In [1]:
```
import pandas as pd
import numpy as np
```

IMPORT AND PRINT DATA SET

In [2]:
```
data = pd.read_csv("Salesworkload.csv")
data
```

Out[2]:

	MonthYear	Time index	Country	StoreID	City	Dept_ID	Dept. Name	HoursOwn	HoursLe
0	10.2016	1.0	United Kingdom	88253.0	London (I)	1.0	Dry	3184.764	
1	10.2016	1.0	United Kingdom	88253.0	London (I)	2.0	Frozen	1582.941	
2	10.2016	1.0	United Kingdom	88253.0	London (I)	3.0	other	47.205	
3	10.2016	1.0	United Kingdom	88253.0	London (I)	4.0	Fish	1623.852	
4	10.2016	1.0	United Kingdom	88253.0	London (I)	5.0	Fruits & Vegetables	1759.173	
...	...	...	...	...	...	...	...	...	...
7653	6.2017	9.0	Sweden	29650.0	Gothenburg	12.0	Checkout	6322.323	
7654	6.2017	9.0	Sweden	29650.0	Gothenburg	16.0	Customer Services	4270.479	

SHAPE

In [3]:
```
np.shape(data)
```

Out[3]: (7658, 14)

SIZE

In [4]:
```
np.size(data)
```

Out[4]: 107212

PRINT FIRST 10 VALUES

In [5]:
```
data.head(10)
```

Out[5]:

	MonthYear	Time index	Country	StoreID	City	Dept_ID	Dept. Name	HoursOwn	HoursLease	
0	10.2016	1.0	United Kingdom	88253.0	London (I)	1.0	Dry	3184.764	0.0	3
1	10.2016	1.0	United Kingdom	88253.0	London (I)	2.0	Frozen	1582.941	0.0	
2	10.2016	1.0	United Kingdom	88253.0	London (I)	3.0	other	47.205	0.0	4
3	10.2016	1.0	United Kingdom	88253.0	London (I)	4.0	Fish	1623.852	0.0	3
4	10.2016	1.0	United Kingdom	88253.0	London (I)	5.0	Fruits & Vegetables	1759.173	0.0	1
5	10.2016	1.0	United Kingdom	88253.0	London (I)	6.0	Meat	8270.316	0.0	17
6	10.2016	1.0	United Kingdom	88253.0	London (I)	13.0	Food	16468.251	0.0	31
7	10.2016	1.0	United Kingdom	88253.0	London (I)	7.0	Clothing	4698.471	0.0	2
8	10.2016	1.0	United Kingdom	88253.0	London (I)	8.0	Household	1183.272	0.0	
9	10.2016	1.0	United Kingdom	88253.0	London (I)	9.0	Hardware	2029.815	0.0	

PRINT LAST 7 VALUES

In [6]:
```
data.tail(5)
```

Out[6]:

	MonthYear	Time index	Country	StoreID	City	Dept_ID	Dept. Name	HoursOwn	HoursLea
7653	6.2017	9.0	Sweden	29650.0	Gothenburg	12.0	Checkout	6322.323	0
7654	6.2017	9.0	Sweden	29650.0	Gothenburg	16.0	Customer Services	4270.479	0
7655	6.2017	9.0	Sweden	29650.0	Gothenburg	11.0	Delivery	0	0
7656	6.2017	9.0	Sweden	29650.0	Gothenburg	17.0	others	2224.929	0
7657	6.2017	9.0	Sweden	29650.0	Gothenburg	18.0	all	39652.2	0

DESCRIPTION OF TABLE

In [7]:
```
data.describe()
```

Out[7]:

	Time index	StoreID	Dept_ID	HoursLease	Sales units	Turnover	Custor
count	7650.000000	7650.000000	7650.000000	7650.000000	7.650000e+03	7.650000e+03	
mean	5.000000	61995.220000	9.470588	22.036078	1.076471e+06	3.721393e+06	N
std	2.582158	29924.581631	5.337429	133.299513	1.728113e+06	6.003380e+06	N
min	1.000000	12227.000000	1.000000	0.000000	0.000000e+00	0.000000e+00	N
25%	3.000000	29650.000000	5.000000	0.000000	5.457125e+04	2.726798e+05	N
50%	5.000000	75400.500000	9.000000	0.000000	2.932300e+05	9.319575e+05	N
75%	7.000000	87703.000000	14.000000	0.000000	9.175075e+05	3.264432e+06	N
max	9.000000	98422.000000	18.000000	3984.000000	1.124296e+07	4.271739e+07	N

FIND NULL VALUES

In [8]:
```
data.isna()
```

Out[8]:

	MonthYear	Time index	Country	StoreID	City	Dept_ID	Dept. Name	HoursOwn	HoursLease	Sales units
0	False	False	False	False	False	False	False	False	False	False
1	False	False	False	False	False	False	False	False	False	False
2	False	False	False	False	False	False	False	False	False	False
3	False	False	False	False	False	False	False	False	False	False
4	False	False	False	False	False	False	False	False	False	False
...	...	...	...	...	...	...	...	...	...	...
7653	False	False	False	False	False	False	False	False	False	False
7654	False	False	False	False	False	False	False	False	False	False
7655	False	False	False	False	False	False	False	False	False	False
7656	False	False	False	False	False	False	False	False	False	False
7657	False	False	False	False	False	False	False	False	False	False

7658 rows × 14 columns

FILL NULL VALUES

In [9]:
```
data.fillna(1)
```

Out[9]:

	MonthYear	Time index	Country	StoreID	City	Dept_ID	Dept. Name	HoursOwn	HoursLe
0	10.2016	1.0	United Kingdom	88253.0	London (I)	1.0	Dry	3184.764	
1	10.2016	1.0	United Kingdom	88253.0	London (I)	2.0	Frozen	1582.941	
2	10.2016	1.0	United Kingdom	88253.0	London (I)	3.0	other	47.205	
3	10.2016	1.0	United Kingdom	88253.0	London (I)	4.0	Fish	1623.852	
4	10.2016	1.0	United Kingdom	88253.0	London (I)	5.0	Fruits & Vegetables	1759.173	
...	...	...	...	...	...	...	...	...	...
7653	6.2017	9.0	Sweden	29650.0	Gothenburg	12.0	Checkout	6322.323	
7654	6.2017	9.0	Sweden	29650.0	Gothenburg	16.0	Customer Services	4270.479	
7655	6.2017	9.0	Sweden	29650.0	Gothenburg	11.0	Delivery	0	
7656	6.2017	9.0	Sweden	29650.0	Gothenburg	17.0	others	2224.929	
7657	6.2017	9.0	Sweden	29650.0	Gothenburg	18.0	all	39652.2	

7658 rows × 14 columns

In [10]:
```
data.columns
```

Out[10]:
```
Index(['MonthYear', 'Time index', 'Country', 'StoreID', 'City', 'Dept_ID',
       'Dept. Name', 'HoursOwn', 'HoursLease', 'Sales units', 'Turnover',
       'Customer', 'Area (m2)', 'Opening hours'],
      dtype='object')
```

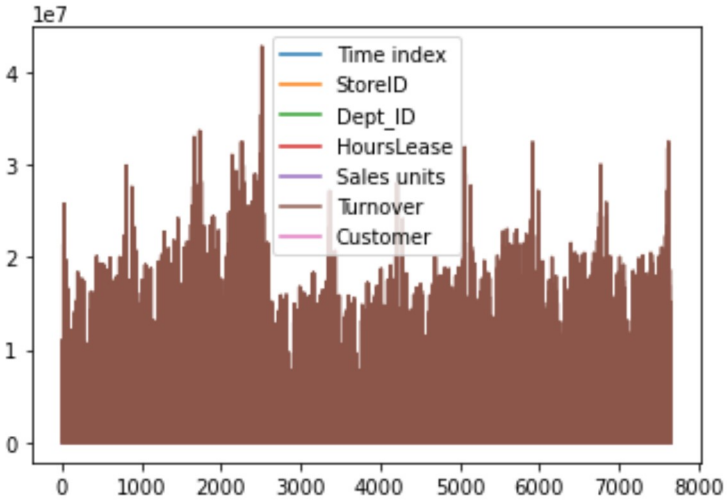
In [11]:
```
data.index
```

Out[11]:
```
RangeIndex(start=0, stop=7658, step=1)
```

LINE PLOT

In [12]:
```
data.plot.line()
```

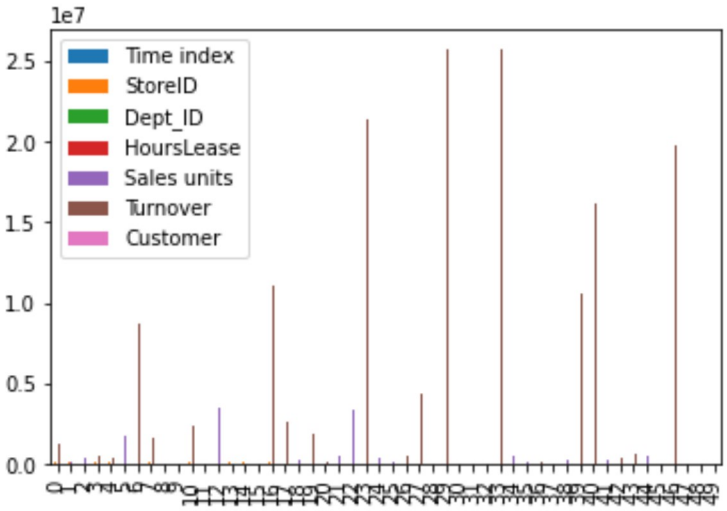
Out[12]: <AxesSubplot:>



BAR CHART

In [13]:
```
a=data.head(50)
a.plot.bar()
```

Out[13]: <AxesSubplot:>



AREA CHART

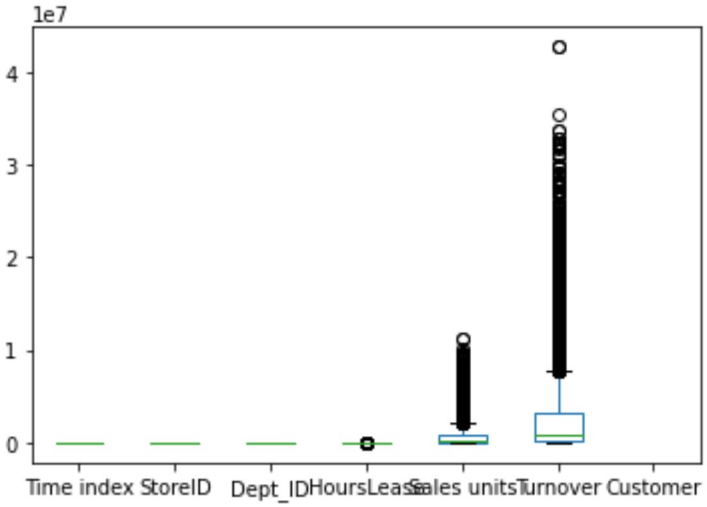
In [14]:
```
data.plot.area()
```

Out[14]: <AxesSubplot:>

BOX PLOT

In [15]:
```
data.plot.box()
```

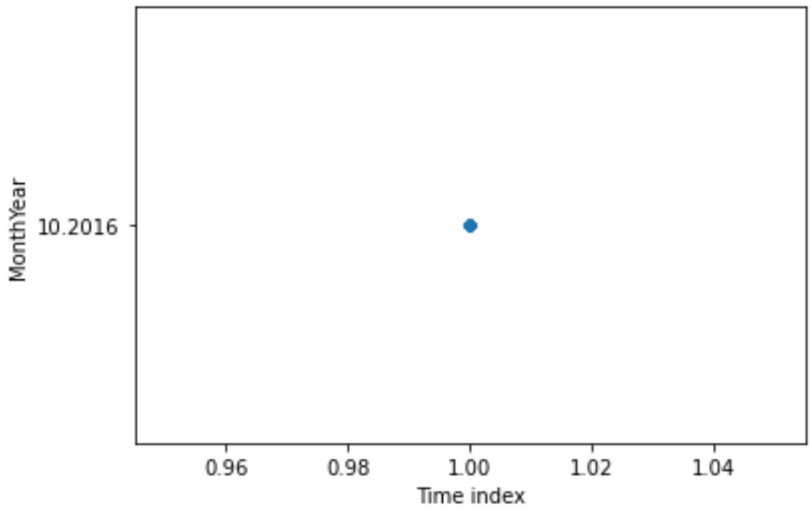
Out[15]: <AxesSubplot:>



SCATTER PLOT

In [16]:
```
a.plot.scatter(x = "Time index", y = "MonthYear" )
```

Out[16]: <AxesSubplot:xlabel='Time index', ylabel='MonthYear'>



PIE CHART

In [17]:
```
a.plot.pie(y = "Time index")
```

Out[17]: <AxesSubplot:ylabel='Time index'>

In [ ]:

In [ ]:

In [ ]: