuracy(total_y_test, total_y_pred)
ViewConfusionMatrix(total_y_test.astype(int), total_y_pred.astype(int))
ViewRocCurve(total_y_test, total_y_pred)
end = time.time()
print(f"Run Time Performance = {end - start} seconds")
```

	precision	recall	f1-score	support
0	0.71	1.00	0.83	471
1	1.00	0.37	0.54	305
accuracy			0.75	776
macro avg	0.85	0.68	0.68	776
weighted avg	0.82	0.75	0.71	776

Accuracy: % 75.12886597938144





Best threshold : 1

Run Time Performance = 0.5225105285644531 seconds

0.8 Part 6

Decision Tree Classifier

```
[37]: def tree_to_rules(tree, feature_names):
    rules = []

    def traverse(node, rule):
        if tree.tree_.feature[node] != tree.tree_.threshold[node]:
            # if not a leaf node, continue traversing
            feature = feature_names[tree.tree_.feature[node]]
            threshold = tree.tree_.threshold[node]
            rule.append(f"{feature} <= {threshold:.3f}")
            traverse(tree.tree_.children_left[node], rule)
            rule.pop()
            rule.append(f"{feature} > {threshold:.3f}")
```

```
traverse(tree.tree_.children_right[node], rule)
    rule.pop()
else:
    # if leaf node, add rule to the list
    rule.append(f"class {np.argmax(tree.tree_.value[node])}")
    rules.append(" AND ".join(rule))
    rule.pop()

traverse(0, [])
return rules
```

Decision Tree Classifer with Pre-Pruning

```
[38]: start = time.time()
      dataset = audit_risk_data.copy()
      X = dataset.drop("Risk", axis = 1)
      y = dataset['Risk']
      # define the number of folds for k-fold cross-validation
      n\_splits = 6 # number of folds for k-fold cross-validation
      kf = KFold(n_splits=n_splits, shuffle=True)
      total_y_test = []
      total_y_pred = []
      clf = tree.DecisionTreeClassifier(criterion="entropy", max_leaf_nodes=50,__
      →min_samples_leaf=1, max_depth=10)
      for tr, te in kf.split(dataset):
          x_train, x_test = X.iloc[tr], X.iloc[te]
          y_train, y_test = y.iloc[tr], y.iloc[te]
          # predicate
          # different pruning parameters
          # pre-pruning
          clf = tree.DecisionTreeClassifier(criterion="entropy", max_leaf_nodes=50,_
       →min_samples_leaf=1, max_depth=10)
          clf.fit(x_train, y_train)
          y_pred = clf.predict(x_test)
          # Convert y_pred to a NumPy array
          y_pred = np.array(y_pred)
```

```
total_y_test += y_test.tolist()
total_y_pred += y_pred.tolist()

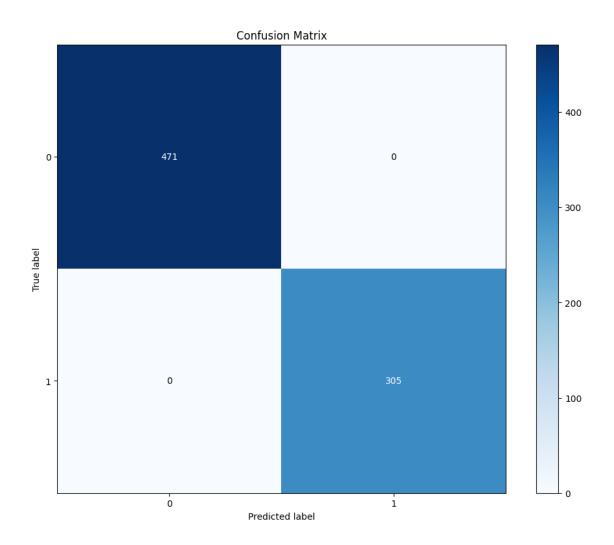
total_y_test = np.array(total_y_test)
total_y_pred = np.array(total_y_pred)

ReportPerformance(total_y_test, total_y_pred)
ViewAccuracy(total_y_test, total_y_pred)
ViewConfusionMatrix(total_y_test.astype(int), total_y_pred.astype(int))
print("Decision tree into a set of rules")
rules = tree_to_rules(clf,X.columns.tolist())
print(rules)

end = time.time()
print(f"Run Time Performance = {end - start} seconds")
```

	precision	recall	f1-score	support
0	1.00	1.00	1.00	471
1	1.00	1.00	1.00	305
			4 00	77.0
accuracy			1.00	776
macro avg	1.00	1.00	1.00	776
weighted avg	1.00	1.00	1.00	776

Accuracy : % 100.0



Decision tree into a set of rules
['Audit_Risk <= 1.005 AND class 0', 'Audit_Risk > 1.005 AND class 1']
Run Time Performance = 0.292752742767334 seconds

Decision Tree Classifer with Post-Pruning

```
[39]: start = time.time()

dataset = audit_risk_data.copy()

X = dataset.drop("Risk", axis = 1)
y = dataset['Risk']

# define the number of folds for k-fold cross-validation
n_splits = 6 # number of folds for k-fold cross-validation
kf = KFold(n_splits=n_splits, shuffle=True)
```

```
total_y_test = []
total_y_pred = []
clf = tree.DecisionTreeClassifier(criterion='entropy')
for tr, te in kf.split(dataset):
   x_train, x_test = X.iloc[tr], X.iloc[te]
   y_train, y_test = y.iloc[tr], y.iloc[te]
   clf = tree.DecisionTreeClassifier(criterion='entropy')
   # Prune the decision tree
   path = clf.cost_complexity_pruning_path(x_train, y_train)
   ccp_alphas, impurities = path.ccp_alphas, path.impurities
   # Find the best ccp_alpha
   best_ccp_alpha = None
   best_score = 0.0
   for ccp_alpha in ccp_alphas:
       clf = tree.DecisionTreeClassifier(criterion='entropy',__
→ccp_alpha=ccp_alpha)
       clf.fit(x_train, y_train)
       score = clf.score(x_test, y_test)
       if score > best_score:
           best_score = score
           best_ccp_alpha = ccp_alpha
    # Prune the decision tree with the best ccp_alpha
   clf = tree.DecisionTreeClassifier(criterion='entropy', __
clf.fit(x_train, y_train)
   y_pred = clf.predict(x_test)
   # Convert y_pred to a NumPy array
   y_pred = np.array(y_pred)
   total_y_test += y_test.tolist()
   total_y_pred += y_pred.tolist()
total_y_test = np.array(total_y_test)
total_y_pred = np.array(total_y_pred)
```

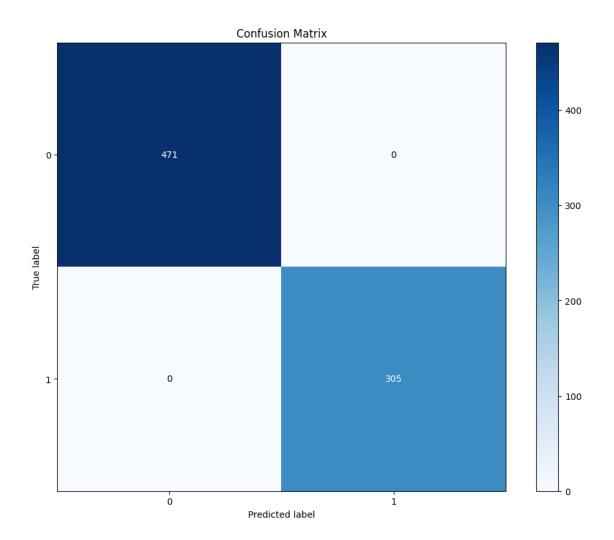
```
ReportPerformance(total_y_test, total_y_pred)
ViewAccuracy(total_y_test, total_y_pred)
ViewConfusionMatrix(total_y_test.astype(int), total_y_pred.astype(int))

print("Decision tree into a set of rules")
rules = tree_to_rules(clf, X.columns.tolist())
print(rules)

end = time.time()
print(f"Run Time Performance = {end - start} seconds")
```

	precision	recall	f1-score	support
0	1.00	1.00	1.00	471
1	1.00	1.00	1.00	305
accuracy			1.00	776
macro avg	1.00	1.00	1.00	776
weighted avg	1.00	1.00	1.00	776

Accuracy : % 100.0



Decision tree into a set of rules ['Audit_Risk <= 1.005 AND class 0', 'Audit_Risk > 1.005 AND class 1'] Run Time Performance = 0.33014965057373047 seconds

0.9 Part 7

Decision Tree Regressor

```
[40]: start = time.time()
  dataset = day_data.copy()

X = dataset.drop("cnt", axis = 1)
y = dataset['cnt']
```

```
# define the number of folds for k-fold cross-validation
n_{splits} = 6 # number of folds for k-fold cross-validation
kf = KFold(n_splits=n_splits, shuffle=True)
mse_scores_ = np.zeros(n_splits)
r2_scores_ = np.zeros(n_splits)
fold = 0
total_y_test = []
total_y_pred = []
dt_regressor = tree.DecisionTreeRegressor(max_depth=10)
for tr, te in kf.split(dataset):
   x_train, x_test = X.iloc[tr], X.iloc[te]
    y_train, y_test = y.iloc[tr], y.iloc[te]
    dt_regressor = tree.DecisionTreeRegressor(max_depth=10)
    dt_regressor.fit(x_train, y_train)
    y_pred = dt_regressor.predict(x_test)
    # Convert y_pred to a NumPy array
    y_pred = np.array(y_pred)
    total_y_test += y_test.tolist()
    total_y_pred += y_pred.tolist()
    # Compute the mean squared error and R2 score
    mse_scores_[fold] = mean_squared_error(y_test, y_pred)
    r2_scores_[fold] = dt_regressor.score(x_test, y_test)
    fold += 1
total_y_test = np.array(total_y_test)
total_y_pred = np.array(total_y_pred)
print('Mean MSE score: ', mse_scores_.mean())
print('Mean R2 score: ', r2_scores_.mean())
```

```
print("Decision tree into a set of rules")
rules = tree_to_rules(dt_regressor, X.columns.tolist())
print(rules)
end = time.time()
print(f"Run Time Performance = {end - start} seconds")
```

Mean MSE score: 42987.91779201106 Mean R2 score: 0.9885141826120455 Decision tree into a set of rules

['registered <= 3173.000 AND registered <= 2111.500 AND registered <= 1342.000 AND registered \leq 885.000 AND casual \leq 115.500 AND registered \leq 226.000 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered <= 1342.000 AND registered <= 885.000 AND casual <= 115.500 AND registered > 226.000 AND registered <= 481.500 AND mnth <= 6.500 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered <= 1342.000 AND registered <= 885.000 AND casual <= 115.500 AND registered > 226.000 AND registered <= 481.500AND mnth > 6.500 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered <= 1342.000 AND registered <= 885.000 AND casual <= 115.500 AND registered > 226.000 AND registered > 481.500 AND registered <= 616.000 AND registered <= 530.500 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered <= 1342.000 AND registered <= 885.000 AND casual <= 115.500 AND registered > 226.000 AND registered > 481.500 AND registered <= 616.000 AND registered > 530.500 AND registered <= 573.500 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered <= 1342.000 AND registered <= 885.000 AND casual <= 115.500 AND registered > 226.000 AND registered > 481.500 AND registered <= 616.000 AND registered > 530.500 AND registered > 573.500 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered <= 1342.000 AND registered <= 885.000 AND casual <= 115.500 AND registered > 226.000 AND registered > 481.500 AND registered > 616.000 AND season <= 2.500 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered <= 1342.000 AND registered <= 885.000 AND casual <= 115.500 AND registered > 226.000 AND registered > 481.500 AND registered > 616.000 AND season > 2.500 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered <= 1342.000 AND registered <= 885.000 AND casual > 115.500 AND temp <= 0.354 AND registered <= 512.000 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered <= 1342.000 AND registered \leq 885.000 AND casual > 115.500 AND temp \leq 0.354 AND registered > 512.000 AND windspeed <= 0.119 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered <= 1342.000 AND registered <= 885.000 AND casual > 115.500 AND temp <= 0.354 AND registered > 512.000 AND windspeed > 0.119 AND mnth \leq 6.500 AND holiday \leq 0.500 AND class 0', 'registered \leq 3173.000 AND registered <= 2111.500 AND registered <= 1342.000 AND registered <= 885.000 AND casual > 115.500 AND temp <= 0.354 AND registered > 512.000 AND windspeed > 0.119 AND mnth <= 6.500 AND holiday > 0.500 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered <= 1342.000 AND registered \leq 885.000 AND casual > 115.500 AND temp \leq 0.354 AND registered

> 512.000 AND windspeed > 0.119 AND mnth > 6.500 AND yr <= 0.500 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered <= 1342.000 AND registered \leq 885.000 AND casual > 115.500 AND temp \leq 0.354 AND registered > 512.000 AND windspeed > 0.119 AND mnth > 6.500 AND yr > 0.500 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered <= 1342.000 AND registered <= 885.000 AND casual > 115.500 AND temp > 0.354 AND registered <= 672.000 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered <= 1342.000 AND registered <= 885.000 AND casual > 115.500 AND temp > 0.354 AND registered > 672.000 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered <= 1342.000 AND registered > 885.000 AND casual \leq 269.500 AND registered \leq 1159.500 AND registered \leq 909.500 AND windspeed <= 0.360 AND registered <= 899.000 AND temp <= 0.112 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered <= 1342.000 AND registered > 885.000 AND casual <= 269.500 AND registered <= 1159.500 AND registered <= 909.500 AND windspeed <= 0.360 AND registered <= 899.000 AND temp > 0.112 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered <= 1342.000 AND registered > 885.000 AND casual <= 269.500 AND registered \leq 1159.500 AND registered \leq 909.500 AND windspeed \leq 0.360 AND registered > 899.000 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered <= 1342.000 AND registered > 885.000 AND casual <= 269.500 AND registered <= 1159.500 AND registered <= 909.500 AND windspeed > 0.360 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND $registered \le 1342.000$ AND registered > 885.000 AND $casual \le 269.500$ AND registered <= 1159.500 AND registered > 909.500 AND windspeed <= 0.188 AND casual <= 236.500 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered <= 1342.000 AND registered > 885.000 AND casual <= 269.500 AND registered <= 1159.500 AND registered > 909.500 AND windspeed <= 0.188 AND casual > 236.500 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered <= 1342.000 AND registered > 885.000 AND casual <= 269.500 AND registered <= 1159.500 AND registered > 909.500 AND windspeed > 0.188 AND registered <= 1034.000 AND season <= 2.500 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered <= 1342.000 AND registered > 885.000 AND casual <= 269.500 AND registered <= 1159.500 AND registered > 909.500 AND windspeed > 0.188 AND registered <= 1034.000 AND season > 2.500 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered <= 1342.000 AND registered > 885.000 AND casual <= 269.500 AND registered <= 1159.500 AND registered > 909.500 AND windspeed > 0.188 AND registered > 1034.000 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND $registered \le 1342.000$ AND registered > 885.000 AND $casual \le 269.500$ AND registered > 1159.500 AND registered <= 1289.500 AND windspeed <= 0.123 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered <= 1342.000 AND registered > 885.000 AND casual <= 269.500 AND registered > 1159.500 AND registered <= 1289.500 AND windspeed > 0.123 AND registered <=1254.500 AND atemp <= 0.216 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered <= 1342.000 AND registered > 885.000 AND casual <= 269.500 AND registered > 1159.500 AND registered <= 1289.500 AND windspeed > 0.123 AND registered <= 1254.500 AND atemp > 0.216 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered <= 1342.000 AND registered >

885.000 AND casual <= 269.500 AND registered > 1159.500 AND registered <= 1289.500 AND windspeed > 0.123 AND registered > 1254.500 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered <= 1342.000 AND registered > 885.000 AND casual <= 269.500 AND registered > 1159.500 AND registered > 1289.500 AND casual <= 66.500 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered <= 1342.000 AND registered > 885.000 AND casual <= 269.500 AND registered > 1159.500 AND registered > 1289.500 AND casual > 66.500 AND windspeed <= 0.193 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered <= 1342.000 AND registered > 885.000 AND casual <= 269.500 AND registered > 1159.500 AND registered > 1289.500 AND casual > 66.500 AND windspeed > 0.193 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered <= 1342.000 AND registered > 885.000 AND casual > 269.500 AND hum <= 0.500 AND casual <= 585.500 AND hum <= 0.476 AND temp <= 0.358 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered <= 1342.000 AND registered > 885.000 AND casual > 269.500 AND hum <= 0.500 AND casual <= 585.500 AND hum <= 0.476 AND temp > 0.358 AND class 0','registered <= 3173.000 AND registered <= 2111.500 AND registered <= 1342.000 AND registered > 885.000 AND casual > 269.500 AND hum < 0.500 AND casual <585.500 AND hum > 0.476 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered <= 1342.000 AND registered > 885.000 AND casual > 269.500 AND hum <= 0.500 AND casual > 585.500 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered <= 1342.000 AND registered > 885.000 AND casual > 269.500 AND hum > 0.500 AND mnth <= 11.500 AND weekday <= 2.000 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered <= 1342.000 AND registered > 885.000 AND casual > 269.500 AND hum > $0.500 \text{ AND mnth} \le 11.500 \text{ AND weekday} > 2.000 \text{ AND atemp} \le 0.303 \text{ AND class 0'},$ 'registered <= 3173.000 AND registered <= 2111.500 AND registered <= 1342.000 AND registered > 885.000 AND casual > 269.500 AND hum > 0.500 AND mnth <= 11.500 AND weekday > 2.000 AND atemp > 0.303 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered <= 1342.000 AND registered > 885.000 AND casual > 269.500 AND hum > 0.500 AND mnth > 11.500 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered > 1342.000 AND casual <= 452.000 AND registered <= 1675.500 AND casual <= 114.000 AND registered <= 1503.500 AND registered <= 1415.000 AND weekday <= 3.000 AND weathersit <= 1.500 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered > 1342.000 AND casual <= 452.000 AND registered <= 1675.500 AND casual <= 114.000 AND registered <= 1503.500 AND registered <= 1415.000 AND weekday <= 3.000 AND weathersit > 1.500 AND class 0', 'registered <= 3173.000 AND registered \leq 2111.500 AND registered \geq 1342.000 AND casual \leq 452.000 AND registered <= 1675.500 AND casual <= 114.000 AND registered <= 1503.500 AND registered <= 1415.000 AND weekday > 3.000 AND class 0', 'registered <= 3173.000 AND registered \leq 2111.500 AND registered \geq 1342.000 AND casual \leq 452.000 AND registered <= 1675.500 AND casual <= 114.000 AND registered <= 1503.500 AND registered > 1415.000 AND weathersit <= 1.500 AND windspeed <= 0.315 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered > 1342.000 AND casual \leq 452.000 AND registered \leq 1675.500 AND casual \leq 114.000 AND registered <= 1503.500 AND registered > 1415.000 AND weathersit <= 1.500 AND windspeed > 0.315 AND class 0', 'registered <= 3173.000 AND registered <=

2111.500 AND registered > 1342.000 AND casual <= 452.000 AND registered <= 1675.500 AND casual <= 114.000 AND registered <= 1503.500 AND registered > 1415.000 AND weathersit > 1.500 AND mnth <= 1.500 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered > 1342.000 AND casual <= 452.000 AND registered <= 1675.500 AND casual <= 114.000 AND registered <= 1503.500 AND registered > 1415.000 AND weathersit > 1.500 AND mnth > 1.500 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered > 1342.000 AND casual <= 452.000 AND registered <= 1675.500 AND casual <= 114.000AND registered > 1503.500 AND registered <= 1596.000 AND windspeed <= 0.199 AND registered <= 1528.000 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered > 1342.000 AND casual <= 452.000 AND registered <= 1675.500 AND casual <= 114.000 AND registered > 1503.500 AND registered <= 1596.000 AND windspeed <= 0.199 AND registered > 1528.000 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered > 1342.000 AND $casual \le 452.000 \text{ AND registered} \le 1675.500 \text{ AND casual} \le 114.000 \text{ AND}$ registered > 1503.500 AND registered <= 1596.000 AND windspeed > 0.199 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered > 1342.000 AND casual \leq 452.000 AND registered \leq 1675.500 AND casual \leq 114.000 AND registered > 1503.500 AND registered > 1596.000 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered > 1342.000 AND casual <= 452.000 AND registered <= 1675.500 AND casual > 114.000 AND casual <= 224.500 AND registered <= 1434.000 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered > 1342.000 AND casual <= 452.000 AND registered <= 1675.500 AND casual > 114.000 AND casual <= 224.500 AND registered > 1434.000 AND registered <= 1612.500 AND weathersit <= 1.500 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered > 1342.000 AND casual <= 452.000 AND registered <= 1675.500 AND casual > 114.000 AND casual <= 224.500AND registered > 1434.000 AND registered <= 1612.500 AND weathersit > 1.500 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered > $1342.000 \text{ AND casual} \le 452.000 \text{ AND registered} \le 1675.500 \text{ AND casual} > 114.000$ AND casual ≤ 224.500 AND registered > 1434.000 AND registered > 1612.500 AND registered <= 1651.500 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered > 1342.000 AND casual <= 452.000 AND registered <= 1675.500 AND casual > 114.000 AND casual <= 224.500 AND registered > 1434.000 AND registered > 1612.500 AND registered > 1651.500 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered > 1342.000 AND casual <= 452.000 AND registered <= 1675.500 AND casual > 114.000 AND casual > 224.500 AND weekday <= 3.500 AND yr <= 0.500 AND class 0', 'registered <= 3173.000 AND registered \leq 2111.500 AND registered \geq 1342.000 AND casual \leq 452.000 AND registered <= 1675.500 AND casual > 114.000 AND casual > 224.500 AND weekday <= 3.500 AND yr > 0.500 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered > 1342.000 AND casual <= 452.000 AND registered <= 1675.500 AND casual > 114.000 AND casual > 224.500 AND weekday > 3.500 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered > 1342.000 AND casual <= 452.000 AND registered > 1675.500 AND registered <= 1855.500 AND casual \leq 218.000 AND atemp \leq 0.260 AND weekday \leq 2.500 AND atemp \leq 0.198 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered > 1342.000 AND casual <= 452.000 AND registered > 1675.500 AND registered <=

1855.500 AND casual <= 218.000 AND atemp <= 0.260 AND weekday <= 2.500 AND atemp > 0.198 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered > 1342.000 AND casual <= 452.000 AND registered > 1675.500 AND registered <= 1855.500 AND casual <= 218.000 AND atemp <= 0.260 AND weekday > 2.500 AND mnth <= 2.500 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered > 1342.000 AND casual <= 452.000 AND registered > 1675.500 AND registered <= 1855.500 AND casual <= 218.000 AND atemp <= 0.260 AND weekday > 2.500 AND mnth > 2.500 AND class 0', 'registered <= 3173.000 AND registered \leq 2111.500 AND registered \geq 1342.000 AND casual \leq 452.000 AND registered > 1675.500 AND registered <= 1855.500 AND casual <= 218.000 AND atemp > 0.260 AND casual <= 172.000 AND windspeed <= 0.233 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered > 1342.000 AND casual <= 452.000 AND registered > 1675.500 AND registered <= 1855.500 AND casual <= 218.000 AND atemp > 0.260 AND casual <= 172.000 AND windspeed > 0.233 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered > 1342.000 AND casual <= 452.000 AND registered > 1675.500 AND registered <= 1855.500 AND casual <= 218.000 AND atemp > 0.260 AND casual > 172.000 AND mnth <= 2.500 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered > 1342.000 AND casual <= 452.000 AND registered > 1675.500 AND registered <= 1855.500 AND casual <= 218.000 AND atemp > 0.260 AND casual > 172.000 AND mnth > 2.500 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered > 1342.000 AND casual <= 452.000 AND registered > 1675.500 AND registered <= 1855.500 AND casual > 218.000 AND atemp <= 0.312 AND hum <= 0.342AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered > 1342.000 AND casual <= 452.000 AND registered > 1675.500 AND registered <= 1855.500 AND casual > 218.000 AND atemp <= 0.312 AND hum > 0.342 AND hum <= 0.515 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered > 1342.000 AND casual <= 452.000 AND registered > 1675.500 AND registered <= 1855.500 AND casual > 218.000 AND atemp <= 0.312 AND hum > 0.342 AND hum > 0.515 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered > 1342.000 AND casual <= 452.000 AND registered > 1675.500 AND registered <= 1855.500 AND casual > 218.000 AND atemp > 0.312 AND windspeed <= 0.282 AND atemp \leftarrow 0.413 AND class 0', 'registered \leftarrow 3173.000 AND registered \leftarrow 2111.500 AND registered > 1342.000 AND casual <= 452.000 AND registered > 1675.500 AND registered <= 1855.500 AND casual > 218.000 AND atemp > 0.312 AND windspeed <= 0.282 AND atemp > 0.413 AND class 0', 'registered <= 3173.000 AND registered \leq 2111.500 AND registered \geq 1342.000 AND casual \leq 452.000 AND registered > 1675.500 AND registered <= 1855.500 AND casual > 218.000 AND atemp > 0.312 AND windspeed > 0.282 AND class 0', 'registered <= 3173.000 AND registered \leq 2111.500 AND registered \geq 1342.000 AND casual \leq 452.000 AND registered > 1675.500 AND registered > 1855.500 AND weekday <= 2.500 AND weekday <= 1.500 AND weekday <= 0.500 AND class 0', 'registered <= 3173.000 AND registered \leq 2111.500 AND registered \geq 1342.000 AND casual \leq 452.000 AND registered > 1675.500 AND registered > 1855.500 AND weekday <= 2.500 AND weekday <= 1.500 AND weekday > 0.500 AND class 0', 'registered <= 3173.000 AND registered \leq 2111.500 AND registered \geq 1342.000 AND casual \leq 452.000 AND registered > 1675.500 AND registered > 1855.500 AND weekday <= 2.500 AND weekday > 1.500 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND

registered > 1342.000 AND casual <= 452.000 AND registered > 1675.500 AND registered > 1855.500 AND weekday > 2.500 AND season <= 2.500 AND casual <= 251.000 AND registered <= 1935.500 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered > 1342.000 AND casual <= 452.000 AND registered > 1675.500 AND registered > 1855.500 AND weekday > 2.500 AND season <= 2.500 AND casual <= 251.000 AND registered > 1935.500 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered > 1342.000 AND casual <= 452.000 AND registered > 1675.500 AND registered > 1855.500 AND weekday > 2.500 AND season <= 2.500 AND casual > 251.000 AND windspeed <= 0.276AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered > 1342.000 AND casual <= 452.000 AND registered > 1675.500 AND registered > 1855.500 AND weekday > 2.500 AND season <= 2.500 AND casual > 251.000 AND windspeed > 0.276 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered > 1342.000 AND casual <= 452.000 AND registered > 1675.500 AND registered > 1855.500 AND weekday > 2.500 AND season > 2.500 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered > 1342.000 AND casual > 452.000 AND casual <= 1071.000 AND registered <= 1453.500AND hum <= 0.561 AND hum <= 0.501 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered > 1342.000 AND casual > 452.000 AND casual <= 1071.000 AND registered <= 1453.500 AND hum <= 0.561 AND hum > 0.501 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered > 1342.000 AND casual > 452.000 AND casual <= 1071.000 AND registered <= 1453.500 AND hum > 0.561 AND windspeed <= 0.209 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered > 1342.000 AND casual > 452.000 AND casual <= 1071.000 AND registered <= 1453.500 AND hum > 0.561 AND windspeed > 0.209 AND atemp <= 0.352 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered > 1342.000 AND casual > 452.000 AND casual <= 1071.000 AND registered \leq 1453.500 AND hum > 0.561 AND windspeed > 0.209 AND atemp > 0.352 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered > 1342.000 AND casual > 452.000 AND casual <= 1071.000 AND registered > 1453.500 AND registered <= 2010.000 AND mnth <= 1.500 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered > 1342.000 AND casual > 452.000 AND casual <= 1071.000 AND registered > 1453.500 AND registered <= 2010.000 AND mnth > 1.500 AND windspeed <= 0.129 AND holiday <= 0.500 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered > 1342.000 AND casual > 452.000 AND casual <= 1071.000 AND registered > 1453.500 AND registered <= 2010.000 AND mnth > 1.500 AND windspeed <= 0.129 AND holiday > 0.500 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered > 1342.000 AND casual > 452.000 AND casual <= 1071.000 AND registered > 1453.500 AND registered <= 2010.000 AND mnth > 1.500 AND windspeed > 0.129 AND weathersit <= 1.500 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered > 1342.000 AND casual > 452.000 AND casual <= 1071.000 AND registered > 1453.500 AND registered <= 2010.000 AND mnth > 1.500 AND windspeed > 0.129 AND weathersit > 1.500 AND class 0', 'registered <= 3173.000 AND registered \leq 2111.500 AND registered \geq 1342.000 AND casual \geq 452.000 AND casual <= 1071.000 AND registered > 1453.500 AND registered > 2010.000 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered > 1342.000 AND casual > 452.000 AND casual > 1071.000 AND casual <= 1218.500 AND mnth <=

7.500 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered > 1342.000 AND casual > 452.000 AND casual > 1071.000 AND casual <= 1218.500 AND mnth > 7.500 AND class 0', 'registered ≤ 3173.000 AND registered <= 2111.500 AND registered > 1342.000 AND casual > 452.000 AND casual > 1071.000 AND casual > 1218.500 AND weekday <= 3.000 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered > 1342.000 AND casual > 452.000 AND casual > 1071.000 AND casual > 1218.500 AND weekday > 3.000 AND season <= 2.500 AND class 0', 'registered <= 3173.000 AND registered <= 2111.500 AND registered > 1342.000 AND casual > 452.000 AND casual > 1071.000 AND casual > 1218.500 AND weekday > 3.000 AND season > 2.500 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual <= 1242.500 AND registered <= 2554.500 AND casual \leq 475.500 AND registered \leq 2288.500 AND temp \leq 0.439 AND casual \leq 92.000 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND $casual \le 1242.500 \text{ AND registered} \le 2554.500 \text{ AND casual} \le 475.500 \text{ AND}$ registered \leq 2288.500 AND temp \leq 0.439 AND casual > 92.000 AND casual \leq 125.500 AND registered <= 2271.500 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual <= 1242.500 AND registered <= 2554.500 AND casual <= 475.500 AND registered <= 2288.500 AND temp <= 0.439 AND casual > 92.000 AND casual <= 125.500 AND registered > 2271.500 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual <= 1242.500 AND registered <= 2554.500 AND casual <= 475.500 AND registered <= 2288.500 AND temp <= 0.439 AND casual > 92.000 AND casual > 125.500 AND temp <= 0.341 AND class 0', 'registered'<= 3173.000 AND registered > 2111.500 AND casual <= 1242.500 AND registered <= 2554.500 AND casual <= 475.500 AND registered <= 2288.500 AND temp <= 0.439 AND casual > 92.000 AND casual > 125.500 AND temp > 0.341 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual <= 1242.500 AND registered <= $2554.500 \text{ AND casual} \le 475.500 \text{ AND registered} \le 2288.500 \text{ AND temp} > 0.439 \text{ AND}$ class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual <= 1242.500 AND registered <= 2554.500 AND casual <= 475.500 AND registered > 2288.500 AND casual <= 265.000 AND registered <= 2487.000 AND registered <= 2436.500 AND weekday <= 3.500 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual <= 1242.500 AND registered <= 2554.500 AND casual \leq 475.500 AND registered > 2288.500 AND casual \leq 265.000 AND registered <= 2487.000 AND registered <= 2436.500 AND weekday > 3.500 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual <= 1242.500 AND registered ≤ 2554.500 AND casual ≤ 475.500 AND registered > 2288.500 AND casual <= 265.000 AND registered <= 2487.000 AND registered > 2436.500 AND temp \leq 0.452 AND class 0', 'registered \leq 3173.000 AND registered \geq 2111.500 AND $casual \le 1242.500 \text{ AND registered} \le 2554.500 \text{ AND } casual \le 475.500 \text{ AND}$ registered > 2288.500 AND casual <= 265.000 AND registered <= 2487.000 AND registered > 2436.500 AND temp > 0.452 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual <= 1242.500 AND registered <= 2554.500 AND casual \leq 475.500 AND registered > 2288.500 AND casual \leq 265.000 AND registered > 2487.000 AND season <= 3.500 AND registered <= 2529.500 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual <= 1242.500 AND registered <= 2554.500 AND casual <= 475.500 AND registered > 2288.500 AND casual \leq 265.000 AND registered > 2487.000 AND season \leq 3.500 AND registered >2529.500 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND

 $casual \le 1242.500 \text{ AND registered} \le 2554.500 \text{ AND } casual \le 475.500 \text{ AND}$ registered > 2288.500 AND casual <= 265.000 AND registered > 2487.000 AND season > 3.500 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual \leq 1242.500 AND registered \leq 2554.500 AND casual \leq 475.500 AND registered > 2288.500 AND casual > 265.000 AND hum <= 0.691 AND hum <= 0.480 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual <= 1242.500 AND registered <= 2554.500 AND casual <= 475.500 AND registered > 2288.500 AND casual > 265.000 AND hum <= 0.691 AND hum > 0.480 AND casual <= 431.500 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND $casual \le 1242.500 \text{ AND registered} \le 2554.500 \text{ AND } casual \le 475.500 \text{ AND}$ registered > 2288.500 AND casual > 265.000 AND hum <= 0.691 AND hum > 0.480 AND casual > 431.500 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual <= 1242.500 AND registered <= 2554.500 AND casual <= 475.500 AND registered > 2288.500 AND casual > 265.000 AND hum > 0.691 AND workingday <= 0.500 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual <= 1242.500 AND registered <= 2554.500 AND casual <= 475.500 AND registered >2288.500 AND casual > 265.000 AND hum > 0.691 AND workingday > 0.500 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual <= 1242.500 AND registered <= 2554.500 AND casual > 475.500 AND casual <= 832.500 AND casual <= 629.000 AND atemp <= 0.332 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual <= 1242.500 AND registered <= 2554.500 AND casual > 475.500 AND casual <= 832.500 AND casual <= 629.000 AND atemp > 0.332 AND casual <= 597.500 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND $casual \le 1242.500$ AND registered ≤ 2554.500 AND casual > 475.500 AND $casual \le 475.500$ 832.500 AND casual <= 629.000 AND atemp > 0.332 AND casual > 597.500 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual <= 1242.500 AND registered <= 2554.500 AND casual > 475.500 AND casual <= 832.500 AND casual > 629.000 AND mnth <= 7.500 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual <= 1242.500 AND registered <= 2554.500 AND casual > 475.500 AND casual ≤ 832.500 AND casual > 629.000 AND mnth > 7.500 AND season ≤ 2.500 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual <= 1242.500 AND registered <= 2554.500 AND casual > 475.500 AND casual <= 832.500 AND casual > 629.000 AND mnth > 7.500 AND season > 2.500 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual <= 1242.500 AND registered <= 2554.500 AND casual > 475.500 AND casual > 832.500 AND season <= 1.500 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual <= 1242.500 AND registered <= 2554.500 AND casual > 475.500 AND casual > 832.500 AND season > 1.500 AND hum <= 0.904 AND hum <= 0.838 AND temp <= 0.385 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual <= 1242.500 AND registered <= 2554.500 AND casual > 475.500 AND casual > 832.500 AND season > $1.500 \text{ AND hum} \le 0.904 \text{ AND hum} \le 0.838 \text{ AND temp} > 0.385 \text{ AND class 0'},$ 'registered <= 3173.000 AND registered > 2111.500 AND casual <= 1242.500 AND registered <= 2554.500 AND casual > 475.500 AND casual > 832.500 AND season > 1.500 AND hum <= 0.904 AND hum > 0.838 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual <= 1242.500 AND registered <= 2554.500 AND casual > 475.500 AND casual > 832.500 AND season > 1.500 AND hum > 0.904 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual <= 1242.500 AND registered > 2554.500 AND casual <= 601.500 AND registered <=

3077.500 AND hum <= 0.677 AND casual <= 508.500 AND registered <= 2657.500 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual <= 1242.500 AND registered > 2554.500 AND casual <= 601.500 AND registered <= 3077.500 AND hum <= 0.677 AND casual <= 508.500 AND registered > 2657.500 AND casual <= 144.500 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual <= 1242.500 AND registered > 2554.500 AND casual <= 601.500 AND registered \leq 3077.500 AND hum \leq 0.677 AND casual \leq 508.500 AND registered > 2657.500 AND casual > 144.500 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual <= 1242.500 AND registered > 2554.500 AND casual <= 601.500 AND registered <= 3077.500 AND hum <= 0.677 AND casual > 508.500 AND registered <= 2781.500 AND casual <= 564.500 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual <= 1242.500 AND registered > 2554.500 AND casual <= 601.500 AND registered <= 3077.500 AND hum <= 0.677 AND casual > 508.500 AND registered <= 2781.500 AND casual > 564.500AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual <= 1242.500 AND registered > 2554.500 AND casual <= 601.500 AND registered <= 3077.500 AND hum <= 0.677 AND casual > 508.500 AND registered > 2781.500 AND mnth <= 4.500 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual \leq 1242.500 AND registered \geq 2554.500 AND casual \leq 601.500 AND registered <= 3077.500 AND hum <= 0.677 AND casual > 508.500 AND registered > 2781.500 AND mnth > 4.500 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual <= 1242.500 AND registered > 2554.500 AND casual <= 601.500 AND registered \leq 3077.500 AND hum > 0.677 AND weekday \leq 1.500 AND atemp \leq 0.283 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual <= 1242.500 AND registered > 2554.500 AND casual <= 601.500 AND registered <= 3077.500 AND hum > 0.677 AND weekday <= 1.500 AND atemp > 0.283 AND windspeed <= 0.231 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual <= 1242.500 AND registered > 2554.500 AND casual <= 601.500 AND registered <=3077.500 AND hum > 0.677 AND weekday <= 1.500 AND atemp > 0.283 AND windspeed >0.231 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual <= 1242.500 AND registered > 2554.500 AND casual <= 601.500 AND registered <= 3077.500 AND hum > 0.677 AND weekday > 1.500 AND temp <= 0.287 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual <= 1242.500 AND registered > 2554.500 AND casual <= 601.500 AND registered <= 3077.500 AND hum > 0.677 AND weekday > 1.500 AND temp > 0.287 AND casual <= 85.000 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual <= 1242.500 AND registered > 2554.500 AND casual <= 601.500 AND registered <= 3077.500 AND hum > 0.677 AND weekday > 1.500 AND temp > 0.287 AND casual > 85.000 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual <= 1242.500 AND registered > 2554.500 AND casual <= 601.500 AND registered > 3077.500 AND casual <= 338.500 AND temp <= 0.270 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual <= 1242.500 AND registered > 2554.500 AND casual <= 601.500 AND registered > 3077.500 AND casual <= 338.500 AND temp > 0.270 AND weekday <= 3.000 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual <= 1242.500 AND registered > 2554.500 AND casual <= 601.500 AND registered > 3077.500 AND casual <= 338.500 AND temp > 0.270 AND weekday > 3.000 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual \leq 1242.500 AND registered \geq 2554.500 AND casual \leq 601.500 AND

registered > 3077.500 AND casual > 338.500 AND atemp <= 0.554 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual <= 1242.500 AND registered > 2554.500 AND casual <= 601.500 AND registered > 3077.500 AND casual > 338.500 AND atemp > 0.554 AND hum <= 0.778 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual <= 1242.500 AND registered > 2554.500 AND casual <= 601.500 AND registered > 3077.500 AND casual > 338.500 AND atemp > 0.554 AND hum > 0.778 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual <= 1242.500 AND registered > 2554.500 AND casual > 601.500 AND weekday <= 2.500 AND casual <= 869.500 AND hum <= 0.614 AND registered <= 2736.500 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual <= 1242.500 AND registered > 2554.500 AND casual > 601.500 AND weekday <= 2.500 AND casual <= 869.500 AND hum <= 0.614 AND registered >2736.500 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual <= 1242.500 AND registered > 2554.500 AND casual > 601.500 AND weekday <= 2.500 AND casual <= 869.500 AND hum > 0.614 AND weathersit <= 1.500 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual <= 1242.500 AND registered > 2554.500 AND casual > 601.500 AND weekday <= 2.500 AND casual <= 869.500 AND hum > 0.614 AND weathersit > 1.500 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual <= 1242.500 AND registered > 2554.500 AND casual > 601.500 AND weekday <= 2.500 AND casual > 869.500 AND windspeed <= 0.225 AND windspeed <= 0.131 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual <= 1242.500 AND registered > 2554.500 AND casual > 601.500 AND weekday <= 2.500 AND casual > 869.500 AND windspeed <=0.225 AND windspeed > 0.131 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual <= 1242.500 AND registered > 2554.500 AND casual > 601.500 AND weekday <= 2.500 AND casual > 869.500 AND windspeed > 0.225 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual <= 1242.500 AND registered > 2554.500 AND casual > 601.500 AND weekday > 2.500 AND registered <= 2936.000 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND $casual \le 1242.500$ AND registered > 2554.500 AND casual > 601.500 AND weekday > 2.500 AND registered > 2936.000 AND atemp <= 0.744 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual <= 1242.500 AND registered > 2554.500 AND casual > 601.500 AND weekday > 2.500 AND registered > 2936.000 AND atemp > 0.744 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual > 1242.500 AND casual <= 1855.500 AND registered <= 2704.000 AND casual \leq 1400.000 AND registered \leq 2555.500 AND weathersit \leq 1.500 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual > 1242.500 AND $casual \le 1855.500 \text{ AND registered} \le 2704.000 \text{ AND casual} \le 1400.000 \text{ AND}$ registered <= 2555.500 AND weathersit > 1.500 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual > 1242.500 AND casual <= 1855.500 AND registered <= 2704.000 AND casual <= 1400.000 AND registered > 2555.500 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual > 1242.500 AND casual <= 1855.500 AND registered <= 2704.000 AND casual > 1400.000AND hum <= 0.627 AND hum <= 0.524 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual > 1242.500 AND casual <= 1855.500 AND registered <= 2704.000 AND casual > 1400.000 AND hum <= 0.627 AND hum > 0.524 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual > $1242.500 \text{ AND casual} \le 1855.500 \text{ AND registered} \le 2704.000 \text{ AND casual} > 1400.000$ AND hum > 0.627 AND casual <= 1483.000 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual > 1242.500 AND casual <= 1855.500 AND registered \leq 2704.000 AND casual > 1400.000 AND hum > 0.627 AND casual >1483.000 AND windspeed <= 0.162 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual > 1242.500 AND casual <= 1855.500 AND $registered \le 2704.000 \text{ AND } casual > 1400.000 \text{ AND } hum > 0.627 \text{ AND } hum >$ 1483.000 AND windspeed > 0.162 AND atemp <= 0.599 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual > 1242.500 AND casual <= 1855.500 AND registered \leq 2704.000 AND casual > 1400.000 AND hum > 0.627 AND casual >1483.000 AND windspeed > 0.162 AND atemp > 0.599 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual > 1242.500 AND casual <= 1855.500 AND registered > 2704.000 AND registered <= 2951.500 AND casual <= 1338.000 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual > 1242.500 AND casual <= 1855.500 AND registered > 2704.000 AND registered <= 2951.500 AND casual > 1338.000 AND hum <= 0.473 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual > 1242.500 AND casual <= 1855.500 AND registered > 2704.000 AND registered <= 2951.500 AND casual > 1338.000 AND hum > 0.473 AND casual <= 1571.500 AND registered <= 2846.000 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual > 1242.500 AND casual <= 1855.500 AND registered > 2704.000 AND registered <= 2951.500 AND casual > 1338.000 AND hum > 0.473 AND casual <= 1571.500 AND registered > 2846.000 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual > 1242.500 AND casual <= 1855.500 AND registered > 2704.000 AND $registered \le 2951.500 \text{ AND } casual > 1338.000 \text{ AND } hum > 0.473 \text{ AND } hum > 0.4$ 1571.500 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual > 1242.500 AND casual <= 1855.500 AND registered > 2704.000 ANDregistered > 2951.500 AND casual <= 1597.000 AND temp <= 0.627 AND hum <= 0.793 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual > 1242.500 AND casual <= 1855.500 AND registered > 2704.000 AND registered > 2951.500 AND casual <= 1597.000 AND temp <= 0.627 AND hum > 0.793 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual > 1242.500 AND casual <= 1855.500 AND registered > 2704.000 AND registered > 2951.500 AND casual <= 1597.000 AND temp > 0.627 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual > 1242.500 AND casual <= 1855.500 AND registered > 2704.000 AND registered > 2951.500 AND casual > 1597.000 AND casual <= 1625.500 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual > 1242.500 AND casual <= 1855.500 AND registered > 2704.000 AND registered > 2951.500 AND casual > 1597.000 AND casual > 1625.500 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual > 1242.500 AND casual > 1855.500 AND windspeed <= 0.098 AND holiday <= 0.500 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual > 1242.500 AND casual > 1855.500 AND windspeed <= 0.098 AND holiday > 0.500 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual > 1242.500 AND casual > 1855.500 AND windspeed > 0.098 AND registered <= 2836.000 AND atemp <= 0.640 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual > 1242.500 AND casual > 1855.500 AND windspeed > 0.098 AND registered <= 2836.000 AND atemp > 0.640 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual > 1242.500 AND casual > 1855.500 AND windspeed > 0.098 AND registered > 2836.000 AND season <= 2.500 AND class 0', 'registered <= 3173.000 AND registered > 2111.500 AND casual > 1242.500 AND casual > 1855.500 AND windspeed > 0.098 AND registered > 2836.000 AND season > 2.500 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered <= 3837.000 AND casual <= 538.500 AND registered <= 3628.500 AND registered <= 3426.000 AND casual <= 315.500 AND registered <= 3343.500 AND casual <= 177.500 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered <= 3837.000 AND casual <= 538.500 AND registered \leq 3628.500 AND registered \leq 3426.000 AND casual \leq 315.500 AND registered <= 3343.500 AND casual > 177.500 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered <= 3837.000 AND casual <= 538.500 AND registered <= 3628.500 AND registered <= 3426.000 AND casual <= 315.500 AND registered > 3343.500 AND temp <= 0.287 AND class 0',</pre> 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered <= 3837.000 AND casual <= 538.500 AND registered <= 3628.500 AND registered <= 3426.000 AND casual <= 315.500 AND registered > 3343.500 AND temp > 0.287 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered <= 3837.000 AND casual <= 538.500 AND registered \leq 3628.500 AND registered \leq 3426.000 AND casual > 315.500 AND casual <= 447.000 AND registered <= 3217.000 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered <= 3837.000 AND casual <= 538.500 AND registered <= 3628.500 AND registered <= 3426.000 AND casual > 315.500 AND casual <= 447.000 AND registered > 3217.000 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered <= 3837.000 AND casual <= 538.500 AND registered <= 3628.500 AND registered <= 3426.000 AND casual > 315.500 AND casual > 447.000AND registered <= 3305.000 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered <= 3837.000 AND casual <=538.500 AND registered <= 3628.500 AND registered <= 3426.000 AND casual > 315.500 AND casual > 447.000 AND registered > 3305.000 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered <= 3837.000 AND casual <= 538.500 AND registered <= 3628.500 AND registered > 3426.000 AND casual <= 234.500 AND mnth <= 7.000 AND registered <= 3574.500 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <=1291.000 AND registered <= 3837.000 AND casual <= 538.500 AND registered <= 3628.500 AND registered > 3426.000 AND casual <= 234.500 AND mnth <= 7.000 AND registered > 3574.500 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered <= 3837.000 AND casual <= 538.500 AND registered \leq 3628.500 AND registered \geq 3426.000 AND casual \leq 234.500 AND $mnth > 7.000 \ AND \ weekday <= 3.500 \ AND \ class 0', 'registered > 3173.000 \ AND$ registered <= 4280.500 AND casual <= 1291.000 AND registered <= 3837.000 AND casual <= 538.500 AND registered <= 3628.500 AND registered > 3426.000 AND casual ≤ 234.500 AND mnth > 7.000 AND weekday > 3.500 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered <= 3837.000 AND casual <= 538.500 AND registered <= 3628.500 AND registered > $3426.000 \text{ AND casual} > 234.500 \text{ AND temp} \le 0.700 \text{ AND mnth} \le 10.500 \text{ AND class 0'},$ 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered <= 3837.000 AND casual <= 538.500 AND registered <= 3628.500 AND

registered > 3426.000 AND casual > 234.500 AND temp <= 0.700 AND mnth > 10.500 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered <= 3837.000 AND casual <= 538.500 AND registered <= 3628.500 AND registered > 3426.000 AND casual > 234.500 AND temp > 0.700 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered <= 3837.000 AND casual <= 538.500 AND registered > 3628.500 AND temp <= 0.322 AND mnth <= 2.500 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered <= $3837.000 \text{ AND casual} \le 538.500 \text{ AND registered} > 3628.500 \text{ AND temp} \le 0.322 \text{ AND}$ mnth > 2.500 AND casual <= 244.500 AND mnth <= 7.000 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered <= $3837.000 \text{ AND casual} \le 538.500 \text{ AND registered} > 3628.500 \text{ AND temp} \le 0.322 \text{ AND}$ mnth > 2.500 AND casual <= 244.500 AND mnth > 7.000 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered <= $3837.000 \text{ AND casual} \le 538.500 \text{ AND registered} > 3628.500 \text{ AND temp} \le 0.322 \text{ AND}$ mnth > 2.500 AND casual > 244.500 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered <= 3837.000 AND casual <= 538.500 AND registered > 3628.500 AND temp > 0.322 AND registered <= 3713.000 AND hum <= 0.879 AND weekday <= 1.500 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered <= 3837.000 AND casual <= 538.500 AND registered > 3628.500 AND temp > 0.322 AND registered <= 3713.000 AND hum <= 0.879 AND weekday > 1.500 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered <= 3837.000 AND casual <= 538.500 AND registered > 3628.500 AND temp > 0.322 AND registered <= 3713.000 AND hum > 0.879 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered <= 3837.000 AND casual <= 538.500 AND registered > 3628.500 AND temp > 0.322 AND registered > 3713.000 AND casual <= 338.000 AND mnth <= 11.500 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered <= 3837.000 AND casual <= 538.500 AND registered > 3628.500 AND temp > 0.322 AND registered > 3713.000 AND casual <= 338.000 AND mnth > 11.500 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <=1291.000 AND registered <= 3837.000 AND casual <= 538.500 AND registered > 3628.500 AND temp > 0.322 AND registered > 3713.000 AND casual > 338.000 AND casual <= 359.500 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered <= 3837.000 AND casual <= 538.500 AND registered > 3628.500 AND temp > 0.322 AND registered > 3713.000 AND casual > 338.000 AND casual > 359.500 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered <= 3837.000 AND casual > 538.500 AND casual <= 787.000 AND registered <= 3513.000 AND registered<= 3355.500 AND casual <= 671.500 AND temp <= 0.608 AND class 0', 'registered >3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered <= 3837.000 AND casual > 538.500 AND casual <= 787.000 AND registered <= 3513.000 AND registered <= 3355.500 AND casual <= 671.500 AND temp > 0.608 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered ≤ 3837.000 AND casual ≥ 538.500 AND casual ≤ 787.000 AND registered <= 3513.000 AND registered <= 3355.500 AND casual > 671.500 AND windspeed <= 0.156 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual

<= 1291.000 AND registered <= 3837.000 AND casual > 538.500 AND casual <= 787.000 AND registered <= 3513.000 AND registered <= 3355.500 AND casual > 671.500 AND windspeed > 0.156 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered <= 3837.000 AND casual > 538.500 AND casual <= 787.000 AND registered <= 3513.000 AND registered > 3355.500 AND atemp <= 0.498 AND registered <= 3466.000 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered \leq 3837.000 AND casual \geq 538.500 AND casual \leq 787.000 AND registered \leq 3513.000 AND registered > 3355.500 AND atemp \leq 0.498 AND registered >3466.000 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered <= 3837.000 AND casual > 538.500 AND casual <= 787.000 AND registered <= 3513.000 AND registered > 3355.500 AND atemp > 0.498 AND temp <= 0.590 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered <= 3837.000 AND casual > 538.500 AND casual <= 787.000 AND registered <= 3513.000 AND registered > 3355.500 AND atemp > 0.498 AND temp > 0.590 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered <= 3837.000 AND casual > 538.500 AND casual <= 787.000 AND registered > 3513.000 AND registered \leq 3693.000 AND mnth \leq 6.000 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered <= 3837.000 AND casual > 538.500 AND casual <= 787.000 AND registered > 3513.000 AND registered \leq 3693.000 AND mnth > 6.000 AND hum \leq 0.567 AND class 0', 'registered >3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered <= 3837.000 AND casual > 538.500 AND casual <= 787.000 AND registered > 3513.000 AND registered \leq 3693.000 AND mnth > 6.000 AND hum > 0.567 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered ≤ 3837.000 AND casual ≥ 538.500 AND casual ≤ 787.000 AND registered > 3513.000 AND registered > 3693.000 AND casual <= 715.000 AND registered <= 3816.000 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered <= 3837.000 AND casual > 538.500 AND casual <= 787.000 AND registered > 3513.000 AND registered > 3693.000 AND casual <= 715.000 AND registered > 3816.000 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered <= 3837.000 AND casual > 538.500 AND casual <= 787.000 AND registered > 3513.000 AND registered> 3693.000 AND casual > 715.000 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered <= 3837.000 AND casual > 538.500 AND casual > 787.000 AND registered <= 3625.500 AND windspeed<= 0.155 AND weathersit <= 1.500 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered <= 3837.000 AND casual > 538.500 AND casual > 787.000 AND registered <= 3625.500 AND windspeed \leq 0.155 AND weathersit > 1.500 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered <= 3837.000 AND casual > 538.500 AND casual > 787.000 AND registered <= 3625.500 AND windspeed >0.155 AND casual <= 838.500 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered <= 3837.000 AND casual >538.500 AND casual > 787.000 AND registered <= 3625.500 AND windspeed > 0.155 AND casual > 838.500 AND temp <= 0.756 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered <= 3837.000 AND

casual > 538.500 AND casual > 787.000 AND registered <= 3625.500 AND windspeed > 0.155 AND casual > 838.500 AND temp > 0.756 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered <= 3837.000 AND casual > 538.500 AND casual > 787.000 AND registered > 3625.500 AND casual <= 843.000 AND casual <= 807.000 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered <= 3837.000 AND casual > 538.500 AND casual > 787.000 AND registered > 3625.500 AND casual <= 843.000 AND casual > 807.000 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered <= 3837.000 AND casual > 538.500 AND casual > 787.000 AND registered > 3625.500 AND casual > 843.000 AND hum <= 0.590 AND hum <= 0.524 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered <= 3837.000 AND casual > 538.500 AND casual > 787.000 AND registered > 3625.500 AND casual >843.000 AND hum <= 0.590 AND hum > 0.524 AND class 0', 'registered > 3173.000 AND registered \leftarrow 4280.500 AND casual \leftarrow 1291.000 AND registered \leftarrow 3837.000 AND casual > 538.500 AND casual > 787.000 AND registered > 3625.500 AND casual > 843.000 AND hum > 0.590 AND weathersit <= 1.500 AND class 0', 'registered >3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered <= 3837.000 AND casual > 538.500 AND casual > 787.000 AND registered > 3625.500 AND casual > 843.000 AND hum > 0.590 AND weathersit > 1.500 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered > 3837.000 AND casual <= 886.000 AND casual <= 522.500 AND casual <= 278.500 AND weekday <= 2.500 AND windspeed <= 0.231 AND hum <= 0.446 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered > 3837.000 AND casual <= 886.000 AND casual <= 522.500 AND casual <= 278.500 AND weekday <= 2.500 AND windspeed <= 0.231 AND hum > 0.446 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered > 3837.000 AND casual <= 886.000 AND casual <= 522.500 AND casual <= 278.500 AND weekday <= 2.500 AND windspeed > 0.231 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered > $3837.000 \text{ AND casual} \le 886.000 \text{ AND casual} \le 522.500 \text{ AND casual} \le 278.500 \text{ AND}$ weekday > 2.500 AND class 0', 'registered > 3173.000 AND registered <= 4280.500</pre> AND casual <= 1291.000 AND registered > 3837.000 AND casual <= 886.000 AND casual <= 522.500 AND casual > 278.500 AND weekday <= 2.500 AND season <= 2.500 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered > 3837.000 AND casual <= 886.000 AND casual <= 522.500 AND casual > 278.500 AND weekday <= 2.500 AND season > 2.500 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered > 3837.000 AND casual <= 886.000 AND casual <= 522.500 AND casual > 278.500 AND weekday > 2.500 AND temp <= 0.440 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered > 3837.000 AND casual <= 886.000 AND casual <= 522.500 AND casual > 278.500 AND weekday > 2.500 AND temp > 0.440 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered > 3837.000 AND casual <= 886.000 AND casual > 522.500 AND registered <= 3963.000 AND casual <= 808.500 AND casual <= 664.000 AND mnth <= 5.500 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered > 3837.000 AND casual <= 886.000 AND casual > 522.500 AND registered <= 3963.000

AND casual <= 808.500 AND casual <= 664.000 AND mnth > 5.500 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered > 3837.000 AND casual <= 886.000 AND casual > 522.500 AND registered \leq 3963.000 AND casual \leq 808.500 AND casual > 664.000 AND temp \leq 0.602 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered > 3837.000 AND casual <= 886.000 AND casual > 522.500 AND registered <= 3963.000 AND casual <= 808.500 AND casual > 664.000 AND temp > 0.602 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered > 3837.000 AND casual <= 886.000 AND casual > 522.500 AND registered <= 3963.000 AND casual > 808.500 AND atemp <= 0.638 AND casual <= 864.500 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered > 3837.000 AND casual <= 886.000 AND casual > 522.500 AND registered <= 3963.000 AND casual > 808.500 AND atemp <= 0.638 AND casual > 864.500 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered > 3837.000 AND casual <= 886.000 AND casual > 522.500 AND registered <= 3963.000 AND casual > 808.500 AND atemp > 0.638 AND registered <= 3910.500 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered > 3837.000 AND casual <= 886.000 AND casual > 522.500 AND registered <= 3963.000 AND casual > 808.500 AND atemp > 0.638 AND registered > 3910.500 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered > 3837.000 AND casual <= 886.000 AND casual > 522.500 AND registered > 3963.000 AND registered <= 4151.000 AND casual <= 752.500 AND registered <= 4044.000 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <=1291.000 AND registered > 3837.000 AND casual <= 886.000 AND casual > 522.500 AND registered > 3963.000 AND registered <= 4151.000 AND casual <= 752.500 AND registered > 4044.000 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered > 3837.000 AND casual <= 886.000 AND casual > 522.500 AND registered > 3963.000 AND registered <= 4151.000 AND casual > 752.500 AND registered <= 3980.500 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered > 3837.000 AND casual <= 886.000 AND casual > 522.500 AND registered > 3963.000 AND registered <= 4151.000 AND casual > 752.500 AND registered > 3980.500 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered > 3837.000 AND casual <= 886.000 AND casual > 522.500 AND registered > 3963.000 AND registered > 4151.000 AND atemp <= 0.618 AND windspeed <= 0.183 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered > 3837.000 AND casual <= 886.000 AND casual > 522.500 AND registered > 3963.000 AND registered > 4151.000 AND atemp <= 0.618 AND windspeed > 0.183 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered > 3837.000 AND casual <= 886.000 AND casual > 522.500 AND registered > 3963.000 AND registered > 4151.000 AND atemp > 0.618 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered > 3837.000 AND casual > 886.000 AND hum <= 0.406 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered > 3837.000 AND casual > 886.000 AND hum > 0.406 AND weekday \leq 4.500 AND weekday \leq 3.500 AND mnth \leq 9.500 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND

registered > 3837.000 AND casual > 886.000 AND hum > 0.406 AND weekday <= 4.500 AND weekday \leq 3.500 AND mnth > 9.500 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered > 3837.000 AND casual > 886.000 AND hum > 0.406 AND weekday <= 4.500 AND weekday > 3.500 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered > 3837.000 AND casual > 886.000 AND hum > 0.406 AND weekday > 4.500 AND registered <= 4015.000 AND atemp <= 0.655 AND windspeed <=0.125 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered > 3837.000 AND casual > 886.000 AND hum > 0.406 AND weekday > 4.500 AND registered <= 4015.000 AND atemp <= 0.655 AND windspeed > 0.125 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered > 3837.000 AND casual > 886.000 AND hum > 0.406 AND weekday > 4.500 AND registered <= 4015.000 AND atemp > 0.655 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered > 3837.000 AND casual > 886.000 AND hum > 0.406 AND weekday > 4.500 AND registered > 4015.000 AND hum <= 0.629 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual <= 1291.000 AND registered > 3837.000 AND casual > 886.000 AND hum > 0.406 AND weekday > 4.500 AND registered > 4015.000 AND hum > 0.629 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual > 1291.000 AND casual <= 2070.500 AND registered <= 3920.500 AND casual <= 1696.000 AND registered <= 3619.000 AND hum <= 0.683 AND season <= 2.500 AND temp <= 0.505 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual > 1291.000 AND casual <= 2070.500 AND registered <= 3920.500 AND casual <= 1696.000 AND registered <= 3619.000 AND hum <= 0.683 AND season <= 2.500 AND temp > 0.505 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual > 1291.000 AND casual <= 2070.500 AND registered <= 3920.500 AND casual \leq 1696.000 AND registered \leq 3619.000 AND hum \leq 0.683 AND season >2.500 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual > 1291.000 AND casual <= 2070.500 AND registered <= 3920.500 AND casual <= 1696.000 AND registered <= 3619.000 AND hum > 0.683 AND registered <= 3438.500 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual > 1291.000 AND casual <= 2070.500 AND registered <= 3920.500 AND casual <= 1696.000 AND registered <= 3619.000 AND hum > 0.683 AND registered > 3438.500 AND hum <= 0.863 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual > 1291.000 AND casual <= 2070.500 AND registered <= 3920.500 AND casual <= 1696.000 AND registered <= 3619.000 AND hum > 0.683 AND registered > 3438.500 AND hum > 0.863 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual > 1291.000 AND casual <= 2070.500 AND registered <= 3920.500 AND casual <= 1696.000 AND registered > 3619.000 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual > 1291.000 AND casual <= 2070.500AND registered <= 3920.500 AND casual > 1696.000 AND registered <= 3294.500 AND atemp <= 0.591 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual > 1291.000 AND casual <= 2070.500 AND registered <= 3920.500 AND casual > 1696.000 AND registered <= 3294.500 AND atemp > 0.591 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual > 1291.000 AND $casual \le 2070.500 \text{ AND registered} \le 3920.500 \text{ AND casual} > 1696.000 \text{ AND}$ registered > 3294.500 AND registered <= 3621.000 AND windspeed <= 0.189 AND weekday <= 3.000 AND class 0', 'registered > 3173.000 AND registered <= 4280.500

AND casual > 1291.000 AND casual <= 2070.500 AND registered <= 3920.500 AND casual > 1696.000 AND registered > 3294.500 AND registered <= 3621.000 AND windspeed \leq 0.189 AND weekday > 3.000 AND class 0', 'registered > 3173.000 AND $registered \le 4280.500 \text{ AND } casual > 1291.000 \text{ AND } casual \le 2070.500 \text{ AND }$ registered <= 3920.500 AND casual > 1696.000 AND registered > 3294.500 AND registered \leq 3621.000 AND windspeed > 0.189 AND casual \leq 1932.000 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual > 1291.000 AND casual <= 2070.500 AND registered <= 3920.500 AND casual > 1696.000 AND registered > 3294.500 AND registered <= 3621.000 AND windspeed > 0.189 AND casual > 1932.000 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual > 1291.000 AND casual <= 2070.500 AND registered <= 3920.500 AND casual > 1696.000 AND registered > 3294.500 AND registered > 3621.000 AND casual <= 1741.500 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual > 1291.000 AND casual <= 2070.500 AND registered <= 3920.500 AND casual > 1696.000 AND registered > 3294.500 AND registered > 3621.000 AND casual > 1741.500 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual > 1291.000 AND casual <= 2070.500 AND registered > 3920.500 AND hum <= 0.657 AND windspeed <= 0.172 AND class 0', 'registered > 3173.000 AND $registered \le 4280.500 \text{ AND } casual > 1291.000 \text{ AND } casual \le 2070.500 \text{ AND }$ registered > 3920.500 AND hum <= 0.657 AND windspeed > 0.172 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual > 1291.000 AND casual ≤ 2070.500 AND registered ≥ 3920.500 AND hum ≥ 0.657 AND windspeed \leq 0.206 AND mnth <= 8.000 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual > 1291.000 AND casual <= 2070.500 AND registered > 3920.500 AND hum > 0.657 AND windspeed <= 0.206 AND mnth > 8.000 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual > 1291.000 AND casual <= 2070.500 AND registered > 3920.500 AND hum > 0.657 AND windspeed > 0.206 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual > 1291.000 AND casual > 2070.500 AND windspeed <= 0.138 AND registered <= 3185.500 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual > 1291.000 AND casual > 2070.500 AND windspeed <= 0.138 AND registered > 3185.500 AND atemp <= 0.676 AND windspeed <= 0.124 AND windspeed <= 0.092 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual > 1291.000 AND casual > 2070.500 AND windspeed <= 0.138 AND registered > 3185.500 AND atemp <= 0.676 AND windspeed <= 0.124 AND windspeed > 0.092 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual > 1291.000 AND casual > 2070.500 AND windspeed <= 0.138 AND registered > 3185.500 AND atemp <= 0.676 AND windspeed > 0.124 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual > 1291.000 AND casual > 2070.500 AND windspeed <= 0.138AND registered > 3185.500 AND atemp > 0.676 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual > 1291.000 AND casual > 2070.500 AND windspeed > 0.138 AND casual <= 2479.500 AND hum <= 0.705 AND yr <= 0.500 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual > 1291.000 AND casual > 2070.500 AND windspeed > 0.138 AND casual <= 2479.500 AND hum <= 0.705 AND yr > 0.500 AND weathersit <= 1.500 AND class 0', 'registered >3173.000 AND registered <= 4280.500 AND casual > 1291.000 AND casual > 2070.500 AND windspeed > 0.138 AND casual <= 2479.500 AND hum <= 0.705 AND yr > 0.500 AND weathersit > 1.500 AND class 0', 'registered > 3173.000 AND registered <=

4280.500 AND casual > 1291.000 AND casual > 2070.500 AND windspeed > 0.138 AND casual <= 2479.500 AND hum > 0.705 AND registered <= 3993.000 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual > 1291.000 AND casual > 2070.500 AND windspeed > 0.138 AND casual <= 2479.500 AND hum > 0.705AND registered > 3993.000 AND temp <= 0.627 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual > 1291.000 AND casual > 2070.500 AND windspeed > 0.138 AND casual <= 2479.500 AND hum > 0.705 AND registered > 3993.000 AND temp > 0.627 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual > 1291.000 AND casual > 2070.500 AND windspeed > 0.138 AND casual > 2479.500 AND atemp <= 0.485 AND class 0', 'registered > 3173.000 AND registered \leq 4280.500 AND casual \geq 1291.000 AND casual \geq 2070.500 AND windspeed > 0.138 AND casual > 2479.500 AND atemp > 0.485 AND atemp <= 0.642 AND mnth <= 4.500 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual > 1291.000 AND casual > 2070.500 AND windspeed > 0.138 AND casual > 2479.500 AND atemp > 0.485 AND atemp <= 0.642 AND mnth > 4.500 AND class 0', 'registered > 3173.000 AND registered <= 4280.500 AND casual > 1291.000 AND casual > 2070.500 AND windspeed > 0.138 AND casual > 2479.500 AND atemp > 0.485 AND atemp > 0.642AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual <= 913.000 AND registered <= 5691.000 AND registered <= 5082.500 AND registered <= 4577.500 AND casual <= 553.500 AND casual <= 413.000 AND temp <= 0.493 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual <= 913.000 AND registered <= 5691.000 AND registered <= 5082.500 AND registered <= 4577.500 AND casual <= 553.500 AND casual <= 413.000 AND temp > 0.493 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual < 913.000 AND registered <= 5691.000 AND registered <= 5082.500 AND registered <= 4577.500 AND $casual \le 553.500 \text{ AND } casual > 413.000 \text{ AND } atemp \le 0.434 \text{ AND } hum \le 0.491 \text{ AND } atemp \le 0.494 \text{ AND } hum \le 0.491 \text{ AND } atemp \le 0.494 \text{ AND } hum \le 0.491 \text{ AND } atemp \le 0.494 \text{ AND } hum \le 0.491 \text{ AND } atemp \le 0.494 \text{ AND } hum \le 0.491 \text{ AND } atemp \le 0.494 \text{ AND } hum \le 0.491 \text{ AND } atemp \le 0.494 \text{ AND } hum \le 0.491 \text{ AND } hum \ge 0.491 \text{ AND } hum$ class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual <= 913.000 AND registered <= 5691.000 AND registered <= 5082.500 AND registered <= 4577.500 AND casual <= 553.500 AND casual > 413.000 AND atemp <= 0.434 AND hum > 0.491 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual <= 913.000 AND registered <= 5691.000 AND registered <= 5082.500 AND registered <= 4577.500 AND casual <= 553.500 AND casual > 413.000 AND atemp > 0.434 AND hum <= 0.795 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual <= 913.000 AND registered <= 5691.000 AND registered <= 5082.500 AND registered <= 4577.500 AND casual <= 553.500 AND casual > 413.000 AND atemp > 0.434 AND hum > 0.795 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual <= 913.000 AND registered <= 5691.000 AND registered <= 5082.500 AND registered <= 4577.500 AND casual > 553.500 AND casual <= 727.000 AND mnth <= 6.500 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual <= 913.000 AND registered <= 5691.000 AND registered <= 5082.500 AND registered <= 4577.500 AND casual > 553.500 AND casual <= 727.000 AND mnth > 6.500 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual <= 913.000 AND registered <= 5691.000 AND registered <= 5082.500 AND registered <= 4577.500 AND casual > 553.500 AND casual > 727.000 AND season <= 2.500 AND temp <= 0.621 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual <= 913.000 AND registered <= 5691.000 AND registered <= 5082.500 AND registered <= 4577.500 AND casual > 553.500 AND casual > 727.000 AND season <= 2.500 AND temp > 0.621 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND

casual <= 913.000 AND registered <= 5691.000 AND registered <= 5082.500 AND registered <= 4577.500 AND casual > 553.500 AND casual > 727.000 AND season > 2.500 AND atemp <= 0.625 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual <= 913.000 AND registered <= 5691.000 AND registered <= 5082.500 AND registered <= 4577.500 AND casual > 553.500 AND casual > 727.000 AND season > 2.500 AND atemp > 0.625 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual <= 913.000 AND registered <= 5691.000 AND registered \leq 5082.500 AND registered \geq 4577.500 AND casual \leq 413.500 AND registered <= 4775.000 AND hum <= 0.581 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual <= 913.000 AND registered <= 5691.000 AND registered \leq 5082.500 AND registered \geq 4577.500 AND casual \leq 413.500 AND registered <= 4775.000 AND hum > 0.581 AND mnth <= 7.500 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual < 913.000 AND registered <= 5691.000 AND registered <= 5082.500 AND registered > 4577.500 AND $casual \le 413.500 \text{ AND registered} \le 4775.000 \text{ AND hum} > 0.581 \text{ AND mnth} > 7.500$ AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual <= 913.000 AND registered <= 5691.000 AND registered <= 5082.500 AND registered > $4577.500 \text{ AND casual} \le 413.500 \text{ AND registered} > 4775.000 \text{ AND temp} \le 0.394 \text{ AND}$ windspeed <= 0.193 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual <= 913.000 AND registered <= 5691.000 AND registered <= 5082.500 AND registered > 4577.500 AND casual <= 413.500 AND registered > 4775.000 AND temp <= 0.394 AND windspeed > 0.193 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual <= 913.000 AND registered <= 5691.000 AND registered <= 5082.500 AND registered > 4577.500 AND casual <= 413.500 AND registered > 4775.000 AND temp > 0.394 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual <= 913.000 AND registered <= 5691.000 AND registered <= 5082.500 AND registered > 4577.500 AND casual > 413.500 AND weekday <= 3.500 AND weekday <= 1.500 AND season <= 3.000 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual <= 913.000 AND registered <= 5691.000 AND registered <= 5082.500 AND registered > 4577.500 AND casual > 413.500 AND weekday <= 3.500 AND weekday <= 1.500 AND season > 3.000AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual <= 913.000 AND registered <= 5691.000 AND registered <= 5082.500 AND registered > 4577.500 AND casual > 413.500 AND weekday <= 3.500 AND weekday > 1.500 AND hum<= 0.631 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual <= 913.000 AND registered <= 5691.000 AND registered <= 5082.500 AND registered > 4577.500 AND casual > 413.500 AND weekday <= 3.500 AND weekday > 1.500 AND hum > 0.631 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual <= 913.000 AND registered <= 5691.000 AND registered <= 5082.500 AND registered > 4577.500 AND casual > 413.500 AND weekday > 3.500 AND registered <= 4667.000 AND windspeed <= 0.152 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual <= 913.000 AND registered <= 5691.000 AND registered <= 5082.500 AND registered > 4577.500 AND casual > 413.500 AND weekday > 3.500 AND registered <= 4667.000 AND windspeed > 0.152 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual <= 913.000AND registered <= 5691.000 AND registered <= 5082.500 AND registered > 4577.500 AND casual > 413.500 AND weekday > 3.500 AND registered > 4667.000 AND mnth <= 3.500 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual

<= 913.000 AND registered <= 5691.000 AND registered <= 5082.500 AND registered > 4577.500 AND casual > 413.500 AND weekday > 3.500 AND registered > 4667.000AND mnth > 3.500 AND class 0', 'registered > 3173.000 AND registered > 4280.500AND casual \leq 913.000 AND registered \leq 5691.000 AND registered \geq 5082.500 AND casual <= 544.500 AND registered <= 5459.000 AND registered <= 5219.500 AND casual <= 427.000 AND casual <= 396.000 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual <= 913.000 AND registered <= 5691.000 AND $registered > 5082.500 \ AND \ casual <= 544.500 \ AND \ registered <= 5459.000 \ AND$ registered <= 5219.500 AND casual <= 427.000 AND casual > 396.000 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual <= 913.000 AND registered \leq 5691.000 AND registered \geq 5082.500 AND casual \leq 544.500 AND registered <= 5459.000 AND registered <= 5219.500 AND casual > 427.000 AND registered <= 5198.000 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual <= 913.000 AND registered <= 5691.000 AND registered > 5082.500 AND casual <= 544.500 AND registered <= 5459.000 AND registered <= 5219.500 AND casual > 427.000 AND registered > 5198.000 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual <= 913.000 AND registered \leq 5691.000 AND registered \geq 5082.500 AND casual \leq 544.500 AND registered <= 5459.000 AND registered > 5219.500 AND hum <= 0.526 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual < 913.000 AND registered <= 5691.000 AND registered > 5082.500 AND casual <= 544.500 AND registered <= 5459.000 AND registered > 5219.500 AND hum > 0.526 AND registered <= 5263.000 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual <= 913.000 AND registered <= 5691.000 AND registered > 5082.500 AND casual <= 544.500 AND registered <= 5459.000 AND registered > 5219.500 AND hum > 0.526 AND registered > 5263.000 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual <= 913.000 AND registered <= 5691.000 AND registered > 5082.500 AND casual <= 544.500 AND registered > 5459.000 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual <= 913.000 AND registered \leq 5691.000 AND registered \geq 5082.500 AND casual \geq 544.500 AND registered ≤ 5303.000 AND registered ≤ 5190.500 AND casual ≤ 700.000 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual <= 913.000 AND registered \leq 5691.000 AND registered \geq 5082.500 AND casual \geq 544.500 AND registered <= 5303.000 AND registered <= 5190.500 AND casual > 700.000 AND hum <= 0.593 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual <= 913.000 AND registered <= 5691.000 AND registered > 5082.500 AND casual > 544.500 AND registered <= 5303.000 AND registered <= 5190.500 AND casual > 700.000 AND hum > 0.593 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual <= 913.000 AND registered <= 5691.000 AND registered > 5082.500 AND casual > 544.500 AND registered <= 5303.000 AND registered > 5190.500 AND season <= 3.000 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual <= 913.000 AND registered <= 5691.000 AND registered > 5082.500 AND casual > 544.500 AND registered <= 5303.000 ANDregistered > 5190.500 AND season > 3.000 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual <= 913.000 AND registered <= 5691.000 AND registered > 5082.500 AND casual > 544.500 AND registered > 5303.000 AND registered <= 5624.500 AND atemp <= 0.597 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual < 913.000 AND registered < 5691.000 AND

registered > 5082.500 AND casual > 544.500 AND registered > 5303.000 AND registered <= 5624.500 AND atemp > 0.597 AND casual <= 888.000 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual <= 913.000 AND registered \leq 5691.000 AND registered > 5082.500 AND casual > 544.500 AND registered > 5303.000 AND registered <= 5624.500 AND atemp > 0.597 AND casual > 888.000 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual <= 913.000 AND registered <= 5691.000 AND registered > 5082.500 AND casual > 544.500 AND registered > 5303.000 AND registered > 5624.500 AND windspeed <= 0.108 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual <= 913.000 AND registered <= 5691.000 AND registered > 5082.500 AND casual > 544.500 AND registered > 5303.000 AND registered > 5624.500 AND windspeed > 0.108 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual <= 913.000 AND registered > 5691.000 AND registered <= 6141.500 AND temp <= 0.461 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual <= 913.000 AND registered > 5691.000 AND registered <= 6141.500 AND temp > 0.461 AND weekday <= 1.500 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual <= 913.000 AND registered > 5691.000 AND registered <= 6141.500 AND temp > 0.461 AND weekday > 1.500 AND mnth \leq 5.500 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual <= 913.000 AND registered > 5691.000 AND registered <= 6141.500 AND temp > 0.461 AND weekday > 1.500 AND mnth > 5.500 AND hum <= 0.667 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual <= 913.000 AND registered > 5691.000 AND registered <= 6141.500 AND temp > 0.461 AND weekday > 1.500 AND mnth > 5.500 AND hum > 0.667 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual <= 913.000 AND registered > 5691.000 AND registered > 6141.500 AND registered <= 6667.500 AND registered <= 6358.500 AND mnth <= 9.500 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual <= 913.000 AND registered > 5691.000 AND registered > 6141.500 AND registered <= 6667.500 AND registered <= 6358.500 AND mnth > 9.500 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual <= 913.000 AND registered > 5691.000 AND registered > 6141.500 AND registered <= 6667.500 AND registered > 6358.500 AND weekday <= 3.000 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual < 913.000 AND registered > 5691.000 AND registered > 6141.500 AND registered <= 6667.500 AND registered > 6358.500 AND weekday > 3.000 AND registered <= 6563.000 AND casual <= 883.000 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual <= 913.000 AND registered > 5691.000 AND registered > 6141.500 AND registered <= 6667.500 AND registered > 6358.500 AND weekday > 3.000 AND registered <= 6563.000 AND casual > 883.000 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual <= 913.000 AND registered > 5691.000 AND registered > 6141.500 AND registered <= 6667.500 AND registered > 6358.500 AND weekday > 3.000 AND registered > 6563.000 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual <= 913.000 AND registered > 5691.000 AND registered > 6141.500 AND registered > 6667.500 AND registered <= 6871.000 AND registered <= 6748.000 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual <= 913.000 AND registered > 5691.000 AND registered > 6141.500 AND registered > 6667.500 AND registered <= 6871.000 AND registered > 6748.000 AND casual <= 758.000 AND class 0', 'registered > 3173.000 AND

registered > 4280.500 AND casual <= 913.000 AND registered > 5691.000 AND registered > 6141.500 AND registered > 6667.500 AND registered <= 6871.000 AND registered > 6748.000 AND casual > 758.000 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual <= 913.000 AND registered > 5691.000 AND registered > 6141.500 AND registered > 6667.500 AND registered > 6871.000 AND mnth <= 9.500 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual <= 913.000 AND registered > 5691.000 AND registered > 6141.500 AND registered > 6667.500 AND registered > 6871.000 AND mnth > 9.500 AND casual <= 787.500 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual <= 913.000 AND registered > 5691.000 AND registered > 6141.500 AND registered > 6667.500 AND registered > 6871.000 AND mnth > 9.500 AND casual > 787.500 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered <= 5874.000 AND casual <= 2404.500 AND registered <= 5401.000 AND casual <= 1911.000 AND registered <= 4950.500 AND season <= 2.500 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered <= 5874.000 AND casual <= 2404.500 AND registered <= 5401.000 AND casual <= 1911.000 AND registered <= 4950.500 AND season > 2.500 AND windspeed <= 0.260 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered <= 5874.000 AND casual <= 2404.500 AND registered <= 5401.000 AND casual <= 1911.000 AND registered <= 4950.500 AND season > 2.500 AND windspeed > 0.260 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered <= 5874.000 AND casual <= 2404.500 AND registered <= 5401.000 AND casual <= 1911.000 AND registered > 4950.500 AND casual <= 1307.500 AND hum <= 0.571 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered <= 5874.000 AND casual <= 2404.500 AND registered <= 5401.000 AND $casual \le 1911.000 \text{ AND registered} > 4950.500 \text{ AND casual} \le 1307.500 \text{ AND hum} > 100.500 \text{ AND hum} > 100.5000 \text{ AND hum} > 100.500 \text{ AND hum} > 100.5000 \text{ AND hum$ 0.571 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered <= 5874.000 AND casual <= 2404.500 AND registered <= 5401.000 AND casual <= 1911.000 AND registered > 4950.500 AND casual > 1307.500AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered <= 5874.000 AND casual <= 2404.500 AND registered <= 5401.000 AND casual > 1911.000 AND registered <= 4560.500 AND weekday <= 3.000 AND hum <= 0.534 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered <= 5874.000 AND casual <= 2404.500 AND registered <= 5401.000 AND casual > 1911.000 AND registered <= 4560.500 AND weekday <= 3.000 AND hum > 0.534 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered <= 5874.000 AND casual <= 2404.500 AND registered <= 5401.000 AND casual > 1911.000 AND registered <= 4560.500 AND weekday > 3.000 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered <= 5874.000 AND casual <= 2404.500 AND registered <= 5401.000 AND casual > 1911.000 AND registered > 4560.500 AND registered <= 5020.500 AND atemp <= 0.407 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered <= 5874.000 AND casual <= 2404.500 AND registered <= 5401.000 AND casual > 1911.000 AND registered > 4560.500 AND registered <= 5020.500 AND atemp > 0.407 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered <= 5874.000 AND casual <= 2404.500 AND registered <= 5401.000 AND

casual > 1911.000 AND registered > 4560.500 AND registered > 5020.500 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered \leq 5874.000 AND casual \leq 2404.500 AND registered > 5401.000 AND weekday <= 4.500 AND casual <= 1031.000 AND registered <= 5774.500 AND registered <= 5609.000 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered <= 5874.000 AND casual <= 2404.500AND registered > 5401.000 AND weekday <= 4.500 AND casual <= 1031.000 AND registered <= 5774.500 AND registered > 5609.000 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered <= $5874.000 \text{ AND casual} \le 2404.500 \text{ AND registered} > 5401.000 \text{ AND weekday} \le 4.500$ AND casual \leq 1031.000 AND registered > 5774.500 AND atemp \leq 0.604 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered \leq 5874.000 AND casual \leq 2404.500 AND registered > 5401.000 AND weekday <= 4.500 AND casual <= 1031.000 AND registered > 5774.500 AND atemp > 0.604 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered <= 5874.000 AND casual <= 2404.500 AND registered > 5401.000 AND weekday <= 4.500 AND casual > 1031.000 AND registered <= 5828.000 AND hum <= 0.525 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered <= 5874.000 AND casual <= 2404.500 AND registered > 5401.000 AND weekday <= 4.500 AND casual > 1031.000 AND registered <= 5828.000 AND hum > 0.525 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered <= 5874.000 AND casual <= 2404.500 AND registered > 5401.000 AND weekday <= 4.500 AND casual > 1031.000 AND registered > 5828.000 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered <= 5874.000 AND casual <= 2404.500 AND registered > 5401.000 AND weekday > 4.500 AND casual <= 1323.500 AND season <= 2.500 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered <= 5874.000 AND casual <= 2404.500 AND registered > 5401.000 AND weekday > 4.500 AND casual <= 1323.500 AND season > 2.500 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered <= 5874.000 AND casual <= 2404.500 AND registered > 5401.000 AND weekday > 4.500 AND casual > 1323.500 AND windspeed <= 0.224 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered <= 5874.000 AND casual <= 2404.500 AND registered > 5401.000 AND weekday > 4.500 AND casual > 1323.500 AND windspeed > 0.224 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered <= 5874.000 AND casual > 2404.500 AND registered <= 4875.000 AND registered <= 4545.000 AND windspeed <= 0.189 AND casual <= 2592.500 AND weathersit <= 1.500 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered <= 5874.000 AND casual > 2404.500 AND registered \leq 4875.000 AND registered \leq 4545.000 AND windspeed \leq 0.189 AND casual <= 2592.500 AND weathersit > 1.500 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered <= 5874.000 AND casual > 2404.500 AND registered <= 4875.000 AND registered <= 4545.000 AND windspeed <= 0.189 AND casual > 2592.500 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered <= 5874.000 AND casual > 2404.500 AND registered <= 4875.000 AND registered <= 4545.000 AND windspeed > 0.189 AND atemp <= 0.579 AND class 0', 'registered > 3173.000 AND

registered > 4280.500 AND casual > 913.000 AND registered <= 5874.000 AND casual > 2404.500 AND registered <= 4875.000 AND registered <= 4545.000 AND windspeed >0.189 AND atemp > 0.579 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered <= 5874.000 AND casual > 2404.500 AND registered <= 4875.000 AND registered > 4545.000 AND casual <= 2879.000 AND casual <= 2639.500 AND registered <= 4824.000 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered <= 5874.000 AND casual > 2404.500 AND registered <= 4875.000 AND registered > 4545.000 AND casual <= 2879.000 AND casual <= 2639.500 AND registered > 4824.000AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered <= 5874.000 AND casual > 2404.500 AND registered <= 4875.000 AND registered > 4545.000 AND casual <= 2879.000 AND casual > 2639.500 AND windspeed <= 0.185 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered <= 5874.000 AND casual > 2404.500AND registered <= 4875.000 AND registered > 4545.000 AND casual <= 2879.000 AND casual > 2639.500 AND windspeed > 0.185 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered <= 5874.000 AND casual > 2404.500 AND registered <= 4875.000 AND registered > 4545.000 AND casual > 2879.000 AND mnth <= 4.500 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered <= 5874.000 AND casual > 2404.500 AND registered \leq 4875.000 AND registered \geq 4545.000 AND casual \geq 2879.000 AND mnth > 4.500 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered <= 5874.000 AND casual > 2404.500 AND registered > 4875.000 AND casual <= 3095.500 AND registered <= 5246.500 AND season <= 2.500 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered <= 5874.000 AND casual > 2404.500 AND registered > 4875.000 AND casual <= 3095.500 AND registered <= 5246.500 AND season > 2.500 AND windspeed <= 0.252 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered <= 5874.000 AND casual > 2404.500 AND registered > 4875.000 AND casual <= 3095.500 AND registered <= 5246.500 AND season > 2.500 AND windspeed > 0.252 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered <= 5874.000 AND casual > 2404.500 AND registered > 4875.000 AND casual <= 3095.500 AND registered > 5246.500 AND casual <= 2512.000 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered <= 5874.000 AND casual > 2404.500 AND registered > 4875.000 AND casual <= 3095.500 AND registered > 5246.500 AND casual > 2512.000 AND temp <= 0.597 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered <= 5874.000 AND casual > 2404.500 AND registered > 4875.000 AND casual <= 3095.500 AND registered > 5246.500 AND casual > 2512.000 AND temp > 0.597 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND $registered \le 5874.000 \text{ AND } casual > 2404.500 \text{ AND } registered > 4875.000 \text{ AND } registered > 4875.0000 \text{ AND } registered > 4875.0000 \text{ AND }$ casual > 3095.500 AND registered <= 5219.000 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered <= 5874.000 AND casual > 2404.500 AND registered > 4875.000 AND casual > 3095.500 AND registered > 5219.000 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered > 5874.000 AND casual <= 1351.500 AND registered <= 6252.500 AND casual <= 1090.500 AND registered <= 6163.500 AND registered <= 6049.000 AND atemp <= 0.628 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered > 5874.000 AND casual <= 1351.500 AND registered <= 6252.500 AND casual <= 1090.500 AND registered \leq 6163.500 AND registered \leq 6049.000 AND atemp > 0.628 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered > 5874.000 AND casual <= 1351.500 AND registered <= 6252.500 AND casual <= 1090.500 AND registered <= 6163.500 AND registered > 6049.000 AND windspeed <= 0.172 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered > 5874.000 AND casual <= 1351.500 AND registered <= 6252.500 AND casual <= 1090.500 AND registered <= 6163.500 AND registered > 6049.000 AND windspeed > 0.172 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered > 5874.000 AND $casual \le 1351.500 \text{ AND registered} \le 6252.500 \text{ AND casual} \le 1090.500 \text{ AND}$ registered > 6163.500 AND atemp <= 0.548 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered > 5874.000 AND casual <= 1351.500 AND registered <= 6252.500 AND casual <= 1090.500 AND registered > 6163.500 AND atemp > 0.548 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered > 5874.000 AND casual <= 1351.500 AND registered <= 6252.500 AND casual > 1090.500 AND registered <= 6164.000 AND hum <= 0.699 AND hum <= 0.657 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered > 5874.000 AND casual <= 1351.500 AND registered <= 6252.500 AND casual > 1090.500 AND registered <= 6164.000 AND hum <= 0.699 AND hum > 0.657 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered > 5874.000 AND casual <= 1351.500 AND registered <= 6252.500 AND casual > 1090.500 AND registered <= 6164.000 AND hum > 0.699 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered > 5874.000 AND casual <= 1351.500 AND registered <= 6252.500 AND casual > 1090.500 AND registered > 6164.000 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered > 5874.000 AND casual <= 1351.500 AND registered > 6252.500 AND registered <= 6654.500 AND registered <= 6503.500 AND casual <= 1106.000 AND registered <= 6327.000 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered > 5874.000 AND casual <= 1351.500 AND registered > 6252.500 AND registered <= 6654.500 AND registered <= 6503.500 AND casual <= 1106.000 AND registered > 6327.000 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered > 5874.000 AND casual <= 1351.500 AND registered > 6252.500 AND registered <= 6654.500 AND registered <= 6503.500 AND casual > 1106.000 AND hum <= 0.740 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered > 5874.000 AND casual <= 1351.500 AND registered > 6252.500 AND registered <= 6654.500 AND registered <= 6503.500 AND casual > 1106.000 AND hum > 0.740 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered > 5874.000 AND casual <= 1351.500 AND registered > 6252.500 AND registered <= 6654.500 AND registered > 6503.500 AND windspeed <= 0.127 AND hum <= 0.571 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered > 5874.000 AND casual <= 1351.500 AND registered > 6252.500 AND registered \leq 6654.500 AND registered \geq 6503.500 AND windspeed \leq 0.127 AND hum

> 0.571 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered > 5874.000 AND casual <= 1351.500 AND registered > 6252.500 AND registered <= 6654.500 AND registered > 6503.500 AND windspeed > 0.127 AND temp <= 0.593 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered > 5874.000 AND casual <= 1351.500 AND registered > 6252.500 AND registered <= 6654.500 AND registered > 6503.500AND windspeed > 0.127 AND temp > 0.593 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered > 5874.000 AND casual <= 1351.500 AND registered > 6252.500 AND registered > 6654.500 AND hum <= 0.653 AND temp \leq 0.588 AND atemp \leq 0.543 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered > 5874.000 AND casual<= 1351.500 AND registered > 6252.500 AND registered > 6654.500 AND hum <= 0.653 AND temp \leq 0.588 AND atemp > 0.543 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered > 5874.000 AND casual <= 1351.500 AND registered > 6252.500 AND registered > 6654.500 AND hum <= 0.653 AND temp > 0.588 AND registered <= 6785.000 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered > 5874.000 AND casual <= 1351.500 AND registered > 6252.500 AND registered > 6654.500 AND hum <= 0.653 AND temp > 0.588 AND registered > 6785.000 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered > 5874.000 AND casual <= 1351.500 AND registered > 6252.500 AND registered > 6654.500 AND hum > 0.653 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered > 5874.000 AND casual > 1351.500 AND casual \leq 2016.000 AND registered \leq 6516.000 AND registered \leq 6045.000 AND windspeed <= 0.125 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered > 5874.000 AND casual > 1351.500 AND casual \leq 2016.000 AND registered \leq 6516.000 AND registered \leq 6045.000 AND windspeed > 0.125 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered > 5874.000 AND casual > 1351.500 AND casual <= 2016.000 AND registered <= 6516.000 AND registered > 6045.000 AND registered <= 6183.000 AND registered <= 6110.000 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered > 5874.000 AND casual > 1351.500 AND casual <= 2016.000 AND registered <= 6516.000 AND registered > 6045.000 AND registered <= 6183.000 AND registered > 6110.000 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered > 5874.000 AND casual > 1351.500 AND casual <= 2016.000 AND registered <= 6516.000 AND registered > 6045.000 AND registered > 6183.000 AND casual <= 1425.500 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered > 5874.000 AND casual > 1351.500 AND casual \leq 2016.000 AND registered \leq 6516.000 AND registered \geq 6045.000 AND registered > 6183.000 AND casual > 1425.500 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered > 5874.000 AND casual > 1351.500 AND casual <= 2016.000 AND registered > 6516.000 AND casual <= 1381.000 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered > 5874.000 AND casual > 1351.500 AND casual <= 2016.000 AND registered > 6516.000 AND casual > 1381.000 AND windspeed <= 0.136 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered > 5874.000 AND casual > 1351.500 AND casual <= 2016.000

AND registered > 6516.000 AND casual > 1381.000 AND windspeed > 0.136 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered > 5874.000 AND casual > 1351.500 AND casual > 2016.000 AND atemp <= 0.590 AND class 0', 'registered > 3173.000 AND registered > 4280.500 AND casual > 913.000 AND registered > 5874.000 AND casual > 1351.500 AND casual > 2016.000 AND atemp > 0.590 AND class 0']

Run Time Performance = 0.13271284103393555 seconds