In [53]:
```
import pandas as pd
df=pd.read_csv("FOOD_MUSIC.csv")
```

In [54]:
```
df
```

Out[54]:

	Name	GENDER	AGE	FOOD	MUSIC
0	Swati Konar	Female	19	NON-VEG	CLASSIC
1	Sumanta karmakar	MALE	20	NON-VEG	ROCK
2	Ananya Das	Female	20	NON-VEG	ROCK
3	DEBASHISH MISHRA	MALE	20	VEG	ROCK
4	Habi Ullah	MALE	29	NON-VEG	Arabic
5	Apurba Sarkar	MALE	21	NON-VEG	CLASSIC
6	Geet Roy	MALE	19	VEG	HIPHOP
7	Rajat Poddar	MALE	24	NON-VEG	EDM
8	Snehasish Karmakar	MALE	21	NON-VEG	HIPHOP
9	Anirban Ghosh	MALE	19	NON-VEG	ROCK
10	Prosun Futta	MALE	21	NON-VEG	CLASSIC
11	Shuvadip Dutta	MALE	18	NON-VEG	CLASSIC
12	Faizal Khan	MALE	20	NON-VEG	Lofi
13	Goutam Mondal	MALE	23	NON-VEG	ROCK
14	Partho	MALE	30	NON-VEG	ROCK
15	Suvasish Jana	MALE	20	NON-VEG	CLASSIC
16	Dinesh kundo	MALE	21	VEG	HIPHOP
17	Jeet Bhattacharjee	MALE	22	NON-VEG	CLASSIC
18	Tushar Kanti Naskar	MALE	22	NON-VEG	HIPHOP

	Name	GENDER	AGE	FOOD	MUSIC
19	Subhadip Samanta	MALE	20	Both	CLASSIC
20	PRAMIT PRAMANICK	MALE	19	NON-VEG	CLASSIC
21	Jayita Pal	Female	22	NON-VEG	CLASSIC
22	Pradipta banerjee	MALE	24	NON-VEG	CLASSIC
23	AVIJIT SANI	MALE	20	NON-VEG	JAZZ
24	Subhajit bey	MALE	14	NON-VEG	ROCK
25	Saheli Mondal	Female	31	NON-VEG	CLASSIC
26	MD ALIF NOOR REZA	MALE	24	NON-VEG	ROCK
27	Nayan Bose	MALE	20	NON-VEG	CLASSIC
28	Sushil kumar Panjiyara	MALE	20	NON-VEG	CLASSIC
29	PRITAM BERA	MALE	19	Both	CLASSIC
30	Kushal Kayal	MALE	20	NON-VEG	CLASSIC
31	Sanju Das	MALE	20	NON-VEG	CLASSIC
32	Md Sakib Reja	MALE	20	VEG	ROCK
33	Sayak kar	MALE	20	NON-VEG	CLASSIC
34	Narayan Kumar bhandari	MALE	22	VEG	HIPHOP
35	Sankhadip das	MALE	22	NON-VEG	CLASSIC
36	Goutam Bej	MALE	21	NON-VEG	CLASSIC
37	Shahwez Ahmad	MALE	19	NON-VEG	JAZZ
38	Chaitali Majumder	Female	22	NON-VEG	CLASSIC
39	Priyanka Maity	Female	22	NON-VEG	CLASSIC
40	Alapan Ganguly	MALE	22	NON-VEG	CLASSIC
41	Pritam gharami	MALE	23	NON-VEG	CLASSIC
42	Pallabi Roy	Female	20	NON-VEG	ROCK

	Name	GENDER	AGE	FOOD	MUSIC
43	ATANU ROY	MALE	21	NON-VEG	CLASSIC
44	Sneha Debnath	Female	24	NON-VEG	CLASSIC
45	Saurabh Kumar Singh	MALE	23	NON-VEG	Electronics
46	Nilima Dey	Female	26	Both	CLASSIC
47	Raju Sarkar	MALE	28	NON-VEG	HIPHOP
48	Somu Sarkar	MALE	30	VEG	JAZZ
49	Jogamaya Sarkar	Female	30	VEG	CLASSIC
50	Arijit Chakraborty	MALE	22	NON-VEG	ROCK
51	Aryan Biswas	MALE	21	NON-VEG	HIPHOP
52	Pritom saha	MALE	21	NON-VEG	ROCK
53	Sabikun Nahar	Female	21	NON-VEG	CLASSIC
54	Munmun Ghosh	Female	22	NON-VEG	CLASSIC
55	Amrito Roy	MALE	22	NON-VEG	CLASSIC

In [55]:
```
df['MUSIC'].value_counts()
```

Out[55]:
```
CLASSIC         30
ROCK            12
HIPHOP           7
JAZZ             3
Arabic           1
EDM              1
Lofi             1
Electronics      1
Name: MUSIC, dtype: int64
```

In [56]:
```
df.keys()
```

Out[56]:
```
Index(['Name', 'GENDER', 'AGE', 'FOOD', 'MUSIC'], dtype='object')
```

In [57]:
```
df.head
```

Out[57]:
```
<bound method NDFrame.head of                         Name  GENDER  AGE     FOOD         MUSIC
0               Swati Konar  Female   19  NON-VEG       CLASSIC
1          Sumanta karmakar    MALE   20  NON-VEG          ROCK
2               Ananya Das  Female   20  NON-VEG          ROCK
3          DEBASHISH MISHRA    MALE   20     VEG           ROCK
4                Habi Ullah    MALE   29  NON-VEG        Arabic
5             Apurba Sarkar    MALE   21  NON-VEG       CLASSIC
6                 Geet Roy    MALE   19     VEG         HIPHOP
7              Rajat Poddar    MALE   24  NON-VEG           EDM
8       Snehasish Karmakar     MALE   21  NON-VEG        HIPHOP
9             Anirban Ghosh    MALE   19  NON-VEG          ROCK
10             Prosun Futta    MALE   21  NON-VEG       CLASSIC
11          Shuvadip Dutta     MALE   18  NON-VEG       CLASSIC
12             Faizal Khan     MALE   20  NON-VEG          Lofi
13           Goutam Mondal     MALE   23  NON-VEG          ROCK
14                   Partho    MALE   30  NON-VEG          ROCK
15            Suvasish Jana    MALE   20  NON-VEG       CLASSIC
16             Dinesh kundo    MALE   21     VEG         HIPHOP
17     Jeet Bhattacharjee      MALE   22  NON-VEG       CLASSIC
18     Tushar Kanti Naskar     MALE   22  NON-VEG        HIPHOP
19         Subhadip Samanta    MALE   20    Both        CLASSIC
20        PRAMIT PRAMANICK     MALE   19  NON-VEG       CLASSIC
21              Jayita Pal   Female   22  NON-VEG       CLASSIC
22       Pradipta banerjee     MALE   24  NON-VEG       CLASSIC
23              AVIJIT SANI    MALE   20  NON-VEG          JAZZ
24             Subhajit bey    MALE   14  NON-VEG          ROCK
25           Saheli Mondal   Female   31  NON-VEG       CLASSIC
26       MD ALIF NOOR REZA     MALE   24  NON-VEG          ROCK
27              Nayan Bose     MALE   20  NON-VEG       CLASSIC
28  Sushil kumar Panjiyara     MALE   20  NON-VEG       CLASSIC
29              PRITAM BERA    MALE   19     Both       CLASSIC
30            Kushal Kayal     MALE   20  NON-VEG       CLASSIC
31                Sanju Das    MALE   20  NON-VEG       CLASSIC
32            Md Sakib Reja    MALE   20     VEG          ROCK
33               Sayak kar     MALE   20  NON-VEG       CLASSIC
34  Narayan Kumar bhandari     MALE   22     VEG         HIPHOP
35             Sankhadip das    MALE   22  NON-VEG       CLASSIC
36               Goutam Bej     MALE   21  NON-VEG       CLASSIC
37           Shahwez Ahmad     MALE   19  NON-VEG          JAZZ
38         Chaitali Majumder  Female   22  NON-VEG       CLASSIC
```

```
39          Priyanka Maity   Female   22  NON-VEG       CLASSIC
40          Alapan Ganguly     MALE   22  NON-VEG       CLASSIC
41           Pritam gharami    MALE   23  NON-VEG       CLASSIC
42             Pallabi Roy   Female   20  NON-VEG          ROCK
43                ATANU ROY    MALE   21  NON-VEG       CLASSIC
44           Sneha Debnath   Female   24  NON-VEG       CLASSIC
45     Saurabh Kumar Singh     MALE   23  NON-VEG  Electronics
46              Nilima Dey  Female   26     Both       CLASSIC
47             Raju Sarkar    MALE   28  NON-VEG        HIPHOP
48             Somu Sarkar    MALE   30      VEG          JAZZ
49          Jogamaya Sarkar  Female   30      VEG       CLASSIC
50      Arijit Chakraborty     MALE   22  NON-VEG          ROCK
51            Aryan Biswas     MALE   21  NON-VEG        HIPHOP
52             Pritom saha    MALE   21  NON-VEG          ROCK
53          Sabikun Nahar   Female   21  NON-VEG       CLASSIC
54           Munmun Ghosh   Female   22  NON-VEG       CLASSIC
55              Amrito Roy    MALE   22  NON-VEG       CLASSIC>
```

In [58]:
```
df.head()
```

Out[58]:

	Name	GENDER	AGE	FOOD	MUSIC
0	Swati Konar	Female	19	NON-VEG	CLASSIC
1	Sumanta karmakar	MALE	20	NON-VEG	ROCK
2	Ananya Das	Female	20	NON-VEG	ROCK
3	DEBASHISH MISHRA	MALE	20	VEG	ROCK
4	Habi Ullah	MALE	29	NON-VEG	Arabic

In [59]:
```
df.sample(10)
```

Out[59]:

	Name	GENDER	AGE	FOOD	MUSIC
28	Sushil kumar Panjiyara	MALE	20	NON-VEG	CLASSIC
51	Aryan Biswas	MALE	21	NON-VEG	HIPHOP
45	Saurabh Kumar Singh	MALE	23	NON-VEG	Electronics

	Name	GENDER	AGE	FOOD	MUSIC
50	Arijit Chakraborty	MALE	22	NON-VEG	ROCK
15	Suvasish Jana	MALE	20	NON-VEG	CLASSIC
18	Tushar Kanti Naskar	MALE	22	NON-VEG	HIPHOP
30	Kushal Kayal	MALE	20	NON-VEG	CLASSIC
46	Nilima Dey	Female	26	Both	CLASSIC
36	Goutam Bej	MALE	21	NON-VEG	CLASSIC
22	Pradipta banerjee	MALE	24	NON-VEG	CLASSIC

In [60]:
```
df.describe()
```

Out[60]:

	AGE
count	56.000000
mean	21.892857
std	3.279016
min	14.000000
25%	20.000000
50%	21.000000
75%	22.250000
max	31.000000

In [61]:
```
df.shape
```

Out[61]:
```
(56, 5)
```

In [62]:
```
df.values
```

Out[62]:
```
array([['Swati Konar', 'Female', 19, 'NON-VEG', 'CLASSIC'],
       ['Sumanta karmakar', 'MALE', 20, 'NON-VEG', 'ROCK'],
       ['Ananya Das ', 'Female', 20, 'NON-VEG', 'ROCK'],
       ['DEBASHISH MISHRA', 'MALE', 20, 'VEG', 'ROCK'],
       ['Habi Ullah', 'MALE', 29, 'NON-VEG', 'Arabic'],
       ['Apurba Sarkar ', 'MALE', 21, 'NON-VEG', 'CLASSIC'],
       ['Geet Roy', 'MALE', 19, 'VEG', 'HIPHOP'],
       ['Rajat Poddar', 'MALE', 24, 'NON-VEG', 'EDM'],
       ['Snehasish Karmakar ', 'MALE', 21, 'NON-VEG', 'HIPHOP'],
       ['Anirban Ghosh', 'MALE', 19, 'NON-VEG', 'ROCK'],
       ['Prosun Futta', 'MALE', 21, 'NON-VEG', 'CLASSIC'],
       ['Shuvadip Dutta ', 'MALE', 18, 'NON-VEG', 'CLASSIC'],
       ['Faizal Khan ', 'MALE', 20, 'NON-VEG', 'Lofi'],
       ['Goutam Mondal ', 'MALE', 23, 'NON-VEG', 'ROCK'],
       ['Partho', 'MALE', 30, 'NON-VEG', 'ROCK'],
       ['Suvasish Jana', 'MALE', 20, 'NON-VEG', 'CLASSIC'],
       ['Dinesh kundo', 'MALE', 21, 'VEG', 'HIPHOP'],
       ['Jeet Bhattacharjee ', 'MALE', 22, 'NON-VEG', 'CLASSIC'],
       ['Tushar Kanti Naskar ', 'MALE', 22, 'NON-VEG', 'HIPHOP'],
       ['Subhadip Samanta', 'MALE', 20, 'Both ', 'CLASSIC'],
       ['PRAMIT PRAMANICK ', 'MALE', 19, 'NON-VEG', 'CLASSIC'],
       ['Jayita Pal ', 'Female', 22, 'NON-VEG', 'CLASSIC'],
       ['Pradipta banerjee ', 'MALE', 24, 'NON-VEG', 'CLASSIC'],
       ['AVIJIT SANI', 'MALE', 20, 'NON-VEG', 'JAZZ'],
       ['Subhajit bey', 'MALE', 14, 'NON-VEG', 'ROCK'],
       ['Saheli Mondal ', 'Female', 31, 'NON-VEG', 'CLASSIC'],
       ['MD ALIF NOOR REZA ', 'MALE', 24, 'NON-VEG', 'ROCK'],
       ['Nayan Bose ', 'MALE', 20, 'NON-VEG', 'CLASSIC'],
       ['Sushil kumar Panjiyara ', 'MALE', 20, 'NON-VEG', 'CLASSIC'],
       ['PRITAM BERA', 'MALE', 19, 'Both', 'CLASSIC'],
       ['Kushal Kayal ', 'MALE', 20, 'NON-VEG', 'CLASSIC'],
       ['Sanju Das', 'MALE', 20, 'NON-VEG', 'CLASSIC'],
       ['Md Sakib Reja', 'MALE', 20, 'VEG', 'ROCK'],
       ['Sayak kar ', 'MALE', 20, 'NON-VEG', 'CLASSIC'],
       ['Narayan Kumar bhandari ', 'MALE', 22, 'VEG', 'HIPHOP'],
       ['Sankhadip das', 'MALE', 22, 'NON-VEG', 'CLASSIC'],
       ['Goutam Bej ', 'MALE', 21, 'NON-VEG', 'CLASSIC'],
       ['Shahwez Ahmad ', 'MALE', 19, 'NON-VEG', 'JAZZ'],
       ['Chaitali Majumder', 'Female', 22, 'NON-VEG', 'CLASSIC'],
       ['Priyanka Maity ', 'Female', 22, 'NON-VEG', 'CLASSIC'],
       ['Alapan Ganguly ', 'MALE', 22, 'NON-VEG', 'CLASSIC'],
       ['Pritam gharami', 'MALE', 23, 'NON-VEG', 'CLASSIC'],
       ['Pallabi Roy ', 'Female', 20, 'NON-VEG', 'ROCK'],
       ['ATANU ROY', 'MALE', 21, 'NON-VEG', 'CLASSIC'],
```

```
['Sneha Debnath ', 'Female', 24, 'NON-VEG', 'CLASSIC'],
['Saurabh Kumar Singh ', 'MALE', 23, 'NON-VEG', 'Electronics '],
['Nilima Dey', 'Female', 26, 'Both', 'CLASSIC'],
['Raju Sarkar', 'MALE', 28, 'NON-VEG', 'HIPHOP'],
['Somu Sarkar', 'MALE', 30, 'VEG', 'JAZZ'],
['Jogamaya Sarkar', 'Female', 30, 'VEG', 'CLASSIC'],
['Arijit Chakraborty ', 'MALE', 22, 'NON-VEG', 'ROCK'],
['Aryan Biswas ', 'MALE', 21, 'NON-VEG', 'HIPHOP'],
['Pritom saha', 'MALE', 21, 'NON-VEG', 'ROCK'],
['Sabikun Nahar ', 'Female', 21, 'NON-VEG', 'CLASSIC'],
['Munmun Ghosh ', 'Female', 22, 'NON-VEG', 'CLASSIC'],
['Amrito Roy', 'MALE', 22, 'NON-VEG', 'CLASSIC']], dtype=object)
```

In [69]:

```
df=df.replace(to_replace='HIPHOP',value=1)
df=df.replace(to_replace='JAZZ',value=2)
df=df.replace(to_replace='CLASSIC',value=3)
df=df.replace(to_replace='ROCK',value=4)
df=df.replace(to_replace='Arabic',value=5)
df=df.replace(to_replace='EDM',value=6)
df=df.replace(to_replace='Lofi',value=7)
df=df.replace(to_replace='Electronics ',value=8)
df=df.replace(to_replace='MALE',value=1)
df=df.replace(to_replace='Female',value=2)
df=df.replace(to_replace='NON-VEG',value=1)
df=df.replace(to_replace='VEG',value=2)
df=df.replace(to_replace='Both ',value=3)
df=df.replace(to_replace='both',value=4)
df
```

Out[69]:

	Name	GENDER	AGE	FOOD	MUSIC
0	Swati Konar	2	19	1	3
1	Sumanta karmakar	1	20	1	4
2	Ananya Das	2	20	1	4
3	DEBASHISH MISHRA	1	20	2	4
4	Habi Ullah	1	29	1	5
5	Apurba Sarkar	1	21	1	3
6	Geet Roy	1	19	2	1

	Name	GENDER	AGE	FOOD	MUSIC
7	Rajat Poddar	1	24	1	6
8	Snehasish Karmakar	1	21	1	1
9	Anirban Ghosh	1	19	1	4
10	Prosun Futta	1	21	1	3
11	Shuvadip Dutta	1	18	1	3
12	Faizal Khan	1	20	1	7
13	Goutam Mondal	1	23	1	4
14	Partho	1	30	1	4
15	Suvasish Jana	1	20	1	3
16	Dinesh kundo	1	21	2	1
17	Jeet Bhattacharjee	1	22	1	3
18	Tushar Kanti Naskar	1	22	1	1
19	Subhadip Samanta	1	20	3	3
20	PRAMIT PRAMANICK	1	19	1	3
21	Jayita Pal	2	22	1	3
22	Pradipta banerjee	1	24	1	3
23	AVIJIT SANI	1	20	1	2
24	Subhajit bey	1	14	1	4
25	Saheli Mondal	2	31	1	3
26	MD ALIF NOOR REZA	1	24	1	4
27	Nayan Bose	1	20	1	3
28	Sushil kumar Panjiyara	1	20	1	3
29	PRITAM BERA	1	19	3	3
30	Kushal Kayal	1	20	1	3

	Name	GENDER	AGE	FOOD	MUSIC
31	Sanju Das	1	20	1	3
32	Md Sakib Reja	1	20	2	4
33	Sayak kar	1	20	1	3
34	Narayan Kumar bhandari	1	22	2	1
35	Sankhadip das	1	22	1	3
36	Goutam Bej	1	21	1	3
37	Shahwez Ahmad	1	19	1	2
38	Chaitali Majumder	2	22	1	3
39	Priyanka Maity	2	22	1	3
40	Alapan Ganguly	1	22	1	3
41	Pritam gharami	1	23	1	3
42	Pallabi Roy	2	20	1	4
43	ATANU ROY	1	21	1	3
44	Sneha Debnath	2	24	1	3
45	Saurabh Kumar Singh	1	23	1	8
46	Nilima Dey	2	26	3	3
47	Raju Sarkar	1	28	1	1
48	Somu Sarkar	1	30	2	2
49	Jogamaya Sarkar	2	30	2	3
50	Arijit Chakraborty	1	22	1	4
51	Aryan Biswas	1	21	1	1
52	Pritom saha	1	21	1	4
53	Sabikun Nahar	2	21	1	3
54	Munmun Ghosh	2	22	1	3

	Name	GENDER	AGE	FOOD	MUSIC
55	Amrito Roy	1	22	1	3

In [70]:
```
print(df['AGE'].mean())
```

```
21.892857142857142
```

In [71]:
```
print(df['AGE'].median())
```

```
21.0
```

In [72]:
```
print(df['AGE'].min())
```

```
14
```

In [73]:
```
print(df['AGE'].max())
```

```
31
```

In [74]:
```
print(df['AGE'].std())
```

```
3.2790163238306773
```

In [75]:
```
a=df.drop(columns='MUSIC')
a
```

Out[75]:

	Name	GENDER	AGE	FOOD
0	Swati Konar	2	19	1
1	Sumanta karmakar	1	20	1
2	Ananya Das	2	20	1
3	DEBASHISH MISHRA	1	20	2
4	Habi Ullah	1	29	1
5	Apurba Sarkar	1	21	1

	Name	GENDER	AGE	FOOD
6	Geet Roy	1	19	2
7	Rajat Poddar	1	24	1
8	Snehasish Karmakar	1	21	1
9	Anirban Ghosh	1	19	1
10	Prosun Futta	1	21	1
11	Shuvadip Dutta	1	18	1
12	Faizal Khan	1	20	1
13	Goutam Mondal	1	23	1
14	Partho	1	30	1
15	Suvasish Jana	1	20	1
16	Dinesh kundo	1	21	2
17	Jeet Bhattacharjee	1	22	1
18	Tushar Kanti Naskar	1	22	1
19	Subhadip Samanta	1	20	3
20	PRAMIT PRAMANICK	1	19	1
21	Jayita Pal	2	22	1
22	Pradipta banerjee	1	24	1
23	AVIJIT SANI	1	20	1
24	Subhajit bey	1	14	1
25	Saheli Mondal	2	31	1
26	MD ALIF NOOR REZA	1	24	1
27	Nayan Bose	1	20	1
28	Sushil kumar Panjiyara	1	20	1
29	PRITAM BERA	1	19	3

	Name	GENDER	AGE	FOOD
30	Kushal Kayal	1	20	1
31	Sanju Das	1	20	1
32	Md Sakib Reja	1	20	2
33	Sayak kar	1	20	1
34	Narayan Kumar bhandari	1	22	2
35	Sankhadip das	1	22	1
36	Goutam Bej	1	21	1
37	Shahwez Ahmad	1	19	1
38	Chaitali Majumder	2	22	1
39	Priyanka Maity	2	22	1
40	Alapan Ganguly	1	22	1
41	Pritam gharami	1	23	1
42	Pallabi Roy	2	20	1
43	ATANU ROY	1	21	1
44	Sneha Debnath	2	24	1
45	Saurabh Kumar Singh	1	23	1
46	Nilima Dey	2	26	3
47	Raju Sarkar	1	28	1
48	Somu Sarkar	1	30	2
49	Jogamaya Sarkar	2	30	2
50	Arijit Chakraborty	1	22	1
51	Aryan Biswas	1	21	1
52	Pritom saha	1	21	1
53	Sabikun Nahar	2	21	1

	Name	GENDER	AGE	FOOD
54	Munmun Ghosh	2	22	1
55	Amrito Roy	1	22	1

In [76]:
```
b=df.drop(columns='FOOD')
b
```

Out[76]:

	Name	GENDER	AGE	MUSIC
0	Swati Konar	2	19	3
1	Sumanta karmakar	1	20	4
2	Ananya Das	2	20	4
3	DEBASHISH MISHRA	1	20	4
4	Habi Ullah	1	29	5
5	Apurba Sarkar	1	21	3
6	Geet Roy	1	19	1
7	Rajat Poddar	1	24	6
8	Snehasish Karmakar	1	21	1
9	Anirban Ghosh	1	19	4
10	Prosun Futta	1	21	3
11	Shuvadip Dutta	1	18	3
12	Faizal Khan	1	20	7
13	Goutam Mondal	1	23	4
14	Partho	1	30	4
15	Suvasish Jana	1	20	3
16	Dinesh kundo	1	21	1
17	Jeet Bhattacharjee	1	22	3

	Name	GENDER	AGE	MUSIC
18	Tushar Kanti Naskar	1	22	1
19	Subhadip Samanta	1	20	3
20	PRAMIT PRAMANICK	1	19	3
21	Jayita Pal	2	22	3
22	Pradipta banerjee	1	24	3
23	AVIJIT SANI	1	20	2
24	Subhajit bey	1	14	4
25	Saheli Mondal	2	31	3
26	MD ALIF NOOR REZA	1	24	4
27	Nayan Bose	1	20	3
28	Sushil kumar Panjiyara	1	20	3
29	PRITAM BERA	1	19	3
30	Kushal Kayal	1	20	3
31	Sanju Das	1	20	3
32	Md Sakib Reja	1	20	4
33	Sayak kar	1	20	3
34	Narayan Kumar bhandari	1	22	1
35	Sankhadip das	1	22	3
36	Goutam Bej	1	21	3
37	Shahwez Ahmad	1	19	2
38	Chaitali Majumder	2	22	3
39	Priyanka Maity	2	22	3
40	Alapan Ganguly	1	22	3
41	Pritam gharami	1	23	3

	Name	GENDER	AGE	MUSIC
42	Pallabi Roy	2	20	4
43	ATANU ROY	1	21	3
44	Sneha Debnath	2	24	3
45	Saurabh Kumar Singh	1	23	8
46	Nilima Dey	2	26	3
47	Raju Sarkar	1	28	1
48	Somu Sarkar	1	30	2
49	Jogamaya Sarkar	2	30	3
50	Arijit Chakraborty	1	22	4
51	Aryan Biswas	1	21	1
52	Pritom saha	1	21	4
53	Sabikun Nahar	2	21	3
54	Munmun Ghosh	2	22	3
55	Amrito Roy	1	22	3

In [77]:

```
import pandas as pd
df1 = pd.DataFrame(df)
df2=df1.drop(['MUSIC', 'FOOD','Name'], axis=1)
df2
```

Out[77]:

	GENDER	AGE
0	2	19
1	1	20
2	2	20
3	1	20
4	1	29

	GENDER	AGE
5	1	21
6	1	19
7	1	24
8	1	21
9	1	19
10	1	21
11	1	18
12	1	20
13	1	23
14	1	30
15	1	20
16	1	21
17	1	22
18	1	22
19	1	20
20	1	19
21	2	22
22	1	24
23	1	20
24	1	14
25	2	31
26	1	24
27	1	20
28	1	20

	GENDER	AGE
29	1	19
30	1	20
31	1	20
32	1	20
33	1	20
34	1	22
35	1	22
36	1	21
37	1	19
38	2	22
39	2	22
40	1	22
41	1	23
42	2	20
43	1	21
44	2	24
45	1	23
46	2	26
47	1	28
48	1	30
49	2	30
50	1	22
51	1	21
52	1	21

	GENDER	AGE
53	2	21
54	2	22
55	1	22

In [78]:
```
import pandas as pd
df1 = pd.DataFrame(df)
df3=df1.drop(['AGE','FOOD','Name','GENDER'], axis=1)
df3
```

Out[78]:

	MUSIC
0	3
1	4
2	4
3	4
4	5
5	3
6	1
7	6
8	1
9	4
10	3
11	3
12	7
13	4
14	4
15	3

	MUSIC
16	1
17	3
18	1
19	3
20	3
21	3
22	3
23	2
24	4
25	3
26	4
27	3
28	3
29	3
30	3
31	3
32	4
33	3
34	1
35	3
36	3
37	2
38	3
39	3

	MUSIC
40	3
41	3
42	4
43	3
44	3
45	8
46	3
47	1
48	2
49	3
50	4
51	1
52	4
53	3
54	3
55	3

In [79]:
```
x=df2
y=df3
```

In [80]:
```
import warnings
warnings.filterwarnings('ignore')
```

In [81]:
```
#DecisionTreeClassifier
import sklearn
from sklearn.model_selection import train_test_split
from sklearn.metrics import accuracy_score
```

```
x_train,x_test,y_train,y_test=train_test_split(x,y,test_size=0.4,random_state=42)
#x_train,x_test,y_train,y_test=train_test_split(random_state=42)
#from sklearn.tree import DecisionTreeClassifier
from sklearn.tree import DecisionTreeClassifier
clr=DecisionTreeClassifier()
clr.fit(x_train,y_train)
pred=clr.predict(x_test)
score=sklearn.metrics.accuracy_score(y_test,pred)
print(score)
```

```
0.391304347826087
```

In [82]:

```
#confusion_matrix
from sklearn.metrics import confusion_matrix
conf_mat=confusion_matrix(y_test,pred)
print(conf_mat)
```

```
[[1 1 2 0 0 0 0]
 [0 0 0 0 0 0 0]
 [2 0 8 1 0 0 1]
 [1 0 3 0 0 0 1]
 [0 1 0 0 0 0 0]
 [0 0 1 0 0 0 0]
 [0 0 0 0 0 0 0]]
```

In [83]:

```
print(pred)
```

```
[4 1 3 8 3 3 1 3 3 3 3 3 3 3 1 3 3 2 8 3 2 3 1]
```

In [84]:

```
x_test.shape
```

Out[84]:

```
(23, 2)
```

In [85]:

```
x_train.shape
```

Out[85]:

```
(33, 2)
```

In [86]:

```
#KNeighborsClassifier
import sklearn
```

```
from sklearn.model_selection import train_test_split
from sklearn.metrics import accuracy_score
x_train,x_test,y_train,y_test=train_test_split(x,y,test_size=0.4,random_state=42)
#from sklearn.tree import DecisionTreeClassifier
from sklearn.neighbors import KNeighborsClassifier
clr=KNeighborsClassifier()
clr.fit(x_train,y_train)
pred=clr.predict(x_test)
score=sklearn.metrics.accuracy_score(y_test,pred)
print(score)
```

```
0.5217391304347826
```

In [87]:

```
#confusion_matrix
from sklearn.metrics import confusion_matrix
conf_mat=confusion_matrix(y_test,pred)
print(conf_mat)
```

```
[[ 0  4  0  0  0]
 [ 0 12  0  0  0]
 [ 0  5  0  0  0]
 [ 0  1  0  0  0]
 [ 0  1  0  0  0]]
```

In [88]:

```
#KNeighborsClassifier
import sklearn
from sklearn.model_selection import train_test_split
from sklearn.metrics import accuracy_score
x_train,x_test,y_train,y_test=train_test_split(x,y,test_size=0.2)
#from sklearn.tree import DecisionTreeClassifier
from sklearn.neighbors import KNeighborsClassifier
clr=KNeighborsClassifier(n_neighbors=5)
clr.fit(x_train,y_train)
pred=clr.predict(x_test)
score=sklearn.metrics.accuracy_score(y_test,pred)
print(score)
```

```
0.4166666666666667
```

In [89]:

```
#confusion_matrix
from sklearn.metrics import confusion_matrix
```

```
conf_mat=confusion_matrix(y_test,pred)
print(conf_mat)
```

```
[[0 0 0]
 [5 5 0]
 [0 2 0]]
```

In [90]:

```
#svm
from sklearn import svm
clr=svm.SVC()
clr.fit(x_train,y_train)
pred=clr.predict(x_test)
score=sklearn.metrics.accuracy_score(y_test,pred)
print(score)
```

```
0.8333333333333334
```

In [91]:

```
#confusion_matrix
from sklearn.metrics import confusion_matrix
conf_mat=confusion_matrix(y_test,pred)
print(conf_mat)
```

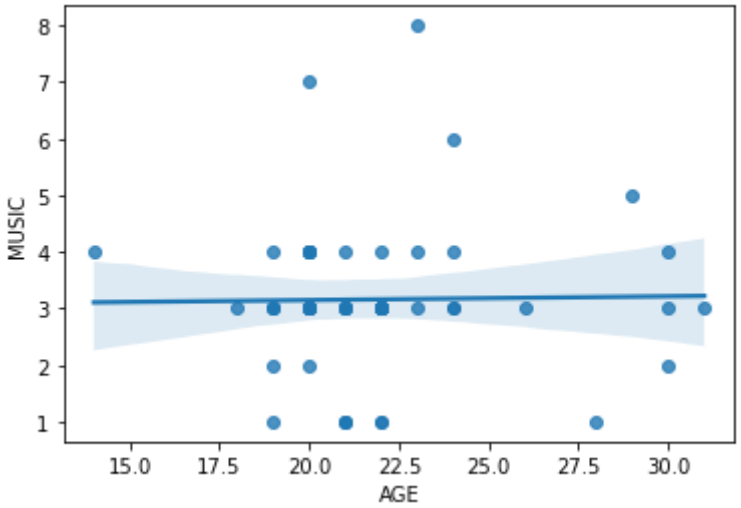
```
[[10  0]
 [ 2  0]]
```

In [92]:

```
import seaborn as sns
sns.regplot(x='AGE',y='MUSIC',data=df)
```

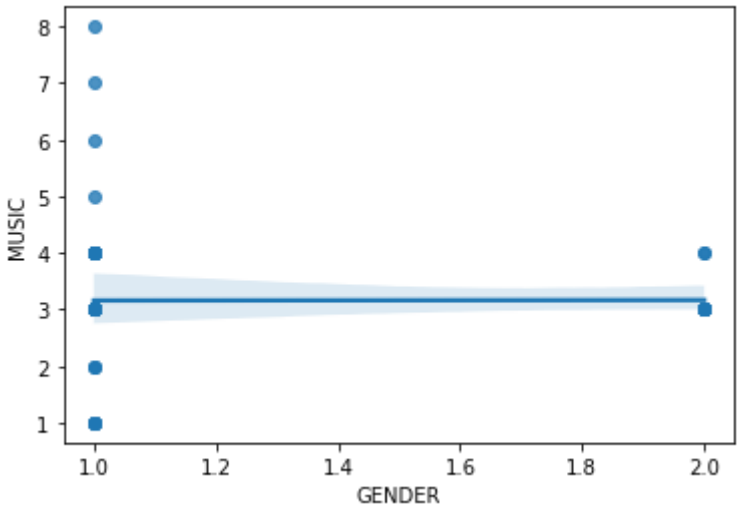
Out[92]:

```
<AxesSubplot:xlabel='AGE', ylabel='MUSIC'>
```



In [93]:
```
import seaborn as sns
sns.regplot(x='GENDER',y='MUSIC',data=df)
```

Out[93]:
```
<AxesSubplot:xlabel='GENDER', ylabel='MUSIC'>
```



In [94]:
```
df.query('GENDER==1 and AGE==20',inplace=True)
print(df)
```

	Name	GENDER	AGE	FOOD	MUSIC
1	Sumanta karmakar	1	20	1	4
3	DEBASHISH MISHRA	1	20	2	4
12	Faizal Khan	1	20	1	7
15	Suvasish Jana	1	20	1	3
19	Subhadip Samanta	1	20	3	3
23	AVIJIT SANI	1	20	1	2
27	Nayan Bose	1	20	1	3
28	Sushil kumar Panjiyara	1	20	1	3
30	Kushal Kayal	1	20	1	3
31	Sanju Das	1	20	1	3
32	Md Sakib Reja	1	20	2	4
33	Sayak kar	1	20	1	3

In [100…

```
from sklearn.linear_model import LogisticRegression
from sklearn.model_selection import train_test_split
from sklearn.metrics import accuracy_score
from sklearn.datasets import load_iris
x=df2
y=df3
x_train,x_test,y_train,y_test=train_test_split(x,y,test_size=0.1)
clf=LogisticRegression()
clf.fit(x_train,y_train)
pred=clr.predict(x_test)
score=sklearn.metrics.accuracy_score(y_test,pred)
print(score)
```

```
0.5
```

In [97]:

```
from sklearn.neural_network import MLPClassifier
from sklearn.model_selection import train_test_split
from sklearn.metrics import accuracy_score
from sklearn.datasets import load_iris
x=df2
y=df3
x_train,x_test,y_train,y_test=train_test_split(x,y,test_size=0.1)
clf=MLPClassifier(solver='lbfgs',hidden_layer_sizes=(10),alpha=0.001)
clf.fit(x_train,y_train)
pred=clr.predict(x_test)
score=sklearn.metrics.accuracy_score(y_test,pred)
print(score)
```

```
0.6666666666666666
```

In [ ]: