second project : Medical Appointment No Shows

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`Describtion project`

- this dataset collects inforamtiom from 100k medical appointments in Brazil and if you want whatch dataset Click here (https://www.kaggle.com/joniarroba/noshowappointments)
- And now we ned ask qustion for this dataset:

1- Questions for the dataset

- What is the gender that does not show up much on a date?
- How Age are those who do not attend their appointment

2- Data Wranngling :

In [1]:

```
 # import libraries

import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
```

In [2]:

```
# Load Dataset
appointments =pd.read_csv('appointments.csv',index_col=False)

appointments.head(2)
```

Out[2]:

	PatientId	AppointmentID	Gender	ScheduledDay	AppointmentDay	Age	Neighbourho
0	2.987250e+13	5642903	F	2016-04-29T18:38:08Z	2016-04-29T00:00:00Z	62	JARDIM I PENI
1	5.589980e+14	5642503	M	2016-04-29T16:08:27Z	2016-04-29T00:00:00Z	56	JARDIM I PENI

In [3]:

```
# check the data for any missing dataset
appointments.isnull().sum()
```

Out[3]:

```
PatientId         0
AppointmentID     0
Gender            0
ScheduledDay      0
AppointmentDay    0
Age               0
Neighbourhood     0
Scholarship       0
Hipertension      0
Diabetes          0
Alcoholism        0
Handcap           0
SMS_received      0
No-show           0
dtype: int64
```

Gread there are no missing Value

In [4]:

```
#check the data for duplicated:
appointments.duplicated().sum()
```

Out[4]:

```
0
```

I will droping columns `PatientId` , `AppointmentID` because it is not useful for the questions dataset

In [5]:

```
# drop columns : patientId , AppointmentId

appointments.drop(['PatientId','AppointmentID'] , axis=1 , inplace=True)
```

In [6]:

```
# here I will change  the type AppointmrntDay for the date
appointments['AppointmentDay']=pd.to_datetime(appointments['AppointmentDay'])
appointments['AppointmentDay'] = pd.to_datetime(appointments.AppointmentDay.dt.date)
```

In [7]:

```
appointments['AppointmentDay'].head()
```

Out[7]:

```
0   2016-04-29
1   2016-04-29
2   2016-04-29
3   2016-04-29
4   2016-04-29
Name: AppointmentDay, dtype: datetime64[ns]
```

And I need do change the value of No-show number ,I will do 1 for Yes and 0 for No

In [8]:

```
# change the colume  No -show

appointments['No-show'] = appointments['No-show'].map({'Yes': 1, 'No': 0})
```

In [9]:

```
appointments.head()
```

Out[9]:

	Gender	ScheduledDay	AppointmentDay	Age	Neighbourhood	Scholarship	Hipertension
0	F	2016-04-29T18:38:08Z	2016-04-29	62	JARDIM DA PENHA	0	1
1	M	2016-04-29T16:08:27Z	2016-04-29	56	JARDIM DA PENHA	0	0
2	F	2016-04-29T16:19:04Z	2016-04-29	62	MATA DA PRAIA	0	0
3	F	2016-04-29T17:29:31Z	2016-04-29	8	PONTAL DE CAMBURI	0	0
4	F	2016-04-29T16:07:23Z	2016-04-29	56	JARDIM DA PENHA	0	1

I think finshed the wornagling and I think doing great will

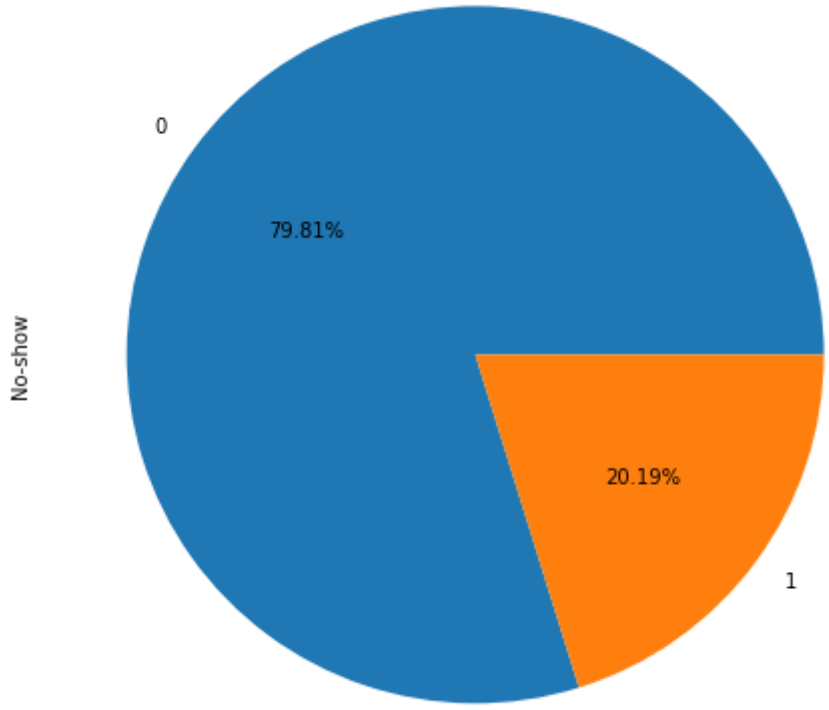
Here Exploration Data

In [10]:

```
# I will check that  for the colum No-show , '0' if the patient showed up , '1' if the
 patient  no showed up
appointments['No-show'].value_counts().plot(kind='pie',figsize=(8,8),autopct='%1.2f%%')
```

Out[10]:

```
<matplotlib.axes._subplots.AxesSubplot at 0x16a75f51898>
```



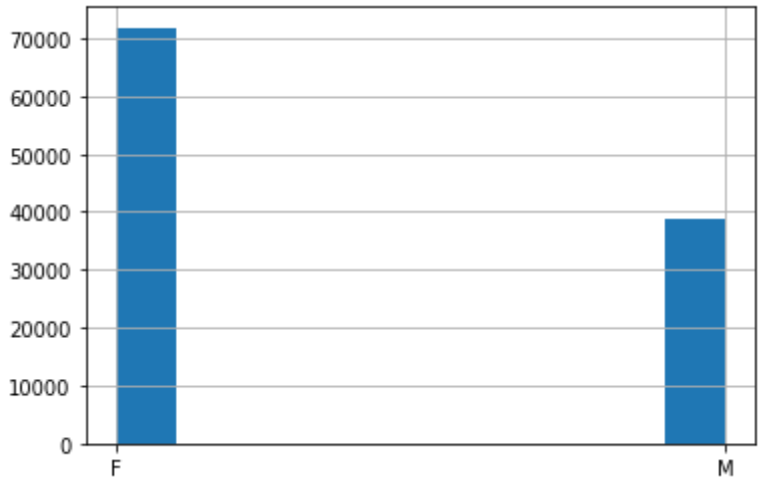
the color blue they do show in appointment day , I think that nice because more show in appointment day

In [25]:

```
## I will check that whick is more female or male
appointments['Gender'].hist()
```

Out[25]:

```
<matplotlib.axes._subplots.AxesSubplot at 0x29d1591e470>
```



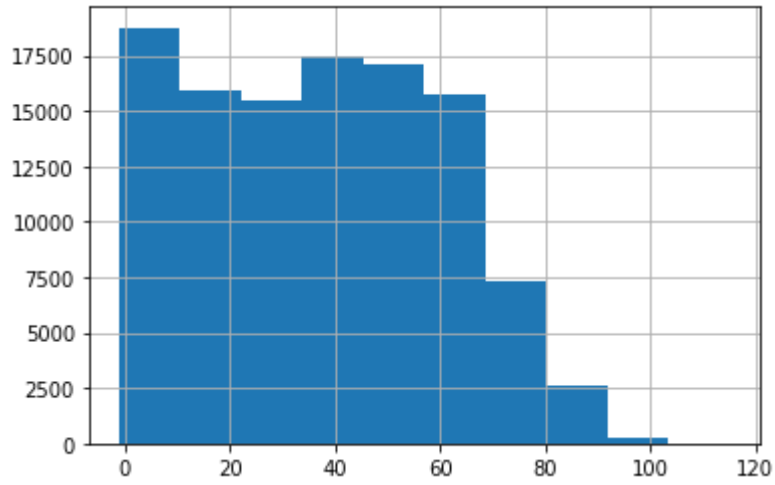
here we see hafe of more appointments Day for Female

In [27]:

```
# here , I will show the Age
appointments['Age'].hist()
```

Out[27]:

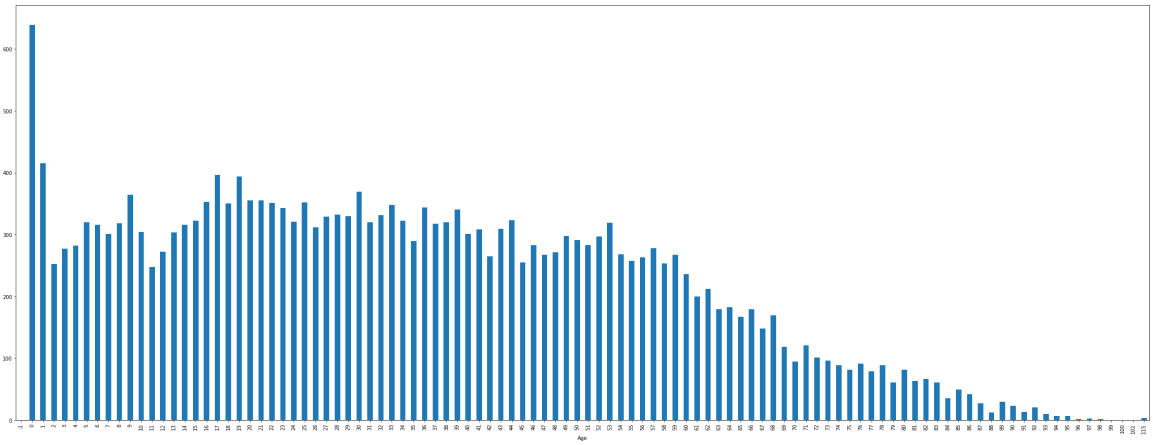
```
<matplotlib.axes._subplots.AxesSubplot at 0x29d159a2240>
```



here the Age is more Reasonable

In [30]:

```
# here I doing groupby Age with No-Show
Age=appointments.groupby('Age').sum()['No-show'].plot.bar(figsize=(40,15))
```



-here almost young do not go appointment

-I think young not go in appointment because very in work and busy for the life

In [41]:

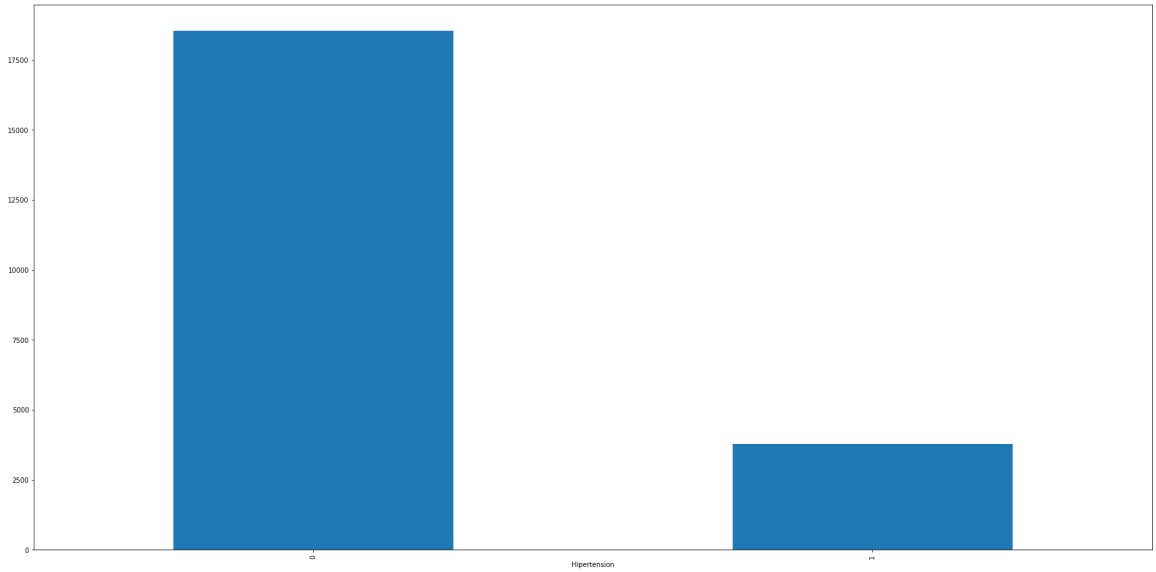
```
def collection (x):
    appointments.groupby (x).sum()['No-show'].plot.bar(figsize=(30,15));



    return x
```

In [42]:

```
collection('Hipertension')
```

Out[42]:

'Hipertension'

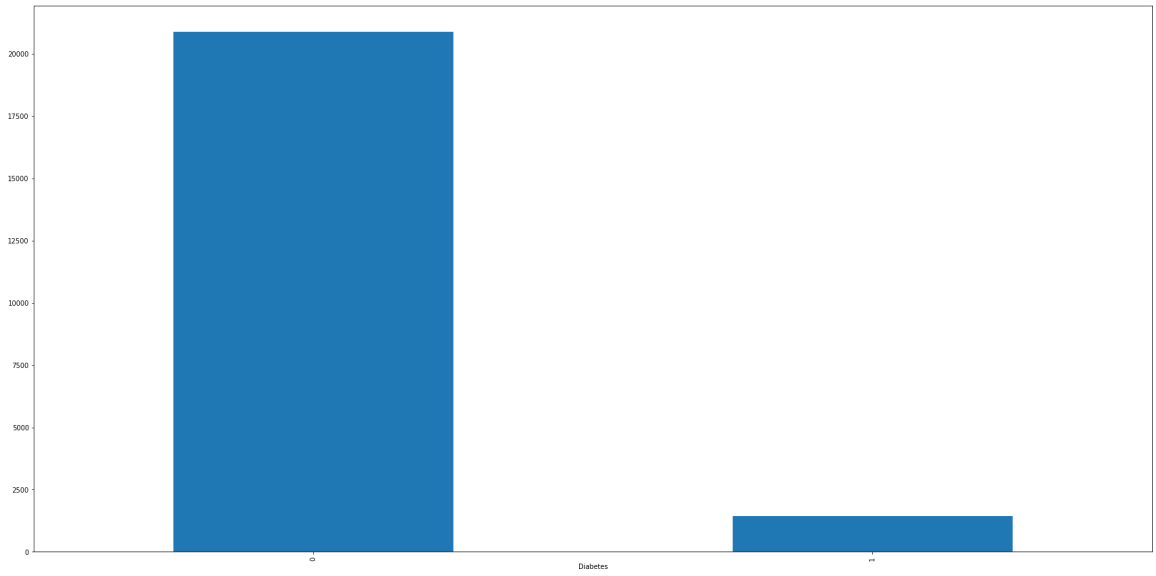


In [43]:

```
collection('Diabetes')
```

Out[43]:

'Diabetes'

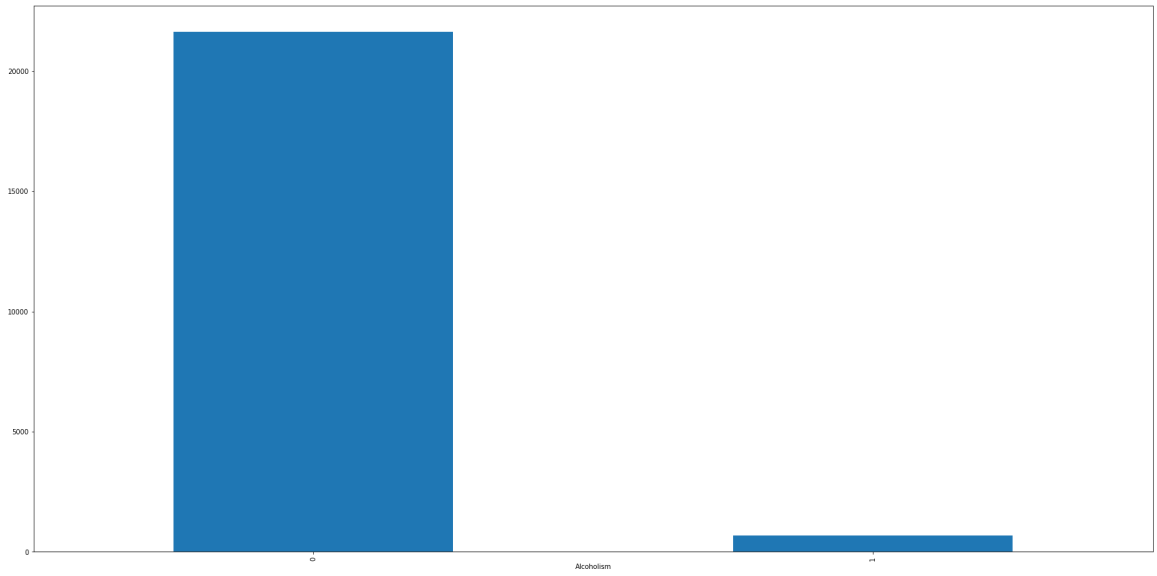


In [44]:

```
collection('Alcoholism')
```

Out[44]:

'Alcoholism'

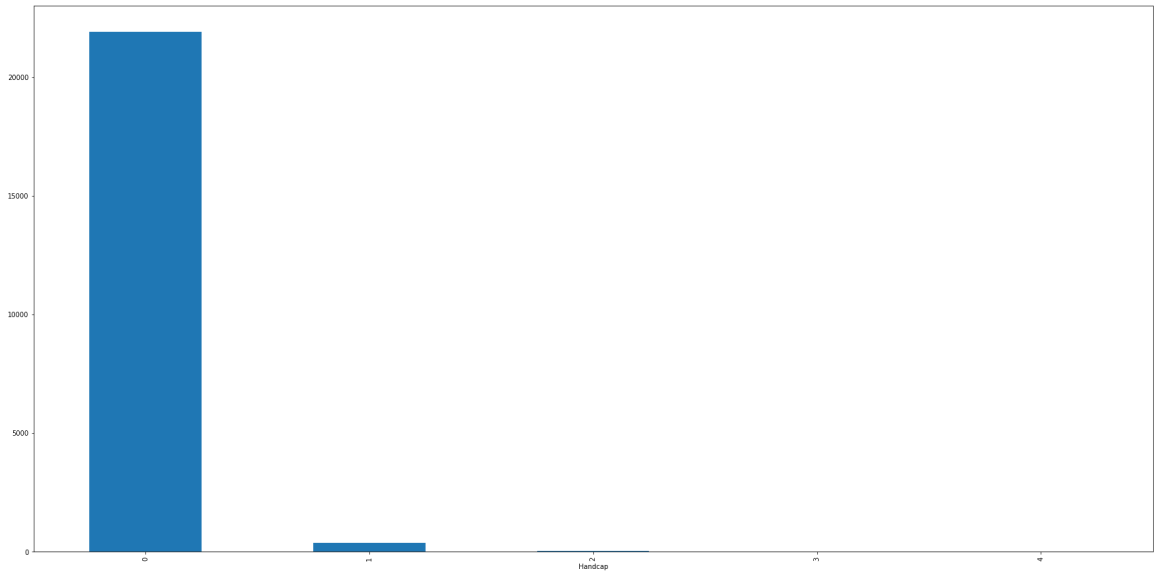


In [45]:

```
collection('Handcap')
```

Out[45]:

'Handcap'



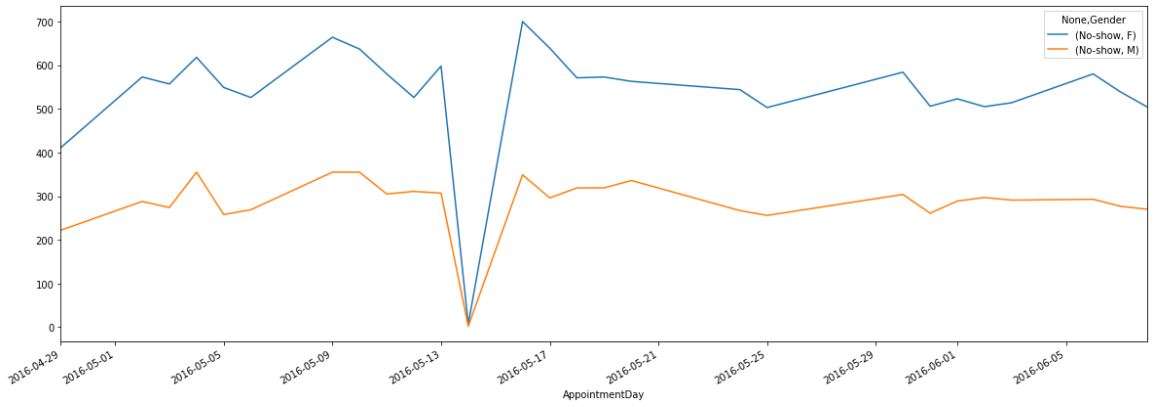
here if you look plt (`Hipertension` , `Diabetes` , `Alcoholism` , `Handcap`) here is almost they are go appintment

In [58]:

```
df = appointments.groupby(['AppointmentDay','Gender']).sum()[['No-show']]
# plot data
fig, ax = plt.subplots(figsize=(20,7))
# use unstack()
df.unstack().plot(ax=ax)
```

Out[58]:

```
<matplotlib.axes._subplots.AxesSubplot at 0x29d163e0400>
```



if we look the plant we see in female more no show in appointment Day

The source that helped me be for doing this graphic it is site :
[https://scentellegher.github.io/programming/2017/07/15/pandas-groupby-multiple-columns-plot.html (https://scentellegher.github.io/programming/2017/07/15/pandas-groupby-multiple-columns-plot.html)]

Conclusions

- finally this phase for data analysis .
- Most who do not go to their appointment the young .
- I think should be We doing awareness of the importance of health .
- Most of them are women who do not go to the appointment I expect because they work at home or do not have a car .

In [ ]: