In [131... import numpy as np import pandas as pd import matplotlib.pyplot as plt %matplotlib inline import seaborn as sns import warnings warnings.filterwarnings("ignore")

In [133... df\_air = pd.read\_csv("air.csv") df\_air.head()

Out[133]:

:		Unnamed: 0	id	Gender	Customer Type	Age	Type of Travel	Class	Flight Distance	Inflight wifi service	Departure/Arrival time convenient	•••	Inflight entertainment	On- board service	Leg room service	B h
	0	0	70172	Male	Loyal Customer	13	Personal Travel	Eco Plus	460	3	4		5	4	3	
	1	1	5047	Male	disloyal Customer	25	Business travel	Business	235	3	2		1	1	5	
	2	2	110028	Female	Loyal Customer	26	Business travel	Business	1142	2	2		5	4	3	
	3	3	24026	Female	Loyal Customer	25	Business travel	Business	562	2	5		2	2	5	
	4	4	119299	Male	Loyal Customer	61	Business travel	Business	214	3	3		3	3	4	

5 rows × 25 columns

In [135... df\_air.info()

<class 'pandas.core.frame.DataFrame'> RangeIndex: 103904 entries, 0 to 103903 Data columns (total 25 columns):

Column Non-Null Count Dtype 0 Unnamed: 0 103904 non-null int64 1 id 103904 non-null int64 2 Gender 103904 non-null object 3 Customer Type 103904 non-null object 103904 non-null int64 Age 5 Type of Travel 103904 non-null object Class 103904 non-null object Flight Distance 103904 non-null int64 Inflight wifi service 103904 non-null int64 9 Departure/Arrival time convenient 103904 non-null int64 10 Ease of Online booking 103904 non-null int64 11 Gate location 103904 non-null int64 12 Food and drink 103904 non-null int64 13 Online boarding 103904 non-null int64 103904 non-null int64 14 Seat comfort 15 Inflight entertainment 103904 non-null int64 16 On-board service 103904 non-null int64 17 Leg room service 103904 non-null int64 18 Baggage handling 103904 non-null int64 19 Checkin service 103904 non-null int64 20 Inflight service 103904 non-null int64 21 Cleanliness 103904 non-null int64 22 Departure Delay in Minutes 103904 non-null int64 103594 non-null float64 23 Arrival Delay in Minutes 24 satisfaction 103904 non-null object

dtypes: float64(1), int64(19), object(5)

memory usage: 19.8+ MB

In [137... df\_air.describe()

Out[137]:

	Unnamed: 0	id	Age	Flight Distance	Inflight wifi service	Departure/Arrival time convenient	Ease of Online booking	Gate location	Foo
count	103904.000000	103904.000000	103904.000000	103904.000000	103904.000000	103904.000000	103904.000000	103904.000000	1039
mean	51951.500000	64924.210502	39.379706	1189.448375	2.729683	3.060296	2.756901	2.976883	
std	29994.645522	37463.812252	15.114964	997.147281	1.327829	1.525075	1.398929	1.277621	
min	0.000000	1.000000	7.000000	31.000000	0.000000	0.000000	0.000000	0.000000	
25%	25975.750000	32533.750000	27.000000	414.000000	2.000000	2.000000	2.000000	2.000000	
50%	51951.500000	64856.500000	40.000000	843.000000	3.000000	3.000000	3.000000	3.000000	
75%	77927.250000	97368.250000	51.000000	1743.000000	4.000000	4.000000	4.000000	4.000000	
max	103903.000000	129880.000000	85.000000	4983.000000	5.000000	5.000000	5.000000	5.000000	

In [139... df\_air.isnull().sum()

Unnamed: 0 Out[139]: Gender Customer Type Age Type of Travel 0 Class Flight Distance Inflight wifi service Departure/Arrival time convenient Ease of Online booking Gate location Food and drink Online boarding Seat comfort Inflight entertainment On-board service Leg room service Baggage handling Checkin service Inflight service 0 Cleanliness 0 Departure Delay in Minutes 0 Arrival Delay in Minutes 310 satisfaction 0 dtype: int64

In [141... df\_air.head()

Out[141]:

:	Unname	d: 0	id	Gender	Customer Type	Age	Type of Travel	Class	Flight Distance	Inflight wifi service	Departure/Arrival time convenient	•••	Inflight entertainment	On- board service	Leg room service	h
(	)	0	70172	Male	Loyal Customer	13	Personal Travel	Eco Plus	460	3	4		5	4	3	
	I	1	5047	Male	disloyal Customer	25	Business travel	Business	235	3	2		1	1	5	
:	2	2	110028	Female	Loyal Customer	26	Business travel	Business	1142	2	2		5	4	3	
;	3	3	24026	Female	Loyal Customer	25	Business travel	Business	562	2	5		2	2	5	
4	ŀ	4	119299	Male	Loyal Customer	61	Business travel	Business	214	3	3		3	3	4	

5 rows × 25 columns

In [143... df\_air.dropna().head()

Out[143]

]:	Unname	ed: 0	id	Gender	Customer Type	Age	Type of Travel	Class	Flight Distance	Inflight wifi service	Departure/Arrival time convenient	 Inflight entertainment	On- board service	Leg room service	B h
	)	0	70172	Male	Loyal Customer	13	Personal Travel	Eco Plus	460	3	4	 5	4	3	
	1	1	5047	Male	disloyal Customer	25	Business travel	Business	235	3	2	 1	1	5	
	2	2	110028	Female	Loyal Customer	26	Business travel	Business	1142	2	2	 5	4	3	
;	3	3	24026	Female	Loyal Customer	25	Business travel	Business	562	2	5	 2	2	5	
,	1	4	119299	Male	Loyal Customer	61	Business travel	Business	214	3	3	 3	3	4	

5 rows × 25 columns

In [145... df\_air["Arrival Delay in Minutes"] = df\_air["Arrival Delay in Minutes"].fillna(df\_air["Arrival Delay in Minutes"].mear

In [147... df\_air.isnull().sum()

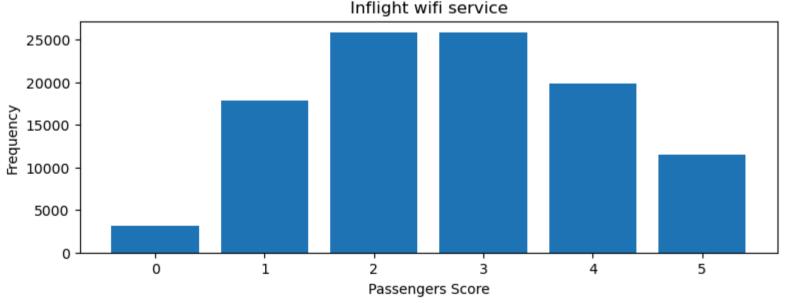
```
Gender
           Customer Type
           Type of Travel
           Class
           Flight Distance
           Inflight wifi service
           Departure/Arrival time convenient
           Ease of Online booking
           Gate location
           Food and drink
           Online boarding
           Seat comfort
           Inflight entertainment
           On-board service
           Leg room service
           Baggage handling
                                                    0
           Checkin service
                                                    0
           Inflight service
                                                    0
           Cleanliness
                                                    0
           Departure Delay in Minutes
                                                    0
           Arrival Delay in Minutes
                                                    0
           satisfaction
           dtype: int64
In [149... df = df_air.drop(columns = ["id"], inplace = True, axis = 1)
In [151... df_air.head()
                                                                                                                                       Leg
                                                                                                   Ease of
Out[151]:
                                                                          Inflight
                                                                                                                               On-
                                Customer
                                                                                  Departure/Arrival
              Unnamed:
                                                Type of
                                                                   Flight
                                                                                                                    Inflight
                                                                                                    Online ...
                        Gender
                                                           Class
                                                                             wifi
                                                                                                                             board
                                                                                                                                      room
                                                                 Distance
                                    Type
                                                 Travel
                                                                                   time convenient
                                                                                                              entertainment
                                                                                                                            service service
                                                                                                  booking
                                                                          service
                                     Loyal
                                                Personal
           0
                                            13
                                                        Eco Plus
                                                                               3
                                                                                                                         5
                      0
                                                                     460
                                                                                                4
                                                                                                        3
                                                                                                                                 4
                                                                                                                                         3
                           Male
                                 Customer
                                                  Travel
                                   disloyal
                                               Business
           1
                      1
                           Male
                                                        Business
                                                                     235
                                                                               3
                                                                                                2
                                                                                                                          1
                                                                                                                                 1
                                                                                                                                         5
                                 Customer
                                                  travel
                                    Loyal
                                               Business
           2
                                            26
                                                                               2
                                                                                                2
                                                                                                        2 ...
                                                                                                                         5
                                                                     1142
                                                                                                                                 4
                                                                                                                                         3
                      2
                         Female
                                                        Business
                                 Customer
                                                  travel
                                     Loyal
                                               Business
                                                                                                        5 ...
           3
                                                        Business
                                                                     562
                                                                               2
                                                                                                5
                                                                                                                         2
                                                                                                                                 2
                                                                                                                                         5
                         Female
                                 Customer
                                                  travel
                                    Loyal
                                               Business
           4
                                                        Business
                                                                     214
                                                                               3
                                                                                                3
                                                                                                        3 ...
                                                                                                                         3
                                                                                                                                 3
                                                                                                                                         4
                      4
                           Male
                                 Customer
                                                  travel
           5 rows × 24 columns
         df_air.isnull().sum()
In [153...
                                                    0
           Unnamed: 0
Out[153]:
           Gender
                                                    0
           Customer Type
                                                    0
           Age
           Type of Travel
           Class
           Flight Distance
           Inflight wifi service
                                                    0
           Departure/Arrival time convenient
           Ease of Online booking
           Gate location
           Food and drink
                                                    0
           Online boarding
                                                    0
           Seat comfort
                                                    0
           Inflight entertainment
                                                    0
           On-board service
                                                    0
           Leg room service
                                                    0
           Baggage handling
                                                    0
           Checkin service
           Inflight service
           Cleanliness
           Departure Delay in Minutes
           Arrival Delay in Minutes
           satisfaction
           dtype: int64
In [155... var = df_air["Inflight wifi service"].value_counts()
          plt.figure(figsize=(9, 3))
          var.plot(kind='bar')
          plt.show()
```

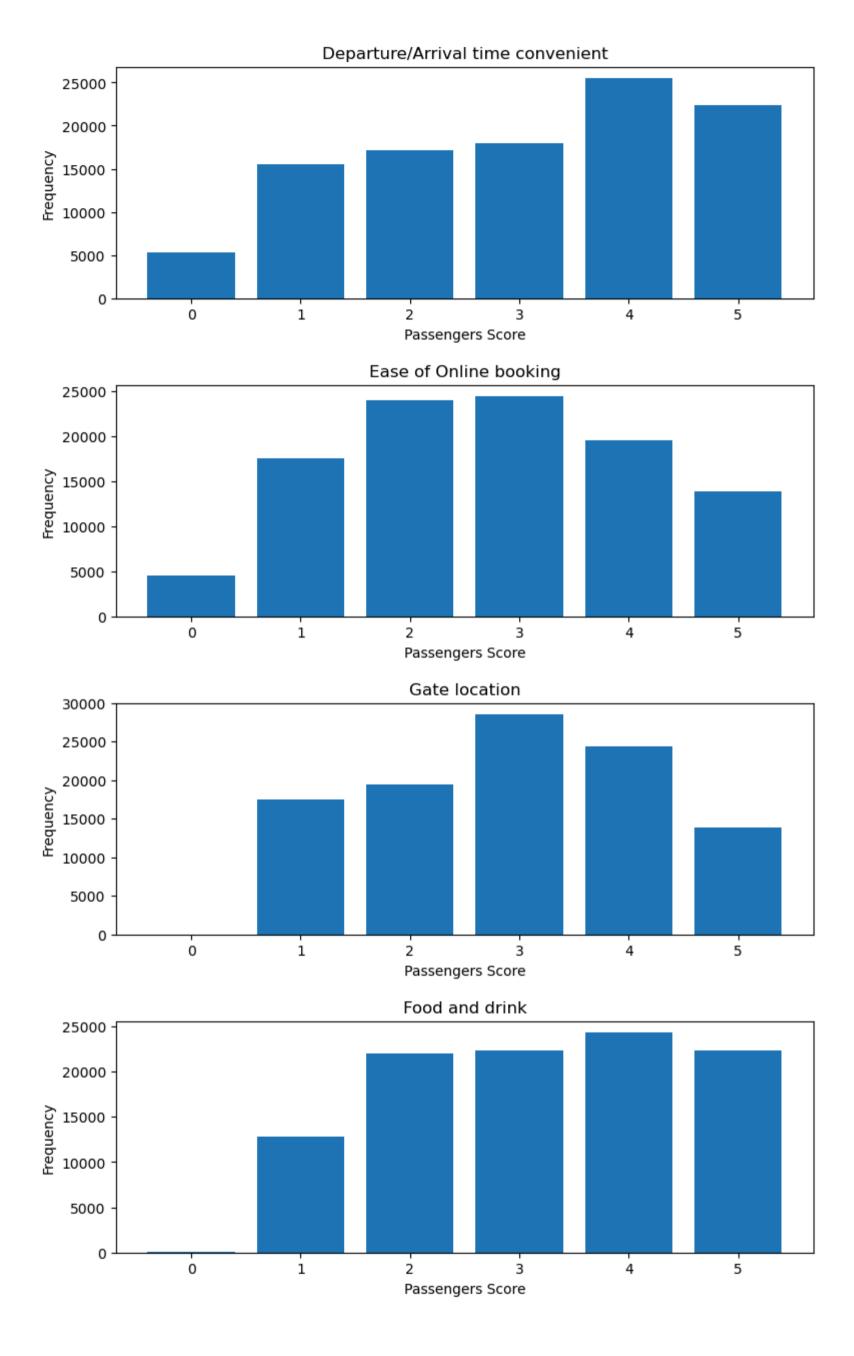
Unnamed: 0

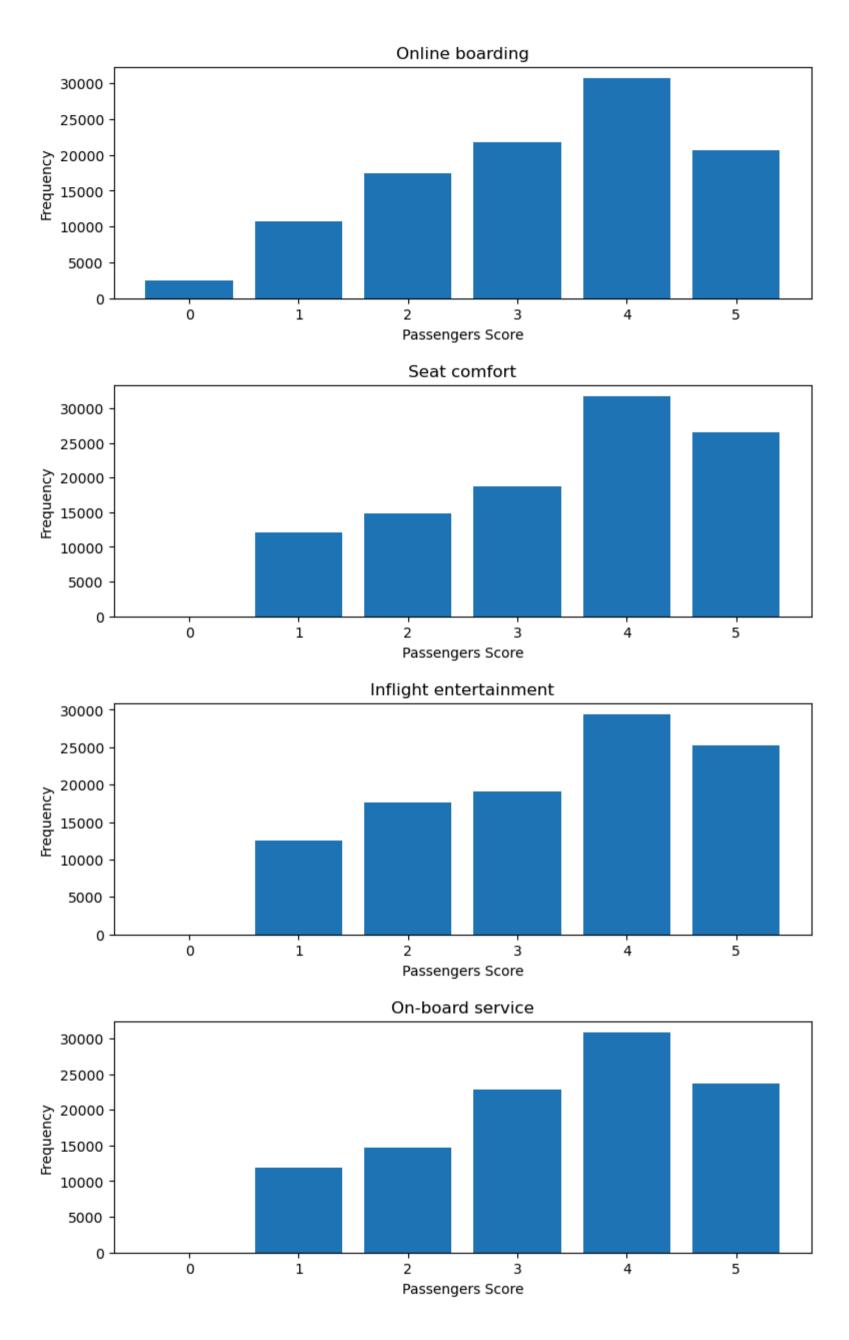
Out[147]:

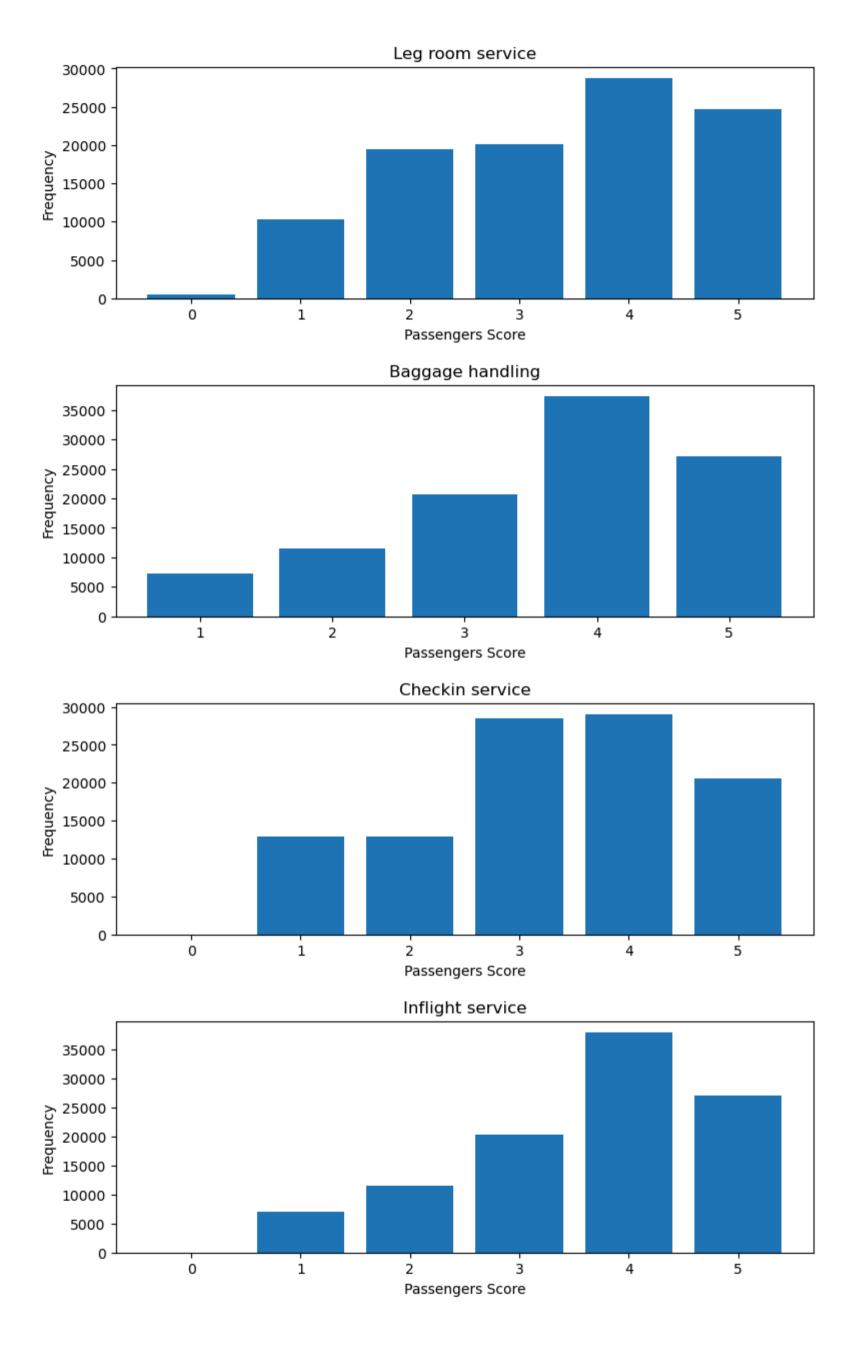
0

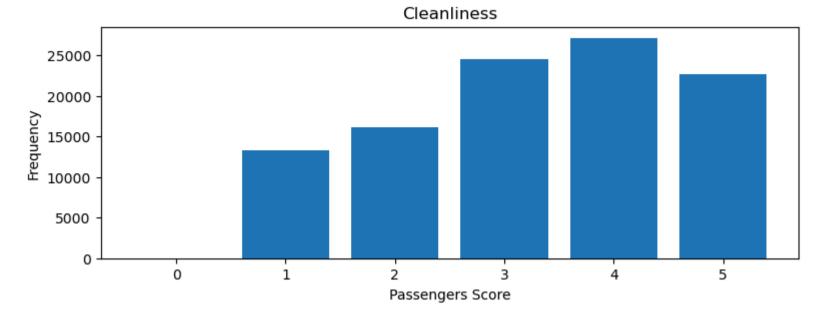
```
In [157... df_air.columns.to_list()
           ['Unnamed: 0',
Out[157]:
            'Gender',
            'Customer Type',
            'Age',
            'Type of Travel',
            'Class',
            'Flight Distance',
            'Inflight wifi service',
            'Departure/Arrival time convenient',
            'Ease of Online booking',
            'Gate location',
            'Food and drink',
            'Online boarding',
            'Seat comfort',
            'Inflight entertainment',
            'On-board service',
            'Leg room service',
            'Baggage handling',
            'Checkin service',
            'Inflight service',
            'Cleanliness',
            'Departure Delay in Minutes',
            'Arrival Delay in Minutes',
            'satisfaction']
 In []:
In [160... def bar_plot(variable):
              var = df_air[variable]
              var_Value = var.value_counts()
              plt.figure(figsize = (9, 3))
              plt.bar(var_Value.index, var_Value.values)
plt.xlabel("Passengers Score")
              plt.ylabel("Frequency")
              plt.title(variable)
              plt.show()
In [162... category1 = ['Inflight wifi service', 'Departure/Arrival time convenient', 'Ease of Online booking',
                       'Gate location', 'Food and drink', 'Online boarding', 'Seat comfort', 'Inflight entertainment',
                       'On-board service', 'Leg room service', 'Baggage handling', 'Checkin service', 'Inflight service', 'Cleanliness
          for c in category1:
              bar_plot(c)
```





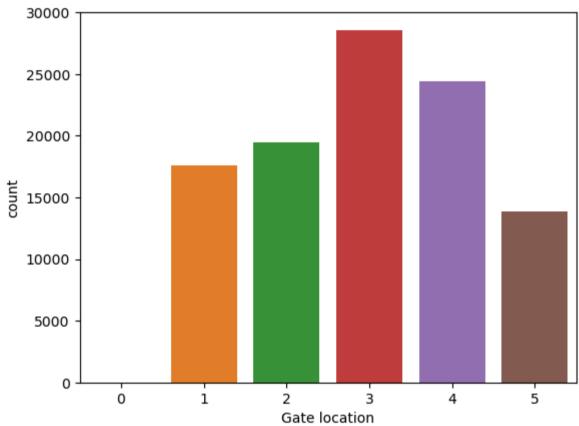






```
In [226... sns.countplot(data = df_air, x = "Gate location")#, color = "blue")
```

Out[226]: <Axes: xlabel='Gate location', ylabel='count'>



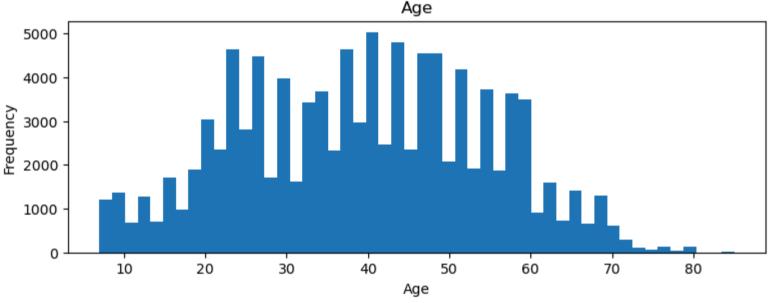
```
In [230... category = ['Gender', 'Customer Type', 'Type of Travel', 'Class', 'satisfaction']
          for c in category:
              print(df_air[c].value_counts())
              print("....")
              print()
          Female
                    52727
         Male
                    51177
         Name: Gender, dtype: int64
         Loyal Customer
                                84923
          disloyal Customer
                                18981
         Name: Customer Type, dtype: int64
          . . . . . . . . . . . . . . . .
          Business travel
                              71655
          Personal Travel
                              32249
         Name: Type of Travel, dtype: int64
                      49665
          Business
                      46745
          Eco
          Eco Plus
                       7494
         Name: Class, dtype: int64
          . . . . . . . . . . . . . . . . . . .
          0
               58879
         1
              45025
         Name: satisfaction, dtype: int64
```

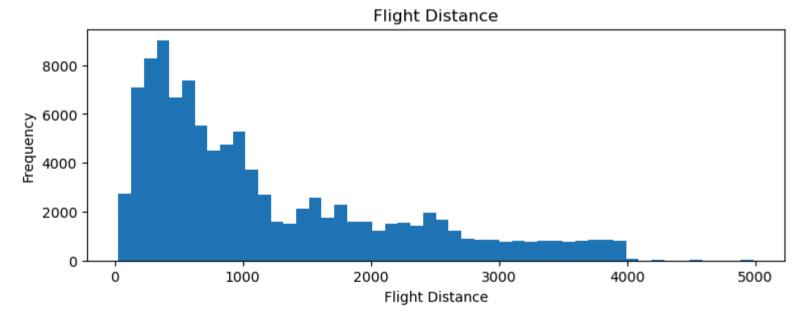
```
'Customer Type',
            'Age',
            'Type of Travel',
            'Class',
            'Flight Distance',
            'Inflight wifi service',
            'Departure/Arrival time convenient',
            'Ease of Online booking',
            'Gate location',
            'Food and drink',
            'Online boarding',
            'Seat comfort',
            'Inflight entertainment',
            'On-board service',
            'Leg room service',
            'Baggage handling',
            'Checkin service',
            'Inflight service',
            'Cleanliness',
            'Departure Delay in Minutes',
            'Arrival Delay in Minutes',
            'satisfaction']
In [174... def plot_hist(variable):
              plt.figure(figsize = (9, 3))
              plt.hist(df_air[variable], bins = 50)
              plt.xlabel(variable)
              plt.ylabel("Frequency")
              plt.title(vaAriable)
              plt.show()
In [176... numericVar = ["Age", "Flight Distance", "Departure Delay in Minutes", "Arrival Delay in Minutes"]
          for n in numericVar:
              plot_hist(n)
```

['Unnamed: 0',

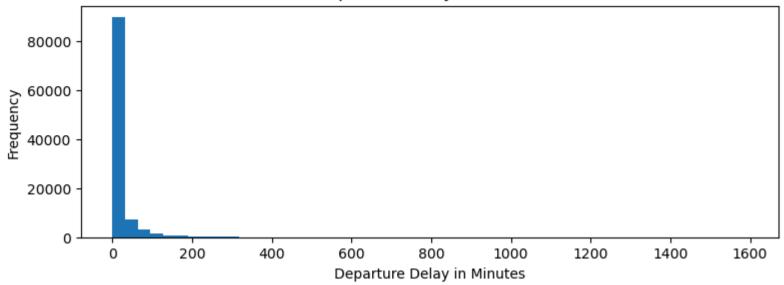
'Gender',

Out[172]:

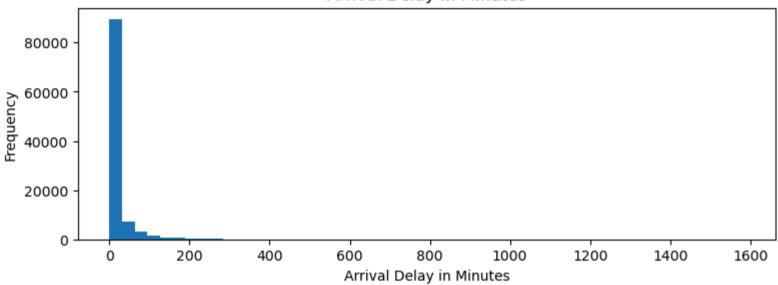




## Departure Delay in Minutes



## Arrival Delay in Minutes



In [178... df\_air.head()

Out[178]

:	Unname	d: 0	Gender	Customer Type	Age	Type of Travel	Class	Flight Distance	Inflight wifi service	Departure/Arrival time convenient	Ease of Online booking	 Inflight entertainment	On- board service	Leg room service
(	)	0	Male	Loyal Customer	13	Personal Travel	Eco Plus	460	3	4	3	 5	4	3
	1	1	Male	disloyal Customer	25	Business travel	Business	235	3	2	3	 1	1	5
:	2	2	Female	Loyal Customer	26	Business travel	Business	1142	2	2	2	 5	4	3
;	3	3	Female	Loyal Customer	25	Business travel	Business	562	2	5	5	 2	2	5
4	1	4	Male	Loyal Customer	61	Business travel	Business	214	3	3	3	 3	3	4

5 rows × 24 columns

In [180... df\_air["satisfaction"].replace({"satisfied": 1, "neutral or dissatisfied": 0}, inplace = True)

df\_air.head()

Out[180]:		Unnamed: 0	Gender	Customer Type	Age	Type of Travel		Flight Distance	Inflight wifi service	Departure/Arrival time convenient	Ease of Online booking	•••	Inflight entertainment	On- board service	Leg room service
	0	0	Male	Loyal Customer	13	Personal Travel	Eco Plus	460	3	4	3		5	4	3
	1	1	Male	disloyal Customer	25	Business travel	Business	235	3	2	3		1	1	5
	2	2	Female	Loyal Customer	26	Business travel	Business	1142	2	2	2		5	4	3
	3	3	Female	Loyal Customer	25	Business travel	Business	562	2	5	5		2	2	5
	4	4	Male	Loyal Customer	61	Business travel	Business	214	3	3	3		3	3	4

5 rows × 24 columns

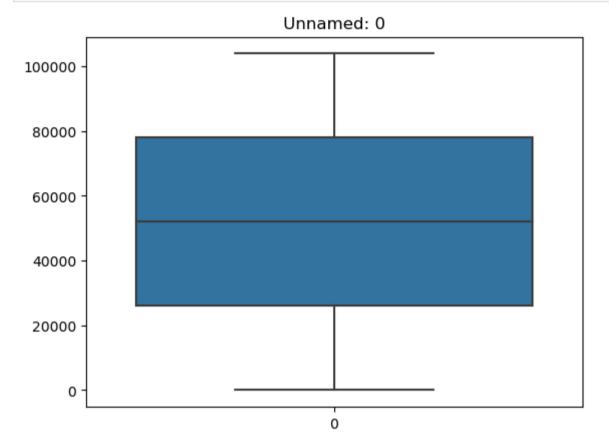
df\_air[["Gender", "satisfaction"]].groupby(["Gender"], as\_index = False).mean().sort\_values(by = "satisfaction", ascer

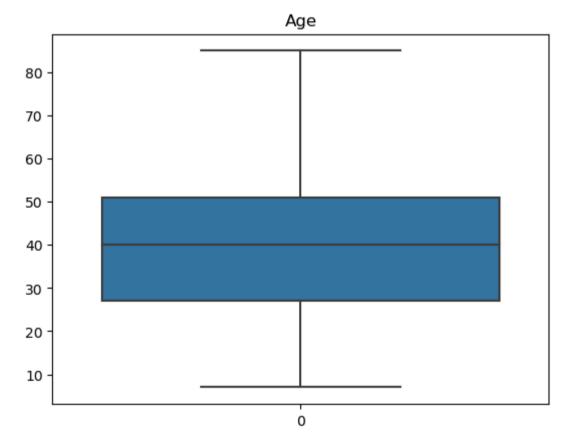
```
0.439475
                Male
                         0.427371
           0 Female
In [184... df_sat = df_air[["Age", "satisfaction"]].groupby(["Age"], as_index = False).mean().sort_values(by = "satisfaction", as
          df_sat.head()
               Age satisfaction
Out[184]:
                      0.607899
           34
                41
           39
                46
                       0.599819
                      0.597249
                51
           44
           50
                57
                       0.590102
                52
                      0.586207
           45
In [186... df_sat[50:]
               Age satisfaction
Out[186]:
           12
                19
                      0.245575
           10
                17
                       0.244919
                      0.244681
           64
                71
            11
                18
                      0.244376
           57
                64
                       0.214485
           55
                62
                       0.212337
            9
                16
                      0.204672
           73
                80
                       0.192308
                       0.188513
           59
                66
                       0.187332
           58
                65
           70
                77
                      0.183908
            8
                15
                       0.183374
           74
                85
                       0.176471
           61
                68
                       0.174383
                12
                       0.166929
            5
            4
                 11
                       0.160767
           60
                67
                       0.156061
                 13
            6
                       0.154818
                69
           62
                       0.145511
            7
                14
                       0.144272
            2
                 9
                       0.137283
           63
                70
                       0.136143
                10
                       0.131772
            3
                 8
                       0.107813
            1
            0
                 7
                      0.099644
         df_air[["Cleanliness", "satisfaction"]].groupby(["Cleanliness"], as_index = False).mean().sort_values(by = "satisfaction")
In [188...
              Cleanliness satisfaction
Out[188]:
           5
                            0.608797
           4
                            0.535340
           3
                      3
                            0.431879
           2
                            0.212993
           1
                            0.196201
           0
                       0
                            0.000000
In [190... df_air[["Inflight wifi service", "satisfaction"]].groupby(["Inflight wifi service"], as_index = False).mean().sort_val
```

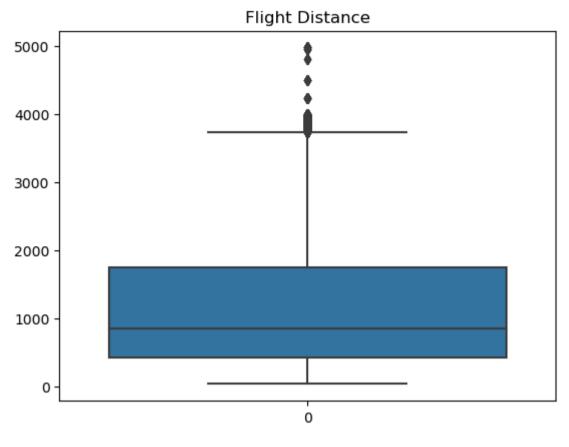
Gender satisfaction

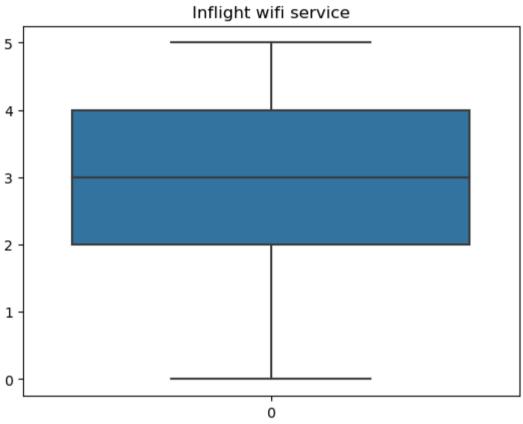
Out[182]:

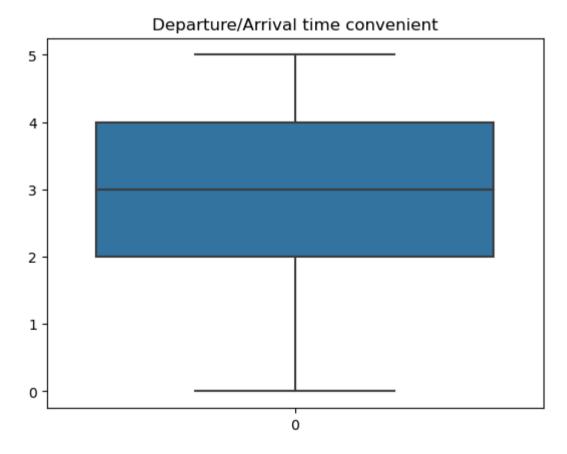
## Out[190]: Inflight wifi service satisfaction 0.997422 0 5 5 0.990758 0.598969 4 4 0.325448 3 3 0.250580 2 2 0.248664

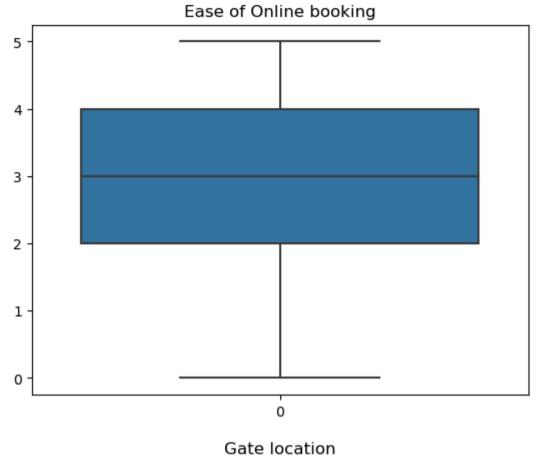


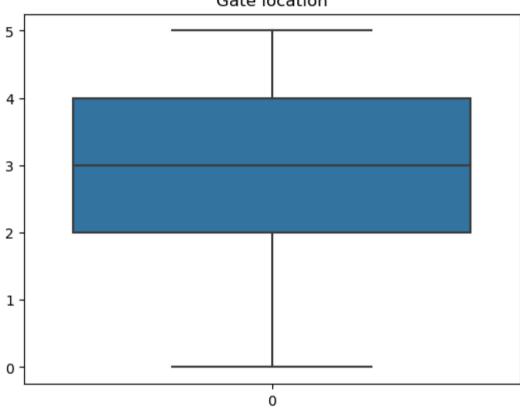


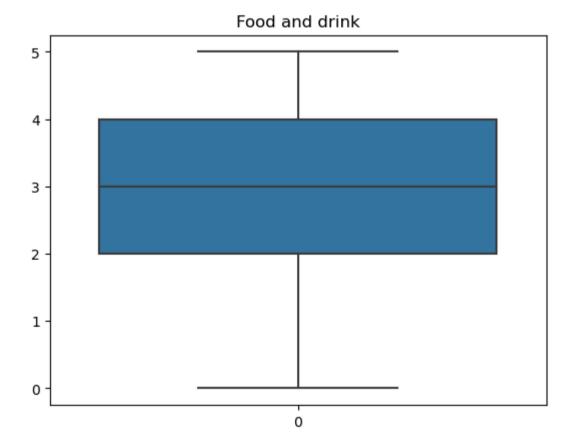


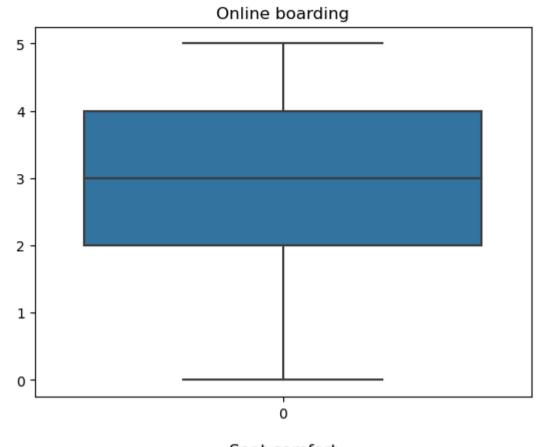


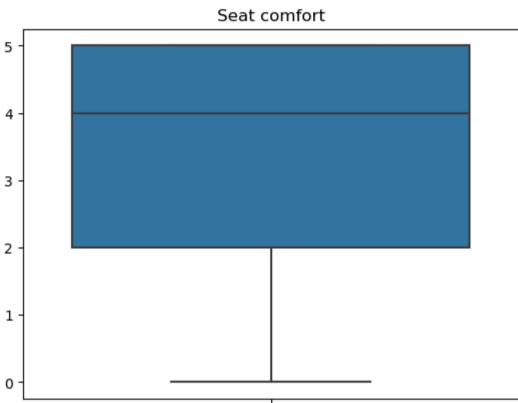


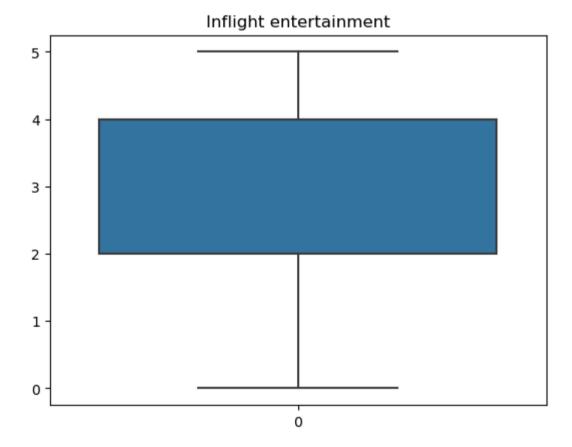


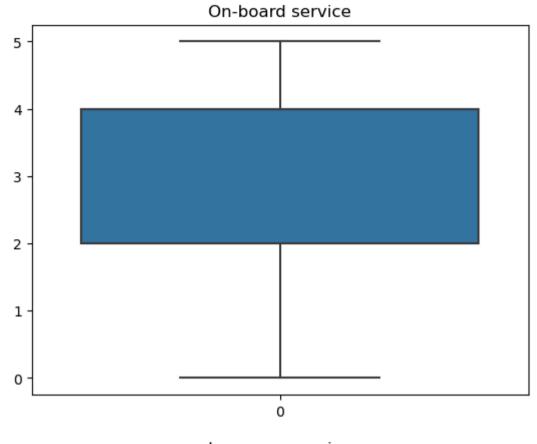


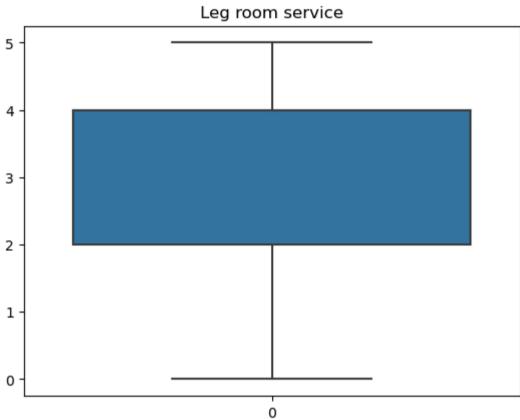


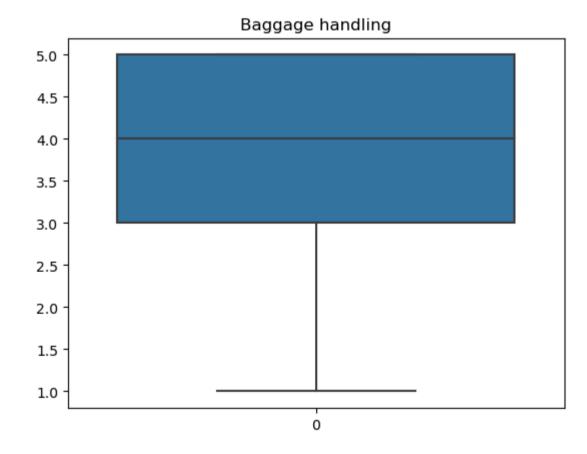


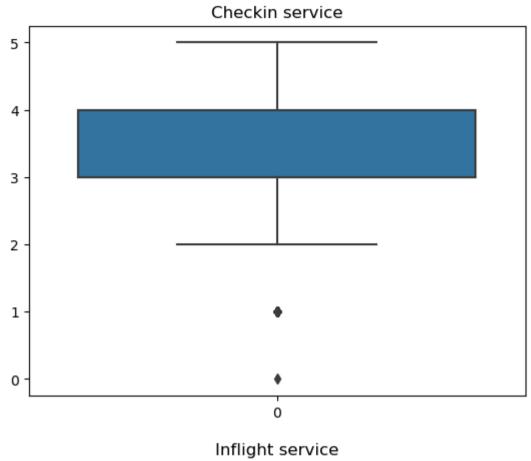


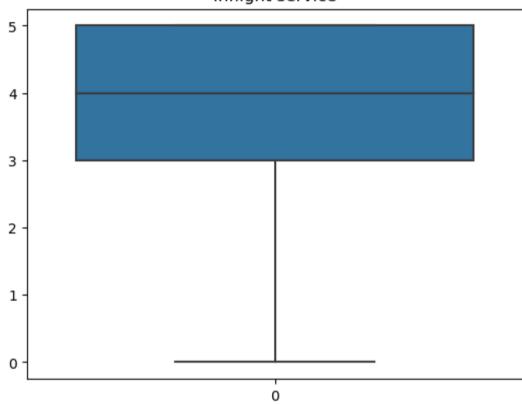


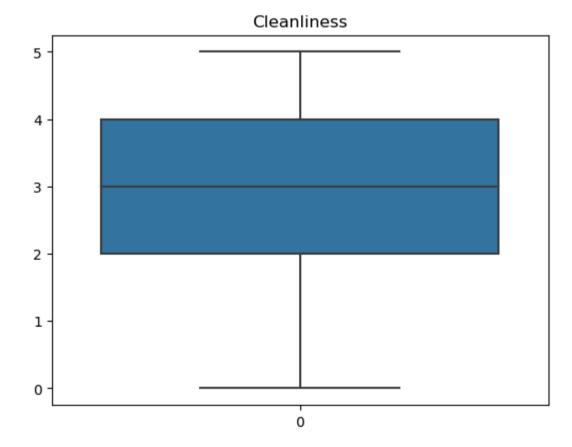




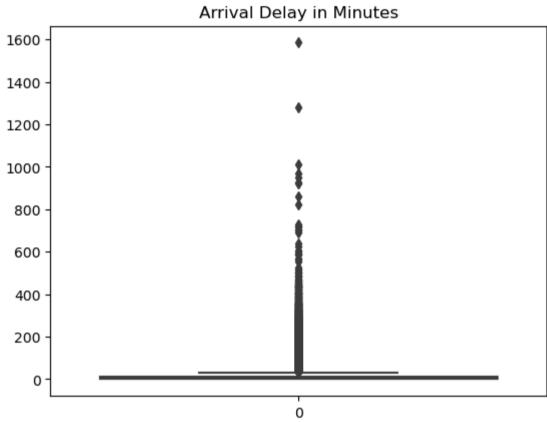


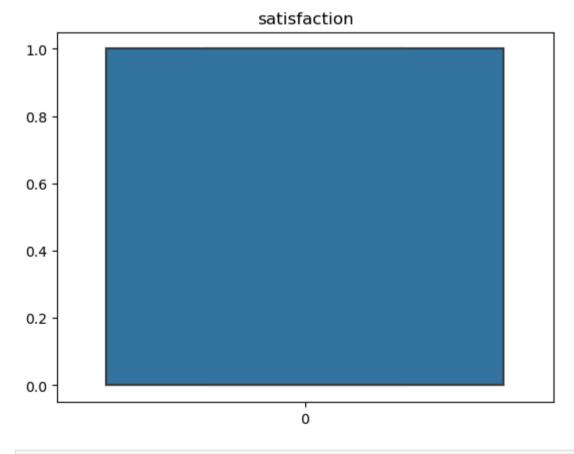












```
['Unnamed: 0',
Out[195]:
               'Gender',
               'Customer Type',
               'Age',
               'Type of Travel',
               'Class',
               'Flight Distance',
               'Inflight wifi service',
               'Departure/Arrival time convenient',
               'Ease of Online booking',
               'Gate location',
               'Food and drink'
               'Online boarding',
               'Seat comfort',
               'Inflight entertainment',
               'On-board service',
               'Leg room service',
               'Baggage handling',
               'Checkin service',
               'Inflight service',
               'Cleanliness',
               'Departure Delay in Minutes',
               'Arrival Delay in Minutes',
               'satisfaction']
In [196... corr = df_air[['Age', 'Flight Distance', 'Inflight wifi service',
                      'Departure/Arrival time convenient', 'Ease of Online booking',
                      'Gate location','Food and drink','Online boarding','Seat comfort',
                                 'Inflight entertainment', 'On-board service', 'Leg room service',
                                 'Baggage handling', 'Checkin service', 'Inflight service', 'Cleanliness',
                                 'Departure Delay in Minutes','Arrival Delay in Minutes','satisfaction']].corr()
             plt.figure(figsize = (15, 8))
             sns.heatmap(corr, annot = True, cmap = "coolwarm")
             plt.show()
                                                                                                                                                                  1.0
                                                0.099 0.018 0.038 0.025-0.0013 0.023 <mark>0.21</mark> 0.16 0.076 0.058 0.041 -0.048 0.035 -0.049 0.054 -0.01 -0.012 0.14
                                                                                       Flight Distance - 0.099
                                                     0.0071 -0.02 0.066 0.0048 0.057
                                                                                  0.21
                         Inflight wifi service - 0.018 0.0071
                                                                                   0.34 0.72 0.34
                                                                 0.44 0.044 0.0049 0.07 0.011-0.0049 0.069 0.012 0.072 0.093 0.073 0.014 0.001-0.000860.052
             Departure/Arrival time convenient - 0.038 -0.02
                                                     0.34
                                                                                                                                                                  - 0.8
                                                                       0.46 0.032 0.4 0.03 0.047 0.039 0.11 0.039 0.011 0.035 0.016 0.0064 0.008 0.17
                      Ease of Online booking - 0.025 0.066
                                                            0.44
                                                      0.72
                                                            0.44 0.46
                                                                            -0.00120.00170.00370.0035-0.028-0.00590.0023-0.035 0.0017-0.00380.00550.00510.0006
                             Gate location -0.00130.0048 0.34
                                                          0.0049 0.032 -0.0012
                            Food and drink - 0.023 0.057
                                                                                   - 0.6
                                                                                                                                0.33 -0.019 -0.022 0.5
                            Online boarding - 0.21 0.21 0.46
                                                                  0.4 0.0017 0.23
                                                                                        0.42 0.29
                                                                                                                          0.075
                                                                                                                      0.2
                              Seat comfort - 0.16 0.16 0.12
                                                           0.011 0.03 0.0037 0.57 0.42
                                                                                              0.61
                                                                                                                     0.19 0.069
                                                                                                                                0.68 -0.028 -0.03 0.35
                       Inflight entertainment - 0.076 0.13 0.21 -0.0049 0.047 0.0035 0.62 0.29 0.61
                                                                                                   0.42
                                                                                                          0.3 0.38
                                                                                                                                 0.69 -0.027 -0.031
                                                                                                                           0.4
                          On-board service - 0.058 0.11 0.12 0.069 0.039 -0.028 0.059 0.16
                                                                                                                                 0.12 -0.032 -0.035 0.32
                                                                                              0.42
                                                                                                          0.36 0.52 0.24
                                                                                                                           0.55
                                                                                                                                                                  - 0.4
                          Leg room service - 0.041 0.13 0.16 0.012 0.11 -0.0059 0.032 0.12 0.11
                                                                                               0.3
                                                                                                    0.36
                                                                                                                0.37
                                                                                                                                0.096 0.014 0.012 0.31
                                                                                                                           0.37
                          Baggage handling --0.048 0.063 0.12 0.072 0.039 0.0023 0.035 0.083 0.075
                                                                                                         0.37
                                                                                                                     0.23
                                                                                                                                0.096 -0.00560.0085 0.25
                                                                                              0.38
                                                                                                    0.52
                                                                                                                           0.63
                            Checkin service - 0.035 0.073 0.043 0.093 0.011 -0.035 0.087 0.2 0.19
                                                                                                    0.24
                                                                                                          0.15 0.23
                                                                                                                           0.24
                                                                                                                                0.18 -0.018 -0.02 0.24
                                                                                                                                                                  - 0.2
                            Inflight service --0.049 0.058 0.11 0.073 0.035 0.0017 0.034 0.075 0.069
                                                                                              0.4
                                                                                                    0.55 0.37 0.63 0.24
                                                                                                                                0.089 -0.055 -0.059 0.24
                               Cleanliness - 0.054 0.093 0.13 0.014 0.016 -0.0038 0.66 0.33 0.68 0.69 0.12 0.096 0.096 0.18 0.089
                  Departure Delay in Minutes - -0.01 0.0022-0.017 0.001-0.00640.0055 -0.03 -0.019 -0.028 -0.027 -0.032 0.014 -0.0056-0.018 -0.055 -0.014
                     Arrival Delay in Minutes --0.012-0.0024-0.0190.000860.008 0.0051 -0.032 -0.032 -0.033 -0.031 -0.035 0.012 -0.0085 -0.02 -0.059 -0.016 0.96
                                                                                                                                                                  0.0
                                                     0.28 -0.052 0.17 0.00068 0.21
                                                                                                         0.31 0.25 0.24
                               satisfaction -
                                                 0.3
                                                                                   0.5
                                                                                        0.35
                                                                                               0.4
                                                                                                    0.32
                                                                                                                           0.24 0.31
                                                                                                                                       -0.05 -0.057
                                                       Inflight wifi service
                                                                  of Online booking
                                                                                                                Baggage handling
                                                                                                                      Checkin service
                                                                                                                                             Arrival Delay in Minutes
                                            Age
                                                 Flight Distance
                                                                        Gate location
                                                                              Food and drink
                                                                                    Online boarding
                                                                                         Seat comfort
                                                                                                     On-board service
                                                                                                           Leg room service
                                                                                                                                       Departure Delay in Minutes
                                                                                                                                                   satisfaction
                                                             arture/Arrival time convenient
                                                                                               Inflight entertainment
                                                                                                                                  Cleanliness
```

```
In [234... personal = df_air[df_air["Type of Travel"] == "Personal Travel"]
personal.head()
```

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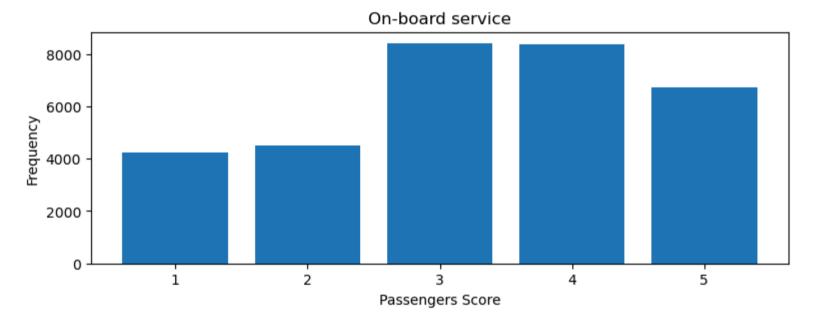
:		Unnamed: 0	Gender	Customer Type	Age	Type of Travel	Class	Flight Distance	Inflight wifi service	Departure/Arrival time convenient	Ease of Online booking	Inflight entertainment	On- board service	Leg room service	Ba
	0	0	Male	Loyal Customer	13	Personal Travel	Eco Plus	460	3	4	3	 5	4	3	
	5	5	Female	Loyal Customer	26	Personal Travel	Eco	1180	3	4	2	 1	3	4	
	6	6	Male	Loyal Customer	47	Personal Travel	Eco	1276	2	4	2	 2	3	3	
	11	11	Female	Loyal Customer	12	Personal Travel	Eco Plus	308	2	4	2	 1	1	2	
	13	13	Male	Loyal Customer	33	Personal Travel	Eco	946	4	2	4	 4	4	5	

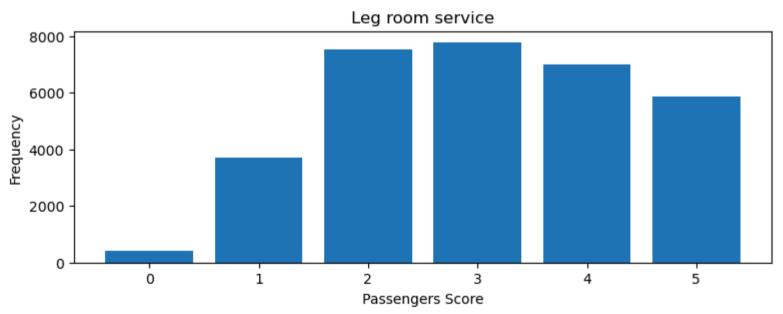
5 rows × 24 columns

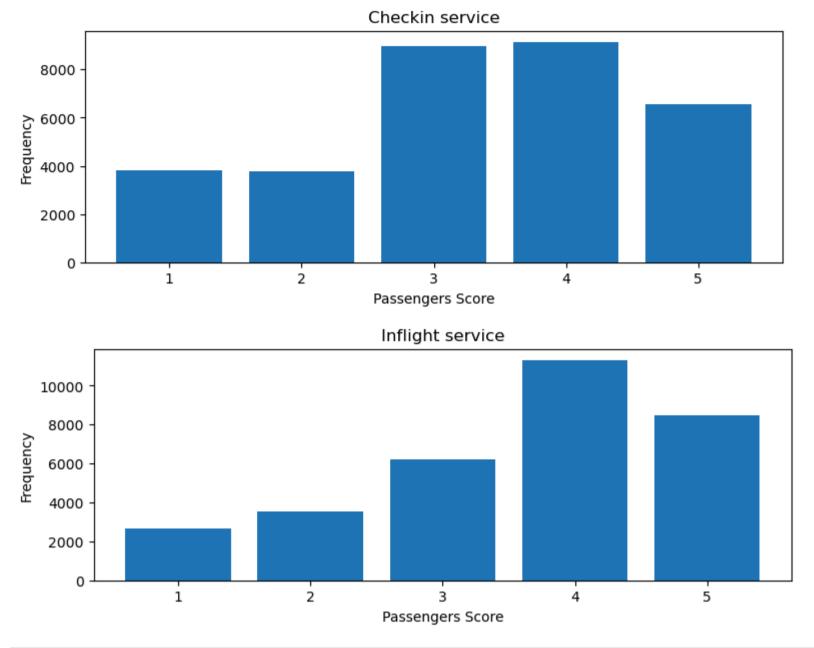
```
In [ ]:
```

```
In [203... def service_plot(variable):
    var = personal[variable]
    var_Value = var.value_counts()
    plt.figure(figsize = (9, 3))
    plt.bar(var_Value.index, var_Value.values)
    plt.xlabel("Passengers Score")
    plt.ylabel("Frequency")
    plt.title(variable)
    plt.show()
```

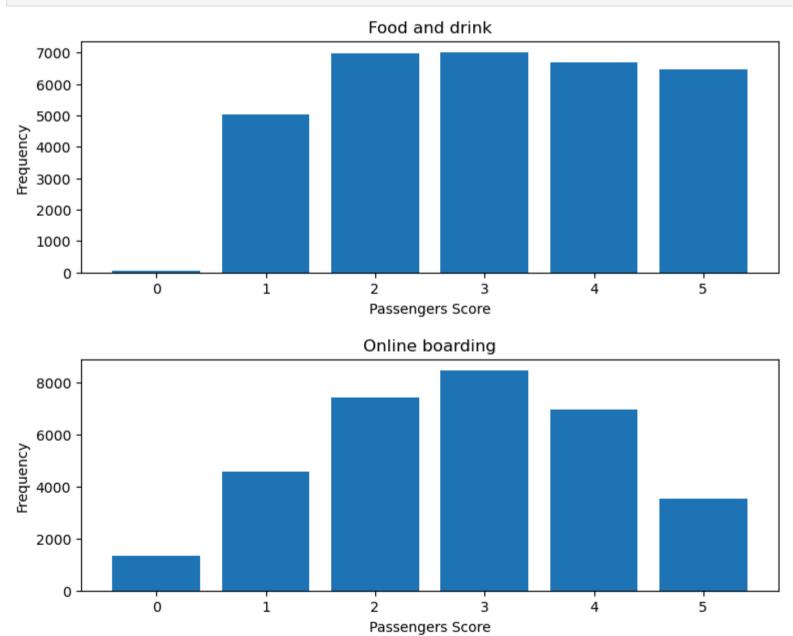
In [205... service = ["On-board service", "Leg room service", "Checkin service", "Inflight service"]
for c in service:
 service\_plot(c)

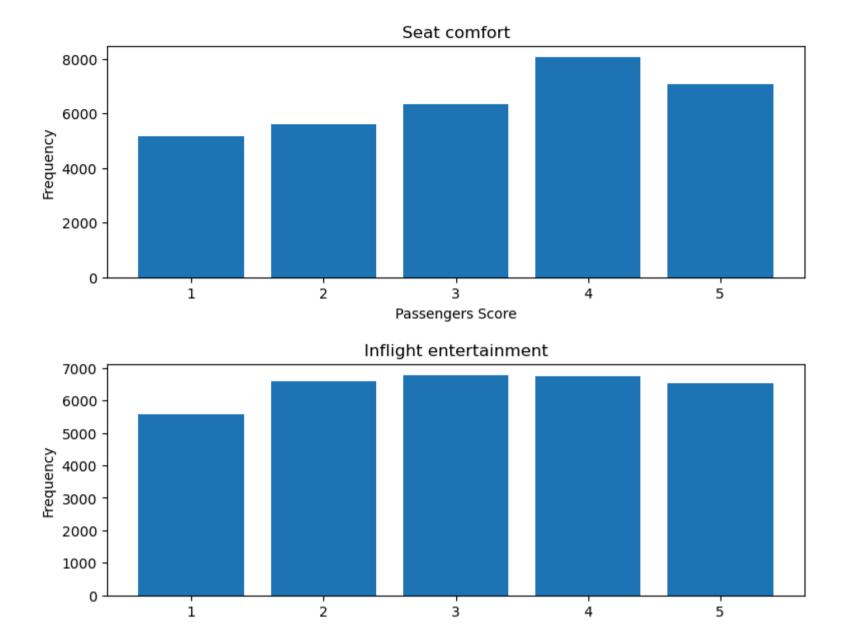






In [207... service = ['Food and drink', 'Online boarding', 'Seat comfort', 'Inflight entertainment']
for c in service:
 service\_plot(c)





Passengers Score