

In [56]:

```
print('Name : ')\nprint('Plot a line graph to find the average cholestrol found in various age groups')\nprint('Plot a line graph to find the correlation between systolic and diastolic blood pr
```

Name :

Plot a line graph to find the average cholestrol found in various age groups

Plot a line graph to find the correlation between systolic and diastolic blood pressure found in various age groups

In [57]:

```
#Task 1\n#Import all the libraries and read cardiovascular.csv\nimport numpy as np\nimport pandas as pd\nimport matplotlib.pyplot as plt\n\ndf = pd.read_csv("cardiovascular.csv")\ndf
```

Out[57]:

	Unnamed: 0	id	age	gender	height	weight	systolic_blood_pressure	diastolic_bl
0	0	0	50.0	2	168	62.0	110	
1	1	1	55.0	1	156	85.0	140	
2	2	2	51.0	1	165	64.0	130	
3	3	3	48.0	2	169	82.0	150	
4	4	4	47.0	1	156	56.0	100	
...
69995	69995	99993	52.0	2	168	76.0	120	
69996	69996	99995	61.0	1	158	126.0	140	
69997	69997	99996	52.0	2	183	105.0	180	
69998	69998	99998	61.0	1	163	72.0	135	
69999	69999	99999	56.0	1	170	72.0	120	

70000 rows × 14 columns



Average cholestrol found in various age groups

In [58]:

```
#Task 2
#Group by age and find the average cholesterol and make a dataframe out of it
group_by_age = df.groupby("age")["cholesterol"].mean().reset_index()
group_by_age
```

Out[58]:

	age	cholesterol
0	29.0	1.000000
1	30.0	1.000000
2	39.0	1.185955
3	40.0	1.173243
4	41.0	1.209669
5	42.0	1.167137
6	43.0	1.264894
7	44.0	1.204756
8	45.0	1.261620
9	46.0	1.220308
10	47.0	1.308147
11	48.0	1.246273
12	49.0	1.316945
13	50.0	1.280473
14	51.0	1.346496
15	52.0	1.315645
16	53.0	1.380041
17	54.0	1.331761
18	55.0	1.420932
19	56.0	1.396729
20	57.0	1.469072
21	58.0	1.415078
22	59.0	1.511465
23	60.0	1.443125
24	61.0	1.559384
25	62.0	1.450205
26	63.0	1.621345
27	64.0	1.463649

In [59]:

```

#Task 3
#Plot a pie graph for various age group and their cholesterol
label = group_by_age["age"]
value = group_by_age["cholesterol"]

plt.subplots(figsize=(19,8))

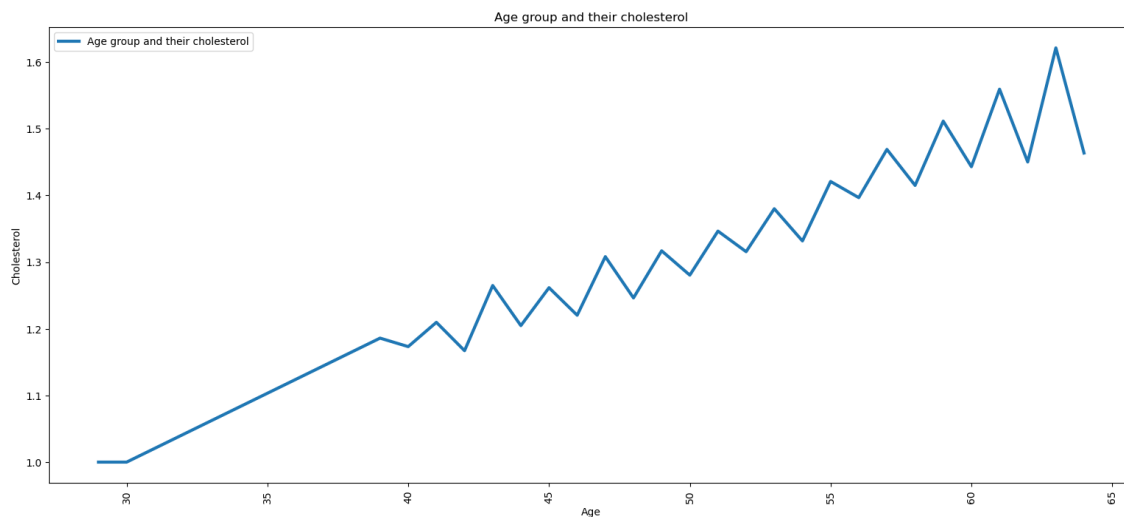
plt.plot(label, value, label="Age group and their cholesterol", linewidth=3.0)

plt.xlabel("Age")
plt.xticks(rotation="vertical")
plt.ylabel("Cholesterol")
plt.title("Age group and their cholesterol")
plt.legend()

```

Out[59]:

<matplotlib.legend.Legend at 0x1ff1f299550>



Conclusion -

Correlation between systolic and diastolic blood pressure

In [60]:

```

# Diastolic blood pressure - is the pressure in the arteries when the heart rests between
# Systolic blood pressure - the pressure in your arteries when your heart beats

#predefine code for image
from IPython.display import Image
Image(filename='logo.png')
#predefine code end

```

Out[60]:



In [61]:

```
#Task 4
```

```
#Group by age and find maximum systolic blood pressure and create a dataframe out of it  
group_by_age_systolic = df.groupby("age")["systolic_blood_pressure"].max().reset_index()  
group_by_age_systolic
```

Out[61]:

	age	systolic_blood_pressure
0	29.0	120
1	30.0	110
2	39.0	909
3	40.0	2000
4	41.0	902
5	42.0	210
6	43.0	14020
7	44.0	907
8	45.0	906
9	46.0	14020
10	47.0	16020
11	48.0	907
12	49.0	906
13	50.0	13010
14	51.0	11020
15	52.0	210
16	53.0	1620
17	54.0	14020
18	55.0	309
19	56.0	1130
20	57.0	11500
21	58.0	14020
22	59.0	1400
23	60.0	1300
24	61.0	907
25	62.0	906
26	63.0	13010
27	64.0	1420

In [62]:

```
#Task 5
```

```
#Group by age and find maximum diastolic blood pressure and create a dataframe out of it  
random_group_group = df.groupby("age")["diastolic_blood_pressure"].max().reset_index()  
random_group_group
```

Out[62]:

	age	diastolic_blood_pressure
0	29.0	80
1	30.0	70
2	39.0	8500
3	40.0	1100
4	41.0	8000
5	42.0	1110
6	43.0	8099
7	44.0	1100
8	45.0	1100
9	46.0	2088
10	47.0	1200
11	48.0	1100
12	49.0	10000
13	50.0	9011
14	51.0	1200
15	52.0	10000
16	53.0	9100
17	54.0	8079
18	55.0	8044
19	56.0	8099
20	57.0	10000
21	58.0	9011
22	59.0	1200
23	60.0	9800
24	61.0	1200
25	62.0	1100
26	63.0	11000
27	64.0	1200

In [63]:

```
#Task 6
#Plot a line graph to show a Correlation between systolic and diastolic blood pressure
label = random_group_group["age"]
value = random_group_group["diastolic_blood_pressure"]

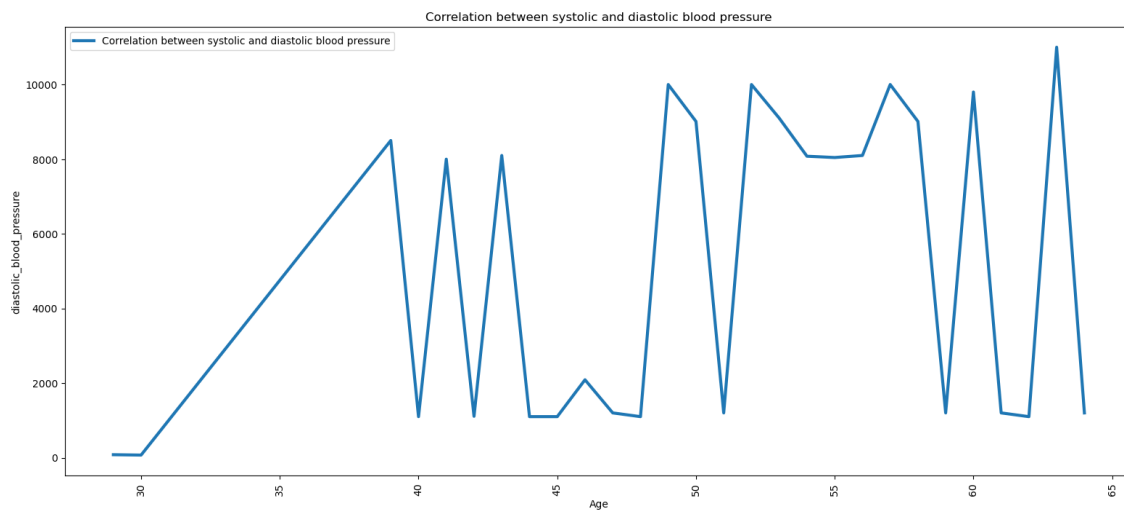
plt.subplots(figsize=(19,8))

plt.plot(label, value, label="Correlation between systolic and diastolic blood pressure")

plt.xlabel("Age")
plt.xticks(rotation="vertical")
plt.ylabel("diastolic_blood_pressure")
plt.title("Correlation between systolic and diastolic blood pressure")
plt.legend()
```

Out[63]:

<matplotlib.legend.Legend at 0x1ff1e45aeb0>



Conclusion -

In []: