1.Import an XML file using python

1. "We have the following structure for books.xml and the code was designed to parse this particular XML file only" Gambardella, Matthew Computer 44.95 2000-10-01 An in-depth look at creating applications with XML.

In [52]:

```
import pandas as pd
import xml.etree.ElementTree as et

def parse_XML(xml_file, df_cols):

    """Parse the input XML file and store the result in a pandas
    DataFrame with the given columns.

    The first element of df_cols is supposed to be the identifier
    variable, which is an attribute of each node element in the
    XML data; other features will be parsed from the text content
    of each sub-element.
    *Args
    * xml_file" -> path of file
    *df_cols -> name of the node of the xml file
    """

    xtree = et.parse(xml_file)
    xroot = xtree.getroot()
    rows = []

#   iterating through each node
    for node in xroot:
        res = []
        for el in df_cols[0:]:
            if node is not None and node.find(el) is not None:
                res.append(node.find(el).text)
            else:
                res.append(None)
#                 dictionary implementation as column name as key and text  as valus
        rows.append({df_cols[i]: res[i]
                     for i, _ in enumerate(df_cols)})

    out_df = pd.DataFrame(rows, columns=df_cols)

    return out_df
```

```
# function
parse_XML("books.xml", ["author", "title", "genre", "price"])
```

Out[52]:

	author	title	genre	price
0	Gambardella, Matthew	XML Developer's Guide	Computer	44.95
1	Corets, Eva	Maeve Ascendant	Fantasy	5.95
2	Ralls, Kim	Midnight Rain	Fantasy	5.95
3	Randall, Cynthia	Lover Birds	Romance	4.95
4	Thurman, Paula	Splish Splash	Romance	4.95
5	Knorr, Stefan	Creepy Crawlies	Horror	4.95
6	Kress, Peter	Paradox Lost	Science Fiction	6.95
7	O'Brien, Tim	Microsoft .NET: The Programming Bible	Computer	36.95
8	Galos, Mike	Visual Studio 7: A Comprehensive Guide	Computer	49.95

In [ ]:

3.Import the breast cancer dataset from sklearn library and attach the target variable data to the features data and store it in a JSON file

In [53]:

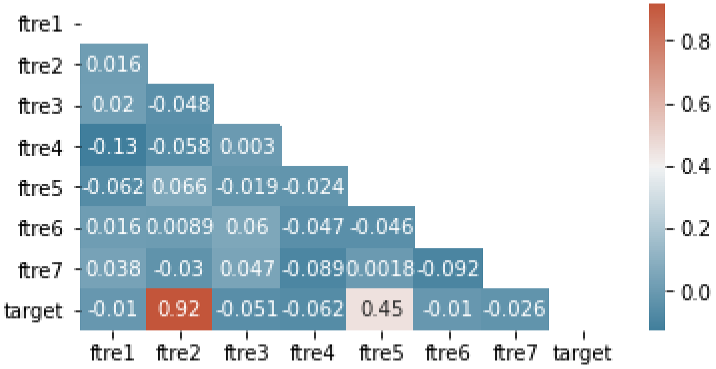
```
import sklearn.datasets
import pandas as pd
data = sklearn.datasets.load_breast_cancer()
# Load Sklearm datasets to pandas dataframe
df = pd.DataFrame(data.data, columns=data.feature_names)
# attach the target variable data to the features data
df['target'] =data.target
# store it in a JSON file
df.to_json('./breast_cancer.json', orient='index')
```

In [41]:

4. Make a regression dataset (500) with 7 features while having 4 informative features and store them on disk in a csv file

In [54]:

```
import numpy as np
from sklearn import datasets
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt
x,y = datasets.make_regression(n_samples=500,n_features=7, n_informative=2, random_state=42)
df = pd.DataFrame(x)
df.columns = ['ftre1','ftre2','ftre3','ftre4','ftre5','ftre6','ftre7']
df['target'] = y
corr =df.corr()
f,ax = plt.subplots(figsize=(6,3))
mask= np.triu(np.ones_like(corr,dtype=bool))
cmap = sns.diverging_palette(230,20,as_cmap=True)
sns.heatmap(corr, annot=True, mask =mask,cmap=cmap)
# Storing Dataframe into CSV.
df.to_csv('./regression_dataset.csv')
```



In [ ]: