

Working with Dates in Pandas

```
In [1]: import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
from IPython.core.interactiveshell import InteractiveShell
InteractiveShell.ast_node_interactivity = "all"
%matplotlib inline
```

```
In [2]: person = pd.DataFrame({'Name': ['Asif' , 'Basit' , 'John', 'Hary'],
                               'DOB': ['3/20/1960', '3/19/1981', '9/12/1999' , '7/12/1967'],
                               'EmpID': ['E453', 'E983', 'E675', 'E120']})

person
person.dtypes
```

Out[2]:

	Name	DOB	EmpID
0	Asif	3/20/1960	E453
1	Basit	3/19/1981	E983
2	John	9/12/1999	E675
3	Hary	7/12/1967	E120

Out[2]: Name object
DOB object
EmpID object
dtype: object

```
In [3]: # Change the datatype of the column to Datetime
person['DOB']=pd.to_datetime(person['DOB'])
person.dtypes
person
```

Out[3]: Name object
DOB datetime64[ns]
EmpID object
dtype: object

Out[3]:

	Name	DOB	EmpID
0	Asif	1960-03-20	E453
1	Basit	1981-03-19	E983
2	John	1999-09-12	E675
3	Hary	1967-07-12	E120

```
In [4]: # Extract Month , Day , Year , 'Day of Week' and 'Week of Year' from the Date field
person['Month'] = person.DOB.dt.month
person['Day'] = person.DOB.dt.day
person['Year'] = person.DOB.dt.year
person['Week Number'] =person.DOB.dt.isocalendar().week
person['Day Of Week'] = person.DOB.dt.dayofweek
person['Day Name']=pd.to_datetime(person['DOB']).dt.day_name()
person['Month Name']=pd.to_datetime(person['DOB']).dt.month_name()
person
```

Out[4]:

	Name	DOB	EmpID	Month	Day	Year	Week Number	Day Of Week	Day Name	Month Name
0	Asif	1960-03-20	E453	3	20	1960	11	6	Sunday	March
1	Basit	1981-03-19	E983	3	19	1981	12	3	Thursday	March
2	John	1999-09-12	E675	9	12	1999	36	6	Sunday	September
3	Hary	1967-07-12	E120	7	12	1967	28	2	Wednesday	July



```
In [5]: # Changing Datetime format to '%d/%m/%Y' using strftime()
person['DOB']=pd.to_datetime(person['DOB']).dt.strftime('%d/%m/%Y') # Note : This will change the datatype back to object
person
person.dtypes
```

Out[5]:

	Name	DOB	EmpID	Month	Day	Year	Week Number	Day Of Week	Day Name	Month Name
0	Asif	20/03/1960	E453	3	20	1960	11	6	Sunday	March
1	Basit	19/03/1981	E983	3	19	1981	12	3	Thursday	March
2	John	12/09/1999	E675	9	12	1999	36	6	Sunday	September
3	Hary	12/07/1967	E120	7	12	1967	28	2	Wednesday	July

Out[5]: Name object
DOB object
EmpID object
Month int64
Day int64
Year int64
Week Number UInt32
Day Of Week int64
Day Name object
Month Name object
dtype: object

```
In [6]: # Changing Datetime format to '%m-%d-%Y' using strftime()
person['DOB']=pd.to_datetime(person['DOB']).dt.strftime('%m-%d-%Y') # Note : This will change the datatype back to object
person
person.dtypes
```

Out[6]:

	Name	DOB	EmpID	Month	Day	Year	Week Number	Day Of Week	Day Name	Month Name
0	Asif	03-20-1960	E453	3	20	1960	11	6	Sunday	March
1	Basit	03-19-1981	E983	3	19	1981	12	3	Thursday	March
2	John	12-09-1999	E675	9	12	1999	36	6	Sunday	September
3	Hary	12-07-1967	E120	7	12	1967	28	2	Wednesday	July

Out[6]: Name object
DOB object
EmpID object
Month int64
Day int64
Year int64
Week Number UInt32
Day Of Week int64
Day Name object
Month Name object
dtype: object

```
In [7]: # Find employees who are born after 12-20-1980
from datetime import date
person[pd.to_datetime(person['DOB']) > pd.Timestamp(date(1980,12,20))]
```

Out[7]:

	Name	DOB	EmpID	Month	Day	Year	Week Number	Day Of Week	Day Name	Month Name
1	Basit	03-19-1981	E983	3	19	1981	12	3	Thursday	March
2	John	12-09-1999	E675	9	12	1999	36	6	Sunday	September

```
In [8]: # Find employees who are born after 12-20-1980
from datetime import date
person[pd.to_datetime(person['DOB']) > pd.Timestamp('1980/12/20')]
```

Out[8]:

	Name	DOB	EmpID	Month	Day	Year	Week Number	Day Of Week	Day Name	Month Name
1	Basit	03-19-1981	E983	3	19	1981	12	3	Thursday	March
2	John	12-09-1999	E675	9	12	1999	36	6	Sunday	September

```
In [9]: # Find all records where DOB is between "12-20-1980" - "12-20-2000"
from datetime import date
person[(pd.to_datetime(person['DOB']) > pd.Timestamp(date(1980,12,20))) &
      (pd.to_datetime(person['DOB']) < pd.Timestamp(date(2000,12,20)))]
```

Out[9]:

	Name	DOB	EmpID	Month	Day	Year	Week Number	Day Of Week	Day Name	Month Name
1	Basit	03-19-1981	E983	3	19	1981	12	3	Thursday	March
2	John	12-09-1999	E675	9	12	1999	36	6	Sunday	September

```
In [10]: # Min Date in a dataframe column
pd.to_datetime(person['DOB']).min()
```

Out[10]: Timestamp('1960-03-20 00:00:00')

In [11]:

```
# Max Date in a dataframe column
pd.to_datetime(person['DOB']).max()
```

Out[11]: Timestamp('1999-12-09 00:00:00')

In [12]:

```
# Current timestamp
timestamp = pd.to_datetime('now')
print('Timestamp :{}'.format(timestamp))

# Current Date (Today)
current_date=pd.to_datetime('now').date()
print('Current Date : {}'.format(current_date))

# Yesterday
yesterday = pd.to_datetime('now').date()- pd.Timedelta('1 day')
print('Yesterday: {}'.format(yesterday))

# tomorrow
tomorrow = pd.to_datetime('now').date() + pd.Timedelta('1 day')
print('Tomorrow: {}'.format(tomorrow))
#OR
tomorrow = pd.to_datetime('now').date() + pd.DateOffset(days=1)
print('Tomorrow: {}'.format(tomorrow))

#Add Business Day to current date
add_buss_day=pd.to_datetime('now').date()+pd.offsets.BDay(1)
print('Date after adding Business Day: {}'.format(add_buss_day)) # Saturday & Sunday will be excluded

#Add 1 month to current date
add_month=pd.to_datetime('now').date()+pd.DateOffset(months=1)
print('Date after adding 1 month to current date: {}'.format(add_month))

# Date Difference in hours
diff_hrs= (pd.to_datetime('2021-03-26 21:11:13') - pd.to_datetime('2021-03-01 11:11:13')).total_seconds()//3600
print('Date Difference in hours: {}'.format(diff_hrs))
```

Timestamp :2021-03-26 22:17:00.173312
Current Date : 2021-03-26
Yesterday: 2021-03-25
Tomorrow: 2021-03-27
Tomorrow: 2021-03-27 00:00:00
Date after adding Business Day: 2021-03-29 00:00:00
Date after adding 1 month to current date: 2021-04-26 00:00:00
Date Difference in hours: 610.0

In [13]:

```
# Age of the person (Extract year from current time and subtract from Year column)
person['Age'] = pd.to_datetime('now').year - person['Year']
person

# OR
person['Age'] = pd.to_datetime('now').year - pd.to_datetime(person['DOB']).dt.year
person
```

Out[13]:

	Name	DOB	EmpID	Month	Day	Year	Week Number	Day Of Week	Day Name	Month Name	Age
0	Asif	03-20-1960	E453	3	20	1960	11	6	Sunday	March	61
1	Basit	03-19-1981	E983	3	19	1981	12	3	Thursday	March	40
2	John	12-09-1999	E675	9	12	1999	36	6	Sunday	September	22
3	Hary	12-07-1967	E120	7	12	1967	28	2	Wednesday	July	54

Out[13]:

	Name	DOB	EmpID	Month	Day	Year	Week Number	Day Of Week	Day Name	Month Name	Age
0	Asif	03-20-1960	E453	3	20	1960	11	6	Sunday	March	61
1	Basit	03-19-1981	E983	3	19	1981	12	3	Thursday	March	40
2	John	12-09-1999	E675	9	12	1999	36	6	Sunday	September	22
3	Hary	12-07-1967	E120	7	12	1967	28	2	Wednesday	July	54

```
In [14]: # Lets work on simple dataset (Female birth Dataset)
# The source of the dataset is credited to Newton (1988).
female = pd.read_csv('https://raw.githubusercontent.com/jbrownlee/Datasets/master/daily-total-female-births.csv')
female.head(10)

Out[14]:
   Date Births
0 1959-01-01    35
1 1959-01-02    32
2 1959-01-03    30
3 1959-01-04    31
4 1959-01-05    44
5 1959-01-06    29
6 1959-01-07    45
7 1959-01-08    43
8 1959-01-09    38
9 1959-01-10    27

In [15]: # Find min & max date to get the date range
pd.to_datetime(female['Date']).max()-pd.to_datetime(female['Date']).min() # This is one year of dataset that we need to

Out[15]: Timedelta('364 days 00:00:00')

In [16]: # Change datatype of Date column to Datetime
female['Date'] = pd.to_datetime(female['Date'])

In [17]: # Create helper columns
female['Month'] = female.Date.dt.month
female['Day'] = female.Date.dt.day
female['Year'] = female.Date.dt.year
female['Week Number'] =female.Date.dt.isocalendar().week
female['Day Of Week'] = female.Date.dt.dayofweek
female['Day Name']=pd.to_datetime(female['Date']).dt.day_name()
female['Month Name']=pd.to_datetime(female['Date']).dt.month_name()

# OR We can use below lines of code as well
female['Month'] = female.Date.apply(lambda x:x.month)
female['Day'] = female.Date.apply(lambda x:x.day)
female['Year'] = female.Date.apply(lambda x:x.year)
female['Week Number'] =female.Date.apply(lambda x:x.week)
female['Day Of Week'] = female.Date.apply(lambda x:x.dayofweek)
female['Day Name']=pd.to_datetime(female['Date']).apply(lambda x:x.day_name())
female['Month Name']=pd.to_datetime(female['Date']).apply(lambda x:x.month_name())

female.head()
```

Out[17]:

	Date	Births	Month	Day	Year	Week Number	Day Of Week	Day Name	Month Name
0	1959-01-01	35	1	1	1959	1	3	Thursday	January
1	1959-01-02	32	1	2	1959	1	4	Friday	January
2	1959-01-03	30	1	3	1959	1	5	Saturday	January
3	1959-01-04	31	1	4	1959	1	6	Sunday	January
4	1959-01-05	44	1	5	1959	2	0	Monday	January

```
In [18]: # Total female births in the month of January
female[female['Month Name'] =='January']['Births'].sum()
```

Out[18]: 1213

```
In [19]: # Total female births in each month using for Loop
for i in female['Month Name'].unique():
    print('Female births in {0} : {1}'.format(i,female[female['Month Name'] ==i]['Births'].sum()))

Female births in January : 1213
Female births in February : 1148
Female births in March : 1218
Female births in April : 1195
Female births in May : 1208
Female births in June : 1212
Female births in July : 1300
Female births in August : 1351
Female births in September : 1446
Female births in October : 1368
Female births in November : 1350
Female births in December : 1314
```

In [20]:

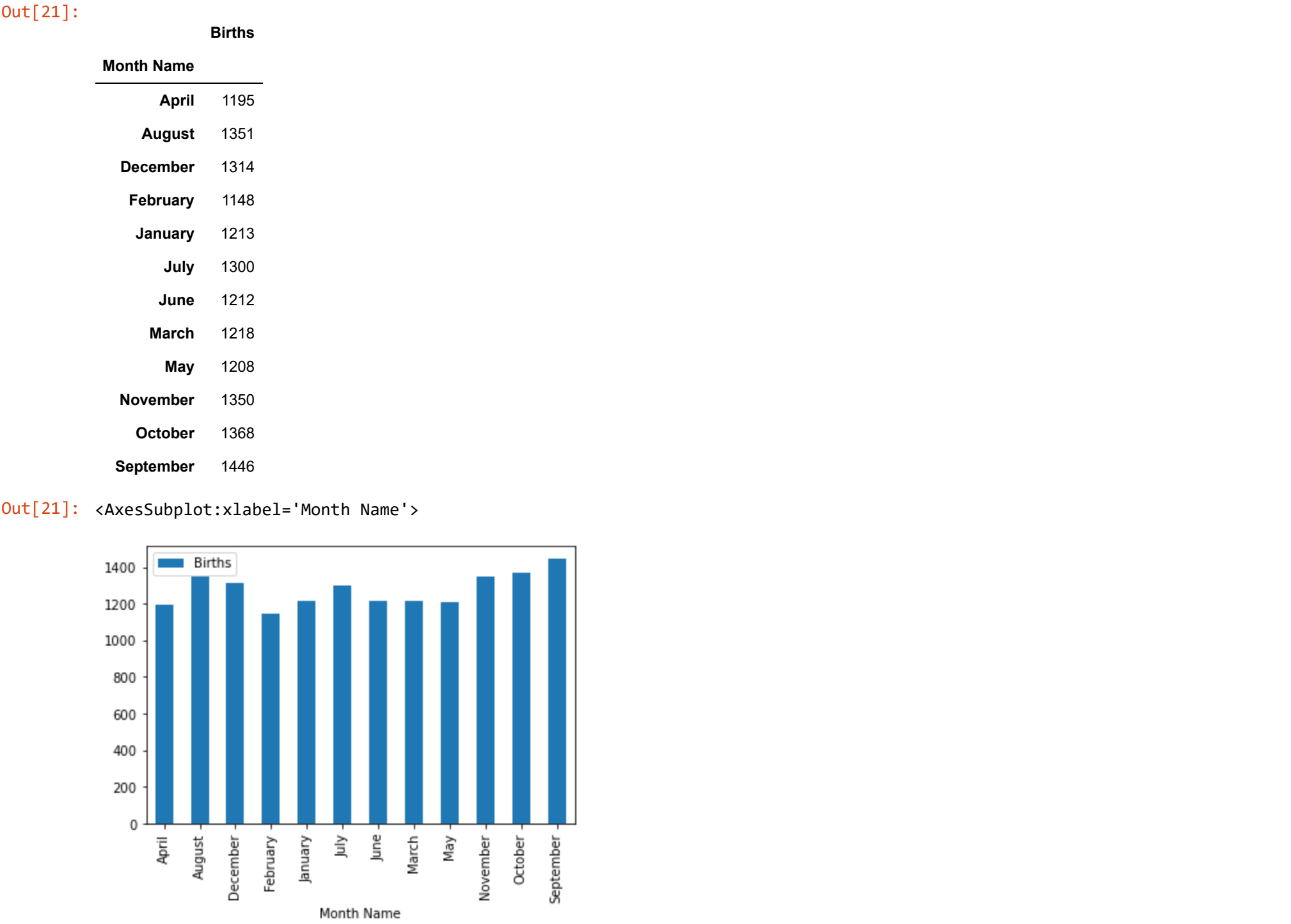
```
# Using "group by" to get female births in each month
female.groupby('Month Name').sum()[['Births']] # MonthName column data is not in ascending order.
```

Out[20]:

Births	
Month Name	
April	1195
August	1351
December	1314
February	1148
January	1213
July	1300
June	1212
March	1218
May	1208
November	1350
October	1368
September	1446

In [21]:

```
# Use Pivot table to get female births in each month
pd.pivot_table(female,values=['Births'],index=['Month Name'],aggfunc=np.sum) # Month Name data is not in proper order.
pd.pivot_table(female,values=['Births'],index=['Month Name'],aggfunc=np.sum).plot.bar()
```



In [22]:

```
# We will convert "Month Name" column into Categorical variable and specify the ordering
order = ['January', 'February', 'March', 'April', 'May', 'June',
        'July', 'August', 'September', 'October', 'November', 'December']

female['Month Name']=pd.Categorical(female['Month Name'],order)
```

```
In [23]: female.groupby('Month Name').sum()[['Births']] # Now the output is much better after custom ordering
```

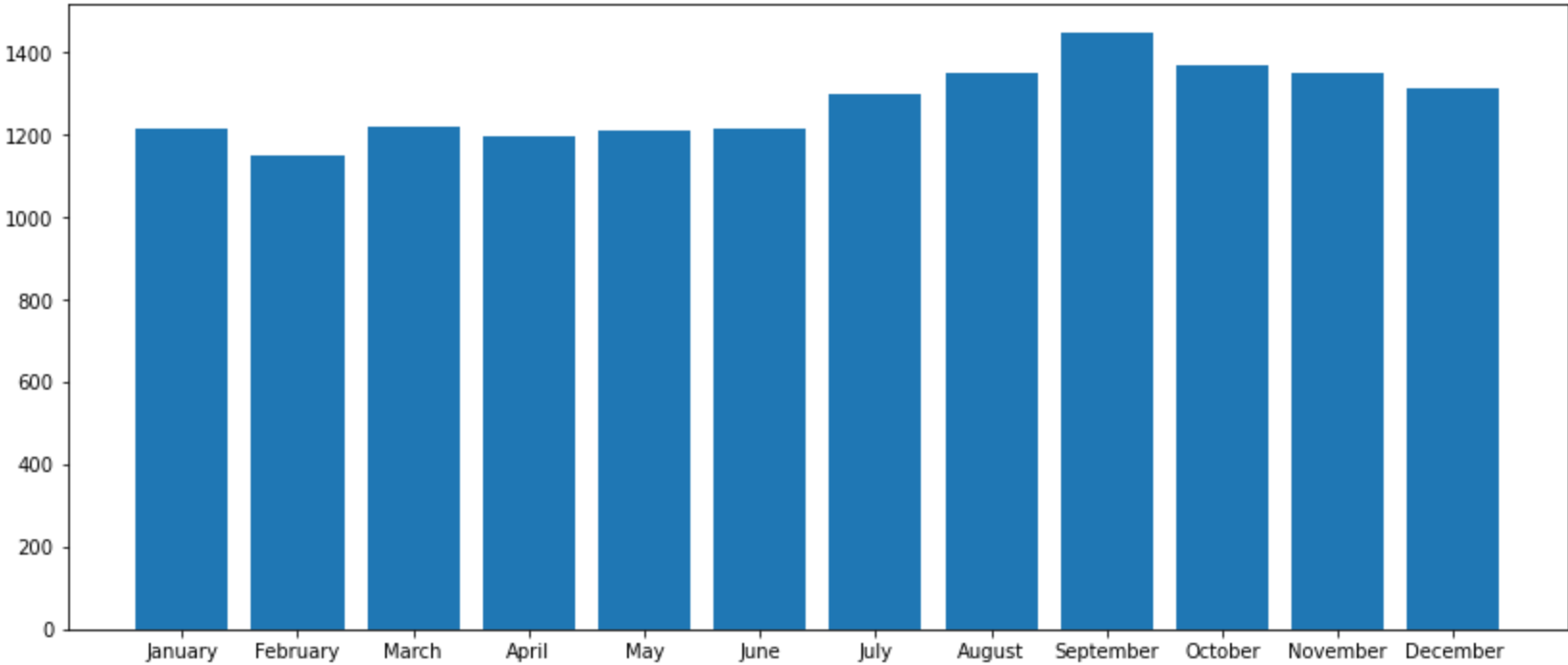
Out[23]:

Births	
Month Name	
January	1213
February	1148
March	1218
April	1195
May	1208
June	1212
July	1300
August	1351
September	1446
October	1368
November	1350
December	1314

```
In [24]: # Bar plot to get monthly female births using matplotlib library
plt.figure(figsize=(14,6))
plt.bar(female.groupby('Month Name').sum().index,female.groupby('Month Name').sum()['Births'])
plt.show()
```

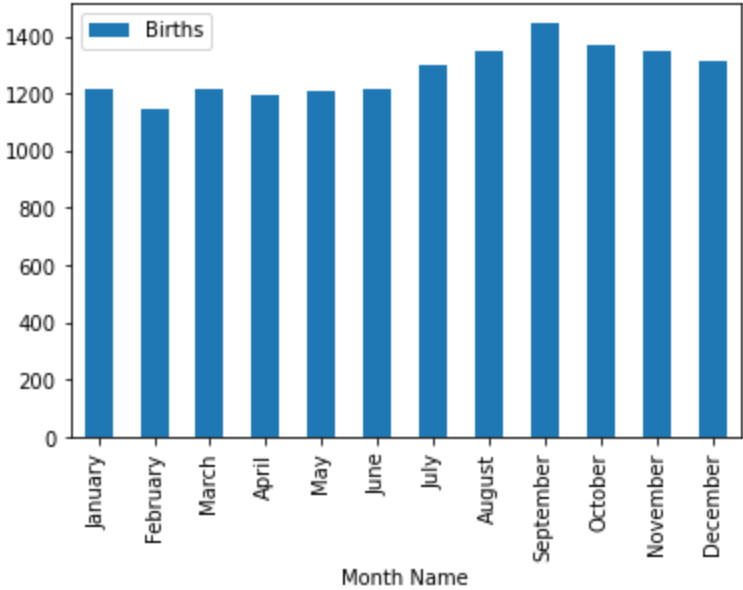
Out[24]: <Figure size 1008x432 with 0 Axes>

Out[24]: <BarContainer object of 12 artists>



```
In [25]: # Bar plot to get monthly female births using Pandas
pd.pivot_table(female,values=['Births'],index=['Month Name'],aggfunc=np.sum).plot.bar()
```

Out[25]: <AxesSubplot:xlabel='Month Name'>



```
In [26]: # Same way we can implement custom ordering for Day Name field
order=[ 'Monday', 'Tuesday', 'Wednesday', 'Thursday', 'Friday', 'Saturday', 'Sunday']
female['Day Name']=pd.Categorical(female['Day Name'],order)
female.groupby('Day Name').sum()[['Births']]
```

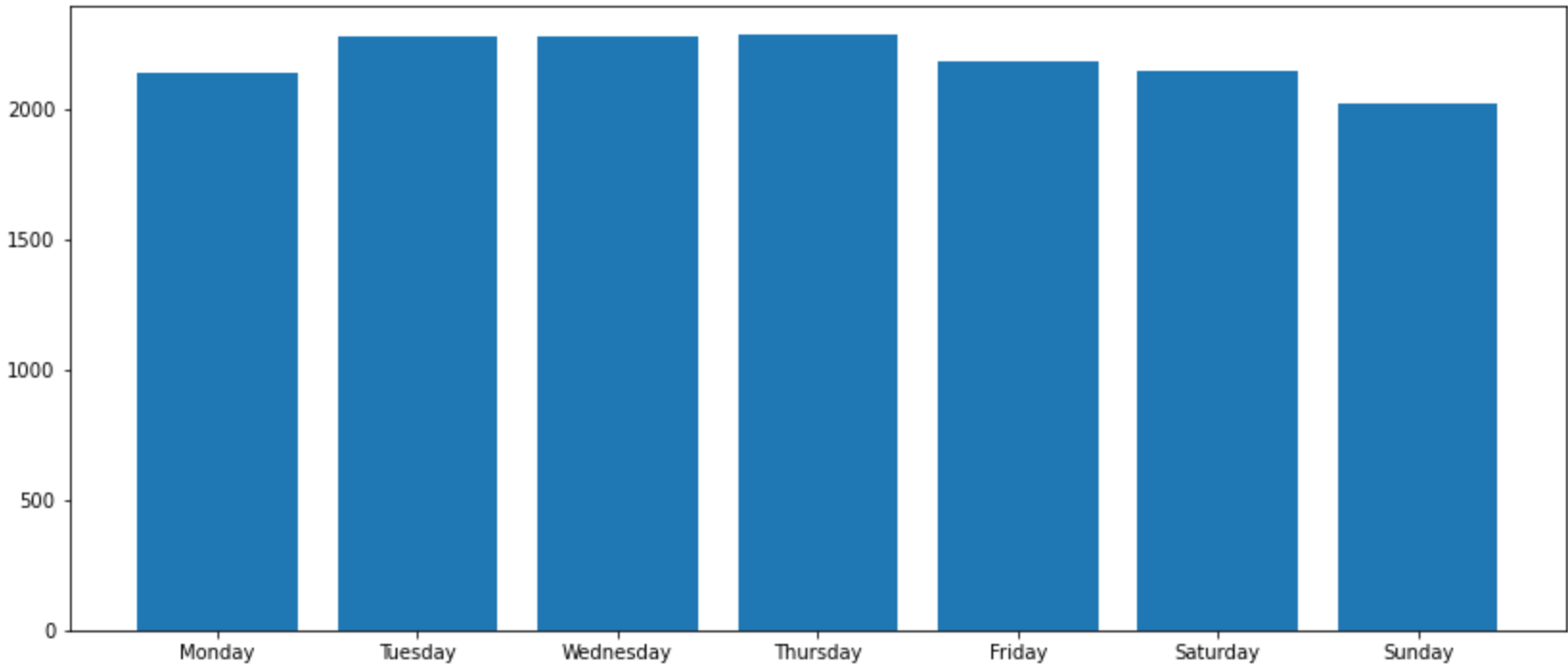
Out[26]:

	Births
Day Name	
Monday	2139
Tuesday	2275
Wednesday	2280
Thursday	2283
Friday	2182
Saturday	2142
Sunday	2022

```
In [27]: # Plot Bar Graph to show female births on day basis.
plt.figure(figsize=(14,6))
plt.bar(female.groupby('Day Name').sum().index,female.groupby('Day Name').sum()['Births'])
plt.show()
```

Out[27]: <Figure size 1008x432 with 0 Axes>

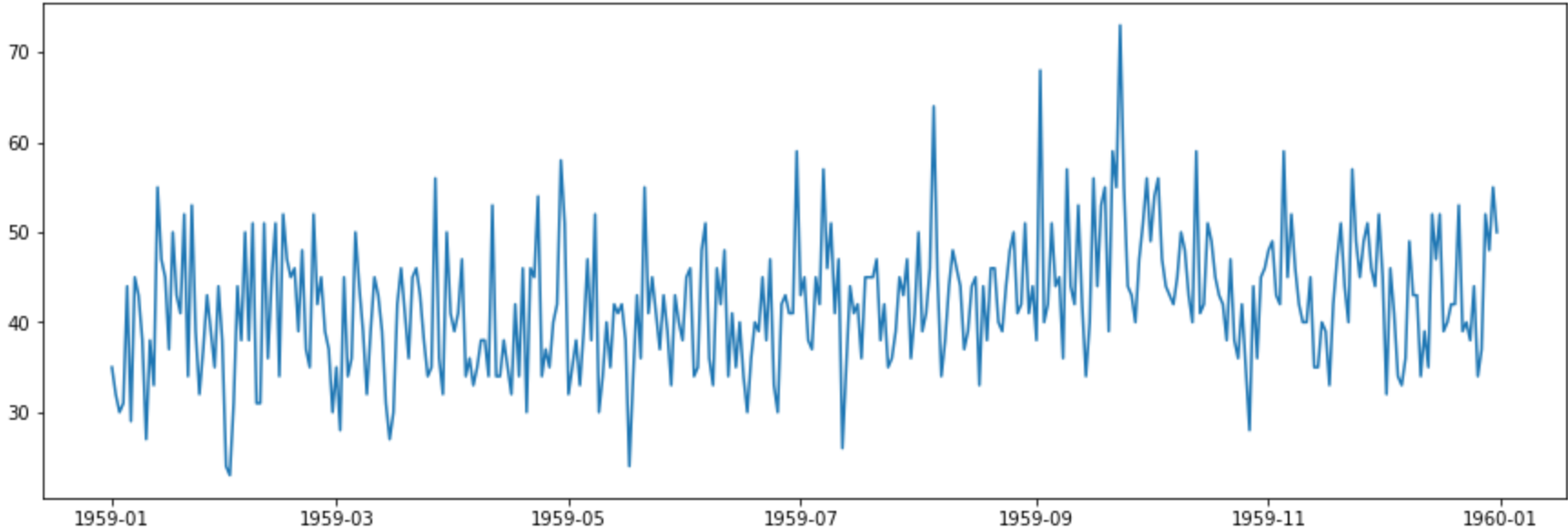
Out[27]: <BarContainer object of 7 artists>



```
In [28]: # Daily female births
plt.figure(figsize=(15,5))
plt.plot(female['Date'],female['Births'])
```

Out[28]: <Figure size 1080x360 with 0 Axes>

Out[28]: [<matplotlib.lines.Line2D at 0x1ffff7ae460>]




```
In [29]: # Get all records for the month of Janaury(1959-01-01- 1959-01-31).
# Using boolean is not good method when we are dealing with Large datasets.
female[(pd.to_datetime(female['Date']) > pd.Timestamp(date(1959,1,1))) &
        (pd.to_datetime(female['Date']) < pd.Timestamp(date(1959,1,31)))]
```

Out[29]:

	Date	Births	Month	Day	Year	Week Number	Day Of Week	Day Name	Month Name
1	1959-01-02	32	1	2	1959	1	4	Friday	January
2	1959-01-03	30	1	3	1959	1	5	Saturday	January
3	1959-01-04	31	1	4	1959	1	6	Sunday	January
4	1959-01-05	44	1	5	1959	2	0	Monday	January
5	1959-01-06	29	1	6	1959	2	1	Tuesday	January
6	1959-01-07	45	1	7	1959	2	2	Wednesday	January
7	1959-01-08	43	1	8	1959	2	3	Thursday	January
8	1959-01-09	38	1	9	1959	2	4	Friday	January
9	1959-01-10	27	1	10	1959	2	5	Saturday	January
10	1959-01-11	38	1	11	1959	2	6	Sunday	January
11	1959-01-12	33	1	12	1959	3	0	Monday	January
12	1959-01-13	55	1	13	1959	3	1	Tuesday	January
13	1959-01-14	47	1	14	1959	3	2	Wednesday	January
14	1959-01-15	45	1	15	1959	3	3	Thursday	January
15	1959-01-16	37	1	16	1959	3	4	Friday	January
16	1959-01-17	50	1	17	1959	3	5	Saturday	January
17	1959-01-18	43	1	18	1959	3	6	Sunday	January
18	1959-01-19	41	1	19	1959	4	0	Monday	January
19	1959-01-20	52	1	20	1959	4	1	Tuesday	January
20	1959-01-21	34	1	21	1959	4	2	Wednesday	January
21	1959-01-22	53	1	22	1959	4	3	Thursday	January
22	1959-01-23	39	1	23	1959	4	4	Friday	January
23	1959-01-24	32	1	24	1959	4	5	Saturday	January
24	1959-01-25	37	1	25	1959	4	6	Sunday	January
25	1959-01-26	43	1	26	1959	5	0	Monday	January
26	1959-01-27	39	1	27	1959	5	1	Tuesday	January
27	1959-01-28	35	1	28	1959	5	2	Wednesday	January
28	1959-01-29	44	1	29	1959	5	3	Thursday	January
29	1959-01-30	38	1	30	1959	5	4	Friday	January

```
In [30]: # Convert date column into Datetime index for faster selection.
female = female.set_index(['Date'])
female
female.index # DatetimeIndex
```

Out[30]:

	Births	Month	Day	Year	Week Number	Day Of Week	Day Name	Month Name
Date								
1959-01-01	35	1	1	1959	1	3	Thursday	January
1959-01-02	32	1	2	1959	1	4	Friday	January
1959-01-03	30	1	3	1959	1	5	Saturday	January
1959-01-04	31	1	4	1959	1	6	Sunday	January
1959-01-05	44	1	5	1959	2	0	Monday	January
...
1959-12-27	37	12	27	1959	52	6	Sunday	December
1959-12-28	52	12	28	1959	53	0	Monday	December
1959-12-29	48	12	29	1959	53	1	Tuesday	December
1959-12-30	55	12	30	1959	53	2	Wednesday	December
1959-12-31	50	12	31	1959	53	3	Thursday	December

365 rows × 8 columns

```
Out[30]: DatetimeIndex(['1959-01-01', '1959-01-02', '1959-01-03', '1959-01-04',
                        '1959-01-05', '1959-01-06', '1959-01-07', '1959-01-08',
                        '1959-01-09', '1959-01-10',
                        ...,
                        '1959-12-22', '1959-12-23', '1959-12-24', '1959-12-25',
                        '1959-12-26', '1959-12-27', '1959-12-28', '1959-12-29',
                        '1959-12-30', '1959-12-31'],
                        dtype='datetime64[ns]', name='Date', length=365, freq=None)
```


In [31]:

Now Lets select the data
female.loc['1959'] # Get all data for year 1959

Out[31]:

	Births	Month	Day	Year	Week Number	Day Of Week	Day Name	Month Name
Date								
1959-01-01	35	1	1	1959	1	3	Thursday	January
1959-01-02	32	1	2	1959	1	4	Friday	January
1959-01-03	30	1	3	1959	1	5	Saturday	January
1959-01-04	31	1	4	1959	1	6	Sunday	January
1959-01-05	44	1	5	1959	2	0	Monday	January
...
1959-12-27	37	12	27	1959	52	6	Sunday	December
1959-12-28	52	12	28	1959	53	0	Monday	December
1959-12-29	48	12	29	1959	53	1	Tuesday	December
1959-12-30	55	12	30	1959	53	2	Wednesday	December
1959-12-31	50	12	31	1959	53	3	Thursday	December

365 rows × 8 columns

```
In [32]: female.loc['1960'] # There is no data for 1960.
```

KeyError Traceback (most recent call last)
pandas_libs\index.pyx in pandas._libs.index.DatetimeEngine.get_loc()

pandas_libs\hashtable_class_helper.pxi in pandas._libs.hashtable.Int64HashTable.get_item()

pandas_libs\hashtable_class_helper.pxi in pandas._libs.hashtable.Int64HashTable.get_item()

KeyError: -315619200000000000

During handling of the above exception, another exception occurred:

KeyError Traceback (most recent call last)
C:\Anaconda\lib\site-packages\pandas\core\indexes\base.py in get_loc(self, key, method, tolerance)
 2894 try:
-> 2895 return self._engine.get_loc(casted_key)
 2896 except KeyError as err:

pandas_libs\index.pyx in pandas._libs.index.DatetimeEngine.get_loc()

pandas_libs\index.pyx in pandas._libs.index.DatetimeEngine.get_loc()

KeyError: Timestamp('1960-01-01 00:00:00')

The above exception was the direct cause of the following exception:

KeyError Traceback (most recent call last)
C:\Anaconda\lib\site-packages\pandas\core\indexes\datetime.py in get_loc(self, key, method, tolerance)
 624 try:
--> 625 return Index.get_loc(self, key, method, tolerance)
 626 except KeyError as err:

C:\Anaconda\lib\site-packages\pandas\core\indexes\base.py in get_loc(self, key, method, tolerance)
 2896 except KeyError as err:
-> 2897 raise KeyError(key) from err
 2898

KeyError: Timestamp('1960-01-01 00:00:00')

The above exception was the direct cause of the following exception:

KeyError Traceback (most recent call last)
<ipython-input-32-9af28ea95a40> in <module>
----> 1 female.loc['1960'] # There is no data for 1960.

C:\Anaconda\lib\site-packages\pandas\core\indexing.py in __getitem__(self, key)
 877
 878 maybe_callable = com.apply_if_callable(key, self.obj)
--> 879 return self._getitem_axis(maybe_callable, axis=axis)
 880
 881 def _is_scalar_access(self, key: Tuple):

C:\Anaconda\lib\site-packages\pandas\core\indexing.py in _getitem_axis(self, key, axis)
 1108 # fall thru to straight lookup
 1109 self._validate_key(key, axis)
-> 1110 return self._get_label(key, axis=axis)
 1111
 1112 def _get_slice_axis(self, slice_obj: slice, axis: int):

C:\Anaconda\lib\site-packages\pandas\core\indexing.py in _get_label(self, label, axis)
 1057 def _get_label(self, label, axis: int):
 1058 # GH#5667 this will fail if the label is not present in the axis.
-> 1059 return self.obj.xs(label, axis=axis)
 1060
 1061 def _handle_lowerdim_multi_index_axis0(self, tup: Tuple):

C:\Anaconda\lib\site-packages\pandas\core\generic.py in xs(self, key, axis, level, drop_level)
 3489 loc, new_index = self.index.get_loc_level(key, drop_level=drop_level)
 3490 else:
-> 3491 loc = self.index.get_loc(key)
 3492
 3493 if isinstance(loc, np.ndarray):

C:\Anaconda\lib\site-packages\pandas\core\indexes\datetime.py in get_loc(self, key, method, tolerance)
 625 return Index.get_loc(self, key, method, tolerance)
 626 except KeyError as err:
--> 627 raise KeyError(orig_key) from err
 628
 629 def _maybe_cast_for_get_loc(self, key) -> Timestamp:

KeyError: '1960'

In [33]:

Get all rows for the month of Janaury(1959-01-01 - 1959-01-31).
female.loc['1959-01-01':'1959-01-31'][['Births']]

Out[33]:

Births	
Date	
1959-01-01	35
1959-01-02	32
1959-01-03	30
1959-01-04	31
1959-01-05	44
1959-01-06	29
1959-01-07	45
1959-01-08	43
1959-01-09	38
1959-01-10	27
1959-01-11	38
1959-01-12	33
1959-01-13	55
1959-01-14	47
1959-01-15	45
1959-01-16	37
1959-01-17	50
1959-01-18	43
1959-01-19	41
1959-01-20	52
1959-01-21	34
1959-01-22	53
1959-01-23	39
1959-01-24	32
1959-01-25	37
1959-01-26	43
1959-01-27	39
1959-01-28	35
1959-01-29	44
1959-01-30	38
1959-01-31	24

In [34]:

Total births in the month of January
female.loc['1959-01-01':'1959-01-31'][['Births']].sum()

Out[34]:

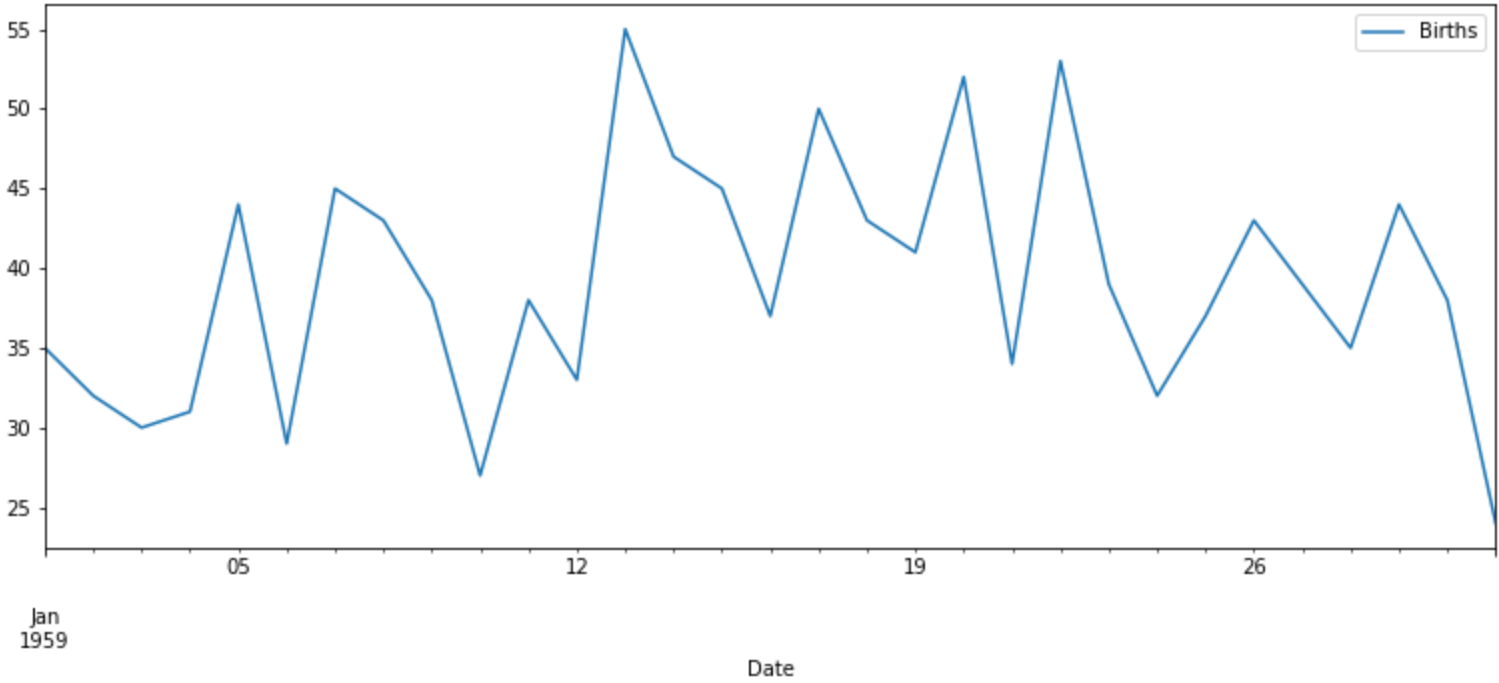
Births 1213
dtype: int64

In [35]:

plot line chart for January data using Pandas visualization
female.loc['1959-01-01':'1959-01-31'][['Births']].plot(figsize=(13,5))

Out[35]:

<AxesSubplot:xlabel='Date'>

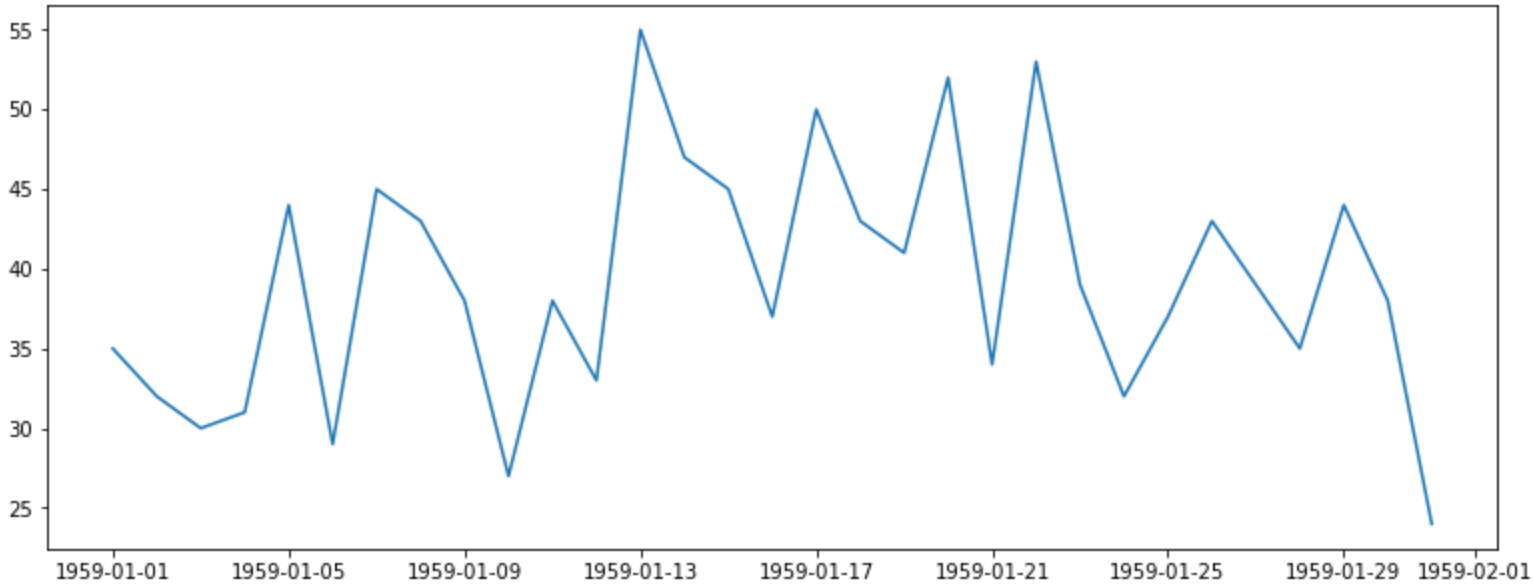


In [36]:

```
# plot line chart for January data using Matplotlib library
plt.figure(figsize=(13,5))
plt.plot(female.loc['1959-01-01':'1959-01-31']['Births'])
```

Out[36]: <Figure size 936x360 with 0 Axes>

Out[36]: <matplotlib.lines.Line2D at 0x1fffff43c70>



In [37]:

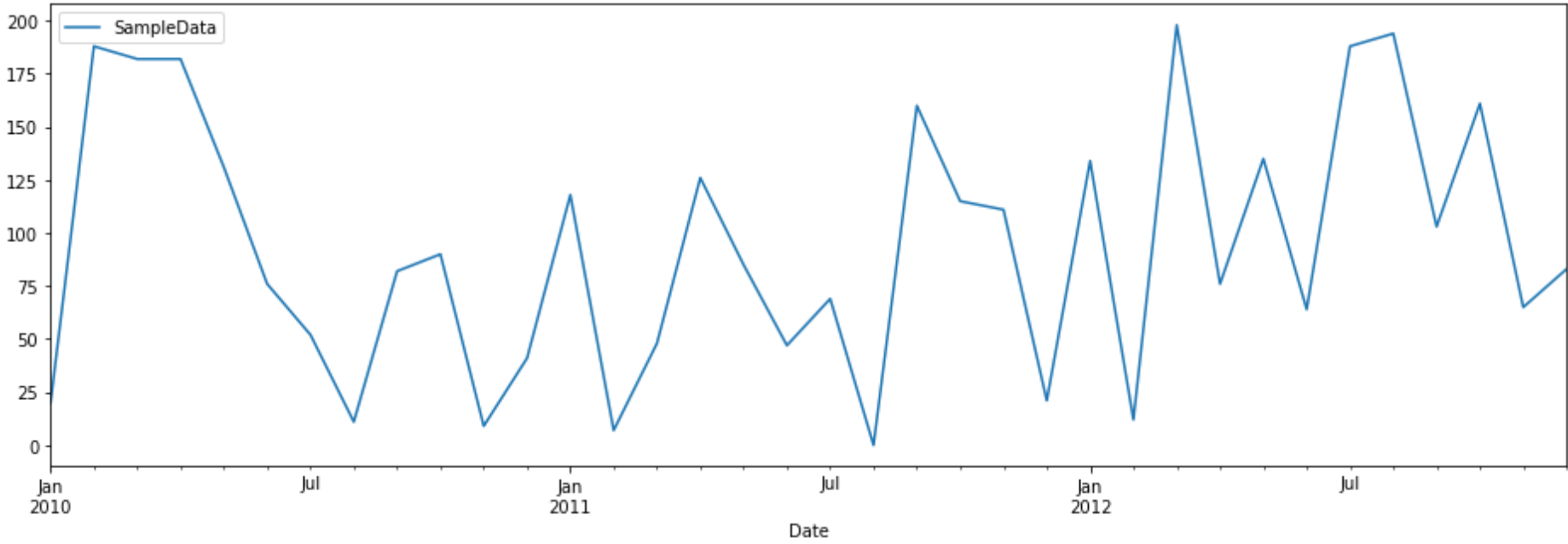
```
#Generate Test Dataset using date_range() and random.randint()
df = pd.DataFrame({'Date':pd.date_range('1/19/1920', periods = 1200, freq = 'M') , 'SampleData':np.random.randint(0,200,size=1200)})
df=df.set_index(['Date']) # Set Date column as index
df
df.loc['2010':'2012'].plot(figsize=(16,5)) # Plot line chart for data between 2010-2012
```

Out[37]:

SampleData	
Date	
1920-01-31	11
1920-02-29	62
1920-03-31	192
1920-04-30	152
1920-05-31	146
...	...
2019-08-31	198
2019-09-30	83
2019-10-31	29
2019-11-30	194
2019-12-31	51

1200 rows × 1 columns

Out[37]: <AxesSubplot:xlabel='Date'>



▼ End

In []:

