Βασεις Δεδομένων II

Δημιουργία αρχείου year.

In [2]:

```
import io
year = [i+1960 for i in range(60)]
five_year_period = ["1960-1964","1965-1969","1970-1974","1975-1979","1980-1984","1985-1989","1990-1994","1995-199
9","2000-2004","2005-2009","2010-2014","2015-2019"]
ten_year_period = ["1960-1969","1970-1979","1980-1989","1990-1999","2000-2009","2010-2019"]
twenty_year_period = ["1960-1979","1980-1999","2000-2019"]
year
```

Out[2]:

```
[1960,
 1961,
 1962,
 1963,
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 2011,
 2012,
 2013,
 2014,
 2015,
 2016,
 2017,
 2018,
 2019]
```

In [23]:

```
five=[]
ten =[]
twenty=[]
for i in range(60):
    if(i+1960 >=2000 and i+1960 <=2019):
        twenty.append("2000-2019")
        if(i+1960>=2000 and i+1960<=2009):
            ten.append("2000-2009")
            if(i+1960>=2000 and i+1960<=2004):
                five.append("2000-2004")
            elif(i+1960>=2005 and i+1960<=2009):
                five.append("2005-2009")
        if(i+1960>=2010 and i+1960<=2019):
            ten.append("2010-2019")
            if(i+1960>=2010 and i+1960<=2014):
                five.append("2010-2014")
            elif(i+1960>=2015 and i+1960<=2019):
                five.append("2015-2019")
    elif(i+1960 >=1980 and i+1960 <=1999):
        twenty.append("1980-1999")
        if(i+1960>=1980 and i+1960<=1989):
            ten.append("1980-1989")
            if(i+1960>=1980 and i+1960<=1984):
                five.append("1980-1984")
            elif(i+1960>=1985 and i+1960<=1989):
                five.append("1985-1989")
        if(i+1960>=1990 and i+1960<=1999):
            ten.append("1990-1999")
            if(i+1960>=1990 and i+1960<=1994):
                five.append("1990-1994")
            elif(i+1960>=1995 and i+1960<=1999):
                five.append("1995-1999")
    elif(i+1960 >=1960 and i+1960 <=1979):
        twenty.append("1960-1979")
        if(i+1960>=1960 and i+1960<=1969):
            ten.append("1960-1969")
            if(i+1960>=1960 and i+1960<=1964):
                five.append("1960-1964")
            elif(i+1960>=1965 and i+1960<=1969):
                five.append("1965-1969")
        if(i+1960>=1970 and i+1960<=1979):
            ten.append("1970-1979")
            if(i+1960>=1970 and i+1960<=1974):
                five.append("1970-1974")
            elif(i+1960>=1975 and i+1960<=1979):
                five.append("1975-1979")
```

In [25]:

```
import pandas as pd
data= {"year":year, "five":five,"ten":ten,"twenty":twenty}
df = pd.DataFrame(data=data)
df
```

Out[25]:

	year	five	ten	twenty
0	1960	1960-1964	1960-1969	1960-1979
1	1961	1960-1964	1960-1969	1960-1979
2	1962	1960-1964	1960-1969	1960-1979
3	1963	1960-1964	1960-1969	1960-1979
4	1964	1960-1964	1960-1969	1960-1979
5	1965	1965-1969	1960-1969	1960-1979
6	1966	1965-1969	1960-1969	1960-1979
7	1967	1965-1969	1960-1969	1960-1979
8	1968	1965-1969	1960-1969	1960-1979
9	1969	1965-1969	1960-1969	1960-1979
10	1970	1970-1974	1970-1979	1960-1979
11	1971	1970-1974	1970-1979	1960-1979
12	1972	1970-1974	1970-1979	1960-1979
13	1973	1970-1974	1970-1979	1960-1979
14	1974	1970-1974	1970-1979	1960-1979

15	1975	1975-1979	1970-1979	1960-1979
16	1976	1975-1979	1970-1979	1960-1979
17	1977	1975-1979	1970-1979	1960-1979
18	1978	1975-1979	1970-1979	1960-1979
19	1979	1975-1979	1970-1979	1960-1979
20	1980	1980-1984	1980-1989	1980-1999
21	1981	1980-1984	1980-1989	1980-1999
22	1982	1980-1984	1980-1989	1980-1999
23	1983	1980-1984	1980-1989	1980-1999
24	1984	1980-1984	1980-1989	1980-1999
25	1985	1985-1989	1980-1989	1980-1999
26	1986	1985-1989	1980-1989	1980-1999
27	1987	1985-1989	1980-1989	1980-1999
28	1988	1985-1989	1980-1989	1980-1999
29	1989	1985-1989	1980-1989	1980-1999
30	1990	1990-1994	1990-1999	1980-1999
31	1991	1990-1994	1990-1999	1980-1999
32	1992	1990-1994	1990-1999	1980-1999
33	1993	1990-1994	1990-1999	1980-1999
34	1994	1990-1994	1990-1999	1980-1999
35	1995	1995-1999	1990-1999	1980-1999
36	1996	1995-1999	1990-1999	1980-1999
37	1997	1995-1999	1990-1999	1980-1999
38	1998	1995-1999	1990-1999	1980-1999
39	1999	1995-1999	1990-1999	1980-1999
40	2000	2000-2004	2000-2009	2000-2019
41	2001	2000-2004	2000-2009	2000-2019
42	2002	2000-2004	2000-2009	2000-2019
43	2003	2000-2004	2000-2009	2000-2019
44	2004	2000-2004	2000-2009	2000-2019
45	2005	2005-2009	2000-2009	2000-2019
46	2006	2005-2009	2000-2009	2000-2019
47	2007	2005-2009	2000-2009	2000-2019
48	2008	2005-2009	2000-2009	2000-2019
49	2009	2005-2009	2000-2009	2000-2019
50	2010	2010-2014	2010-2019	2000-2019
51	2011	2010-2014	2010-2019	2000-2019
52	2012	2010-2014	2010-2019	2000-2019
53	2013	2010-2014	2010-2019	2000-2019
54	2014	2010-2014	2010-2019	2000-2019
55	2015	2015-2019	2010-2019	2000-2019
56	2016	2015-2019	2010-2019	2000-2019
57	2017	2015-2019	2010-2019	2000-2019
58	2018	2015-2019	2010-2019	2000-2019
59	2019	2015-2019	2010-2019	2000-2019

In [26]:

```
df.to_csv("C:/Users/User/Desktop/[ΜΥΕ030ΠΛΕ045] Προχωρημένα Θέματα Τεχνολογίας και Εφαρμογών Βάσεων Δεδομένων/a/year.csv",index=False)
```

Δημιουργία αρχείου indicator.

In [26]:

```
import pandas as pd
import io

data = pd.read_csv("C:/Users/User/Desktop/[ΜΥΕ030ΠΛΕ045] Προχωρημένα Θέματα Τεχνολογίας και Εφαρμογών Βάσεων Δεδο
μένων/a/data_per_country.csv")

data
```

Out[26]:

	Country Name	Country Code	Indicator Name	Indicator Code	1960	1961	1962	1963	1964	1965	...	
0	Greece	GRC	Chemicals (% of value added in manufacturing)	NV.MNF.CHEM.ZS.UN	NaN	NaN	NaN	6.802491	6.656856	8.700563	...	7.7
1	United States	USA	Chemicals (% of value added in manufacturing)	NV.MNF.CHEM.ZS.UN	NaN	NaN	NaN	10.404051	10.582964	10.399327	...	16.3
2	Portugal	PRT	Chemicals (% of value added in manufacturing)	NV.MNF.CHEM.ZS.UN	NaN	NaN	NaN	9.332609	8.973807	9.413124	...	6.0
3	Mexico	MEX	Chemicals (% of value added in manufacturing)	NV.MNF.CHEM.ZS.UN	NaN	NaN	NaN	NaN	NaN	NaN	...	11.9
4	Japan	JPN	Chemicals (% of value added in manufacturing)	NV.MNF.CHEM.ZS.UN	NaN	NaN	NaN	10.664572	11.031209	11.286598	...	11.6
...	...	...	...	...	...	...	...	...	...	...	...	
95	Greece	GRC	CO2 emissions from electricity and heat produc...	EN.CO2.ETOT.ZS	26.912568	26.474128	27.171492	27.622015	27.568042	29.960784	...	55.1
96	Japan	JPN	CO2 emissions from electricity and heat produc...	EN.CO2.ETOT.ZS	32.668388	33.042806	34.614748	34.565993	34.582071	35.075397	...	51.7
97	Mexico	MEX	CO2 emissions from electricity and heat produc...	EN.CO2.ETOT.ZS	NaN	NaN	NaN	NaN	NaN	NaN	...	44.6
98	Portugal	PRT	CO2 emissions from electricity and heat produc...	EN.CO2.ETOT.ZS	9.046053	7.747489	11.111111	9.640103	13.244228	15.234822	...	40.6
99	United States	USA	CO2 emissions from electricity and heat produc...	EN.CO2.ETOT.ZS	27.635213	28.017193	28.325453	29.127992	29.138553	30.136187	...	48.2

100 rows × 65 columns

In [28]:

```
measurement = []
for i in range(100):
    for j in range(60):
        measurement.append(data.iloc[i][j+4])
measurement
```

Out[28]:

```
[nan,
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 9.91917863430984,
 8.67246088899925,
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...]

In [29]:

```
indicator = data[["Indicator Code","Indicator Name"]].drop_duplicates()
indicator
```

Out[29]:

	Indicator Code	Indicator Name
0	NV.MNF.CHEM.ZS.UN	Chemicals (% of value added in manufacturing)
10	NE.DAB.TOTL.ZS	Gross national expenditure (% of GDP)
20	NE.CON.GOVT.KD.ZG	General government final consumption expenditu...
30	NE.EXP.GNFS.KD.ZG	Exports of goods and services (annual % growth)
40	NV.MNF.TXTL.ZS.UN	Textiles and clothing (% of value added in man...
50	SP.POP.TOTL.MA.ZS	Population male (% of total population)
60	TM.VAL.AGRI.ZS.UN	Agricultural raw materials imports (% of merch...
70	TM.VAL.FUEL.ZS.UN	Fuel imports (% of merchandise imports)
80	EG.ELC.HYRO.ZS	Electricity production from hydroelectric sour...
90	EN.CO2.ETOT.ZS	CO2 emissions from electricity and heat produc...

In [17]:

```
indicator.to_csv("C:/Users/User/Desktop/[ΜΥΕ030ΠΛΕ045] Προχωρημένα Θέματα Τεχνολογίας και Εφαρμογών Βάσεων Δεδομένων/a/INDICATOR_new.csv",index=False)
```

Δημιουργία πίνακα Μ

In [30]:

```
import pandas as pd
import io

data_M = pd.read_csv("C:/Users/User/Desktop/[ΜΥΕ030ΠΛΕ045] Προχωρημένα Θέματα Τεχνολογίας και Εφαρμογών Βάσεων Δεδομένων/a/data_per_country.csv")

data_M
```

Out[30]:

	Country Name	Country Code	Indicator Name	Indicator Code	1960	1961	1962	1963	1964	1965	...	
0	Greece	GRC	Chemicals (% of value added in manufacturing)	NV.MNF.CHEM.ZS.UN	NaN	NaN	NaN	6.802491	6.656856	8.700563	...	7.7
1	United States	USA	Chemicals (% of value added in manufacturing)	NV.MNF.CHEM.ZS.UN	NaN	NaN	NaN	10.404051	10.582964	10.399327	...	16.3
2	Portugal	PRT	Chemicals (% of value added in manufacturing)	NV.MNF.CHEM.ZS.UN	NaN	NaN	NaN	9.332609	8.973807	9.413124	...	6.0
3	Mexico	MEX	Chemicals (% of value added in manufacturing)	NV.MNF.CHEM.ZS.UN	NaN	NaN	NaN	NaN	NaN	NaN	...	11.9
4	Japan	JPN	Chemicals (% of value added in manufacturing)	NV.MNF.CHEM.ZS.UN	NaN	NaN	NaN	10.664572	11.031209	11.286598	...	11.6
...	...	...	...	...	...	...	...	...	...	...	...	
95	Greece	GRC	CO2 emissions from electricity and heat produc...	EN.CO2.ETOT.ZS	26.912568	26.474128	27.171492	27.622015	27.568042	29.960784	...	55.1
96	Japan	JPN	CO2 emissions from electricity and heat produc...	EN.CO2.ETOT.ZS	32.668388	33.042806	34.614748	34.565993	34.582071	35.075397	...	51.7
97	Mexico	MEX	CO2 emissions from electricity and heat produc...	EN.CO2.ETOT.ZS	NaN	NaN	NaN	NaN	NaN	NaN	...	44.6
98	Portugal	PRT	CO2 emissions from electricity and heat produc...	EN.CO2.ETOT.ZS	9.046053	7.747489	11.111111	9.640103	13.244228	15.234822	...	40.6
99	United States	USA	CO2 emissions from electricity and heat produc...	EN.CO2.ETOT.ZS	27.635213	28.017193	28.325453	29.127992	29.138553	30.136187	...	48.2

100 rows × 65 columns

In [31]:

```
import numpy as np
M=pd.DataFrame(np.repeat(data_M[["Country Code","Indicator Code"]].values,60,axis=0))
M.columns = data_M[["Country Code","Indicator Code"]].columns
M
```

Out[31]:

	Country Code	Indicator Code
0	GRC	NV.MNF.CHEM.ZS.UN
1	GRC	NV.MNF.CHEM.ZS.UN
2	GRC	NV.MNF.CHEM.ZS.UN
3	GRC	NV.MNF.CHEM.ZS.UN
4	GRC	NV.MNF.CHEM.ZS.UN
...	...	...
5995	USA	EN.CO2.ETOT.ZS
5996	USA	EN.CO2.ETOT.ZS
5997	USA	EN.CO2.ETOT.ZS
5998	USA	EN.CO2.ETOT.ZS
5999	USA	EN.CO2.ETOT.ZS

6000 rows × 2 columns

In [32]:

```
YEAR=[i+1960 for i in range(60)]*100
len(YEAR)
```

Out[32]:

```
6000
```

In [33]:

```
M["YEAR"] = YEAR
```

In [34]:

```
M["Measurement"] = measurement
```

In [35]:

```
M
```

Out[35]:

	Country Code	Indicator Code	YEAR	Measurement
0	GRC	NV.MNF.CHEM.ZS.UN	1960	NaN
1	GRC	NV.MNF.CHEM.ZS.UN	1961	NaN
2	GRC	NV.MNF.CHEM.ZS.UN	1962	NaN
3	GRC	NV.MNF.CHEM.ZS.UN	1963	6.802491
4	GRC	NV.MNF.CHEM.ZS.UN	1964	6.656856
...	...	...	...	...
5995	USA	EN.CO2.ETOT.ZS	2015	NaN
5996	USA	EN.CO2.ETOT.ZS	2016	NaN
5997	USA	EN.CO2.ETOT.ZS	2017	NaN
5998	USA	EN.CO2.ETOT.ZS	2018	NaN
5999	USA	EN.CO2.ETOT.ZS	2019	NaN

6000 rows × 4 columns

In [25]:

```
M.to_csv("C:/Users/User/Desktop/[ΜΥΕ030ΠΛΕ045] Προχωρημένα Θέματα Τεχνολογίας και Εφαρμογών Βάσεων Δεδομένων/a/M.csv",index=False)
```