Language_Wise

In [1]:
```
import pandas as pd
import numpy as np
import seaborn as sns
import matplotlib as plt
```

In [3]:
```
xls = pd.ExcelFile(r"C:\Users\dell\Downloads\App Analytics Report-06.05.2023 (1).xlsx")
lng_wise = pd.read_excel(xls, 'User by Language')
```

In [4]:
```
lng_wise
```

Out[4]:

	Language	Users	New users	Engaged sessions	Engagement rate	Engaged sessions per user	Average engagement time	Event count	Conversions	Total revenue
0	English	22495	21990	40639	0.595147	1.806579	341.36350	1297970	189946	0
1	Hindi	586	552	798	0.406314	1.361775	60.03413	13523	2699	0
2	Marathi	85	84	98	0.426087	1.152941	38.48235	1589	323	0
3	Gujarati	78	77	100	0.448430	1.282051	46.53846	1794	327	0
4	Telugu	43	42	56	0.455285	1.302326	36.65116	812	170	0
5	Tamil	36	36	43	0.518072	1.194444	45.86111	615	115	0
6	Malayalam	17	15	36	0.654545	2.117647	161.94120	548	71	0
7	Bengali	14	11	18	0.600000	1.285714	50.07143	217	39	0
8	Chinese	13	13	13	1.000000	1.000000	136.76920	138	20	0
9	Kannada	13	12	31	0.500000	2.384615	249.07690	680	75	0
10	Panjabi	9	9	17	0.708333	1.888889	92.44444	229	35	0
11	Persian	8	8	6	0.400000	0.750000	28.25000	99	23	0
12	Spanish	6	6	8	0.470588	1.333333	22.16667	113	22	0
13	Finnish	4	3	4	0.571429	1.000000	89.25000	64	11	0
14	Japanese	4	4	3	0.428571	0.750000	9.25000	49	12	0
15	Oriya	4	4	2	0.666667	0.500000	7.50000	29	10	0
16	Afrikaans	1	1	1	1.000000	1.000000	37.00000	12	2	0
17	Assamese	1	0	1	1.000000	1.000000	42.00000	6	1	0
18	German	1	1	0	0.000000	0.000000	0.00000	5	2	0
19	Malay	1	1	1	1.000000	1.000000	2.00000	7	2	0
20	Nepali	1	1	1	1.000000	1.000000	5.00000	7	2	0
21	Russian	1	1	0	0.000000	0.000000	70.00000	12	1	0
22	Urdu	1	1	0	0.000000	0.000000	1.00000	7	4	0
23	Sanskrit	0	0	0	0.000000	0.000000	0.00000	4	2	0

In [5]:
```
lng_wise.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 24 entries, 0 to 23
Data columns (total 10 columns):
 #   Column                     Non-Null Count  Dtype
---  ------                     --------------  -----
 0   Language                   24 non-null     object
 1   Users                      24 non-null     int64
 2   New users                  24 non-null     int64
 3   Engaged sessions           24 non-null     int64
 4   Engagement rate            24 non-null     float64
 5   Engaged sessions per user  24 non-null     float64
 6   Average engagement time    24 non-null     float64
 7   Event count                24 non-null     int64
 8   Conversions                24 non-null     int64
 9   Total revenue              24 non-null     int64
dtypes: float64(3), int64(6), object(1)
memory usage: 2.0+ KB
```

In [6]:
```
lng_wise["Language"].nunique()
```

Out[6]:
```
24
```

In [7]:
```
lng_wise.describe().transpose()
```

Out[7]:

	count	mean	std	min	25%	50%	75%	max
Users	24.0	975.916667	4585.079838	0.0	1.000000	7.000000	21.750000	2.249500e+04
New users	24.0	953.000000	4482.258359	0.0	1.000000	7.000000	20.250000	2.199000e+04
Engaged sessions	24.0	1744.833333	8285.991965	0.0	1.000000	7.000000	37.750000	4.063900e+04
Engagement rate	24.0	0.535395	0.321298	0.0	0.421144	0.509036	0.677083	1.000000e+00
Engaged sessions per user	24.0	1.046263	0.642224	0.0	0.750000	1.000000	1.310078	2.384615e+00
Average engagement time	24.0	65.527106	83.316618	0.0	8.812500	40.241175	74.812500	3.413635e+02
Event count	24.0	54938.708333	264778.693883	4.0	10.750000	106.000000	631.250000	1.297970e+06
Conversions	24.0	8079.750000	38741.203482	1.0	2.000000	21.000000	85.000000	1.899460e+05
Total revenue	24.0	0.000000	0.000000	0.0	0.000000	0.000000	0.000000	0.000000e+00

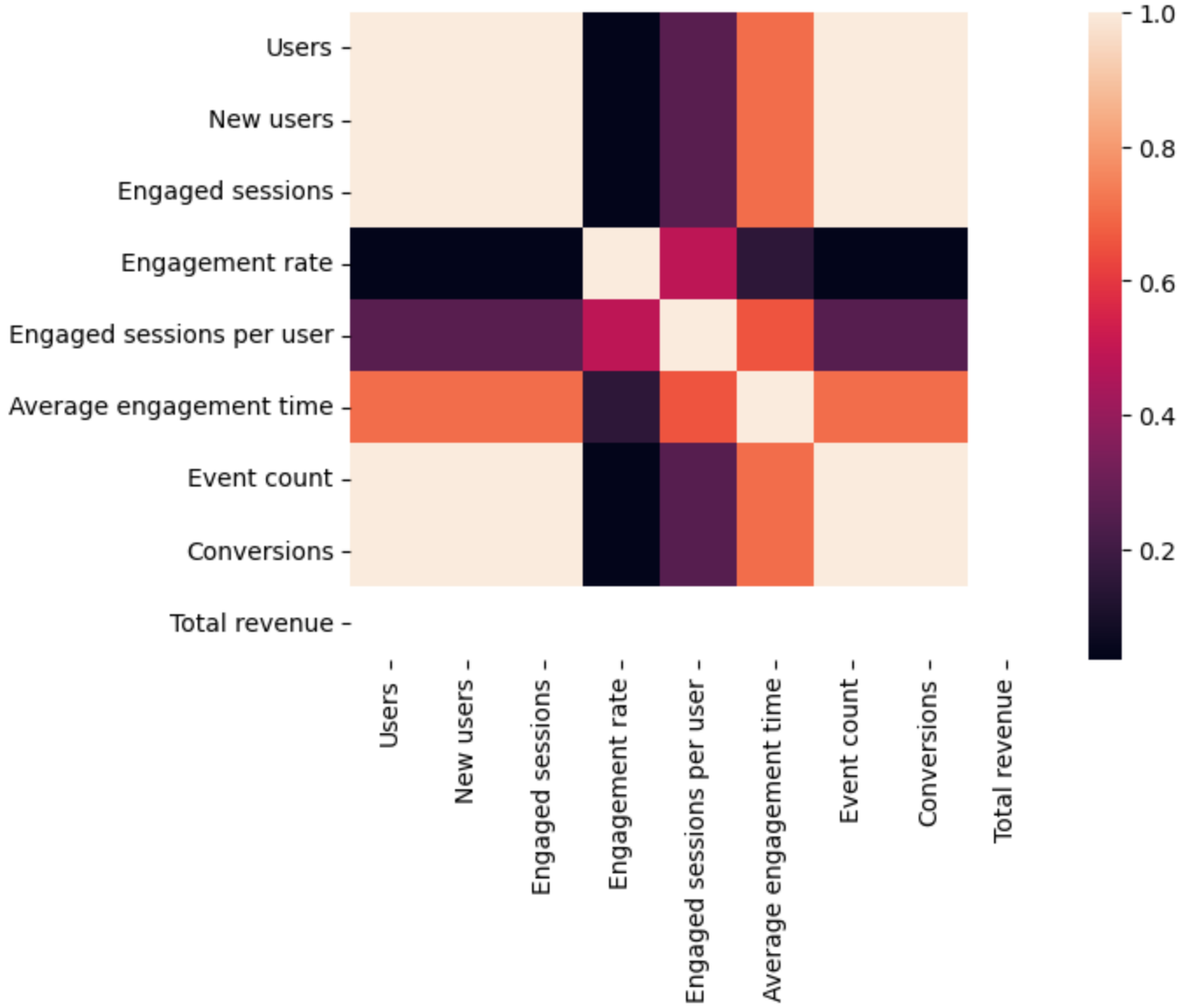
In [8]:
```
lng_wise.corr()
```

Out[8]:

	Users	New users	Engaged sessions	Engagement rate	Engaged sessions per user	Average engagement time	Event count	Conversions	Tota revenu
Users	1.000000	1.000000	0.999979	0.037111	0.256477	0.705615	0.999879	0.999931	Nal
New users	1.000000	1.000000	0.999984	0.037165	0.256328	0.705576	0.999893	0.999941	Nal
Engaged sessions	0.999979	0.999984	1.000000	0.037800	0.255742	0.705847	0.999958	0.999986	Nal
Engagement rate	0.037111	0.037165	0.037800	1.000000	0.485446	0.152353	0.038609	0.038213	Nal
Engaged sessions per user	0.256477	0.256328	0.255742	0.485446	1.000000	0.657294	0.254073	0.254498	Nal
Average engagement time	0.705615	0.705576	0.705847	0.152353	0.657294	1.000000	0.705604	0.705502	Nal
Event count	0.999879	0.999893	0.999958	0.038609	0.254073	0.705604	1.000000	0.999993	Nal
Conversions	0.999931	0.999941	0.999986	0.038213	0.254498	0.705502	0.999993	1.000000	Nal
Total revenue	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	Nal

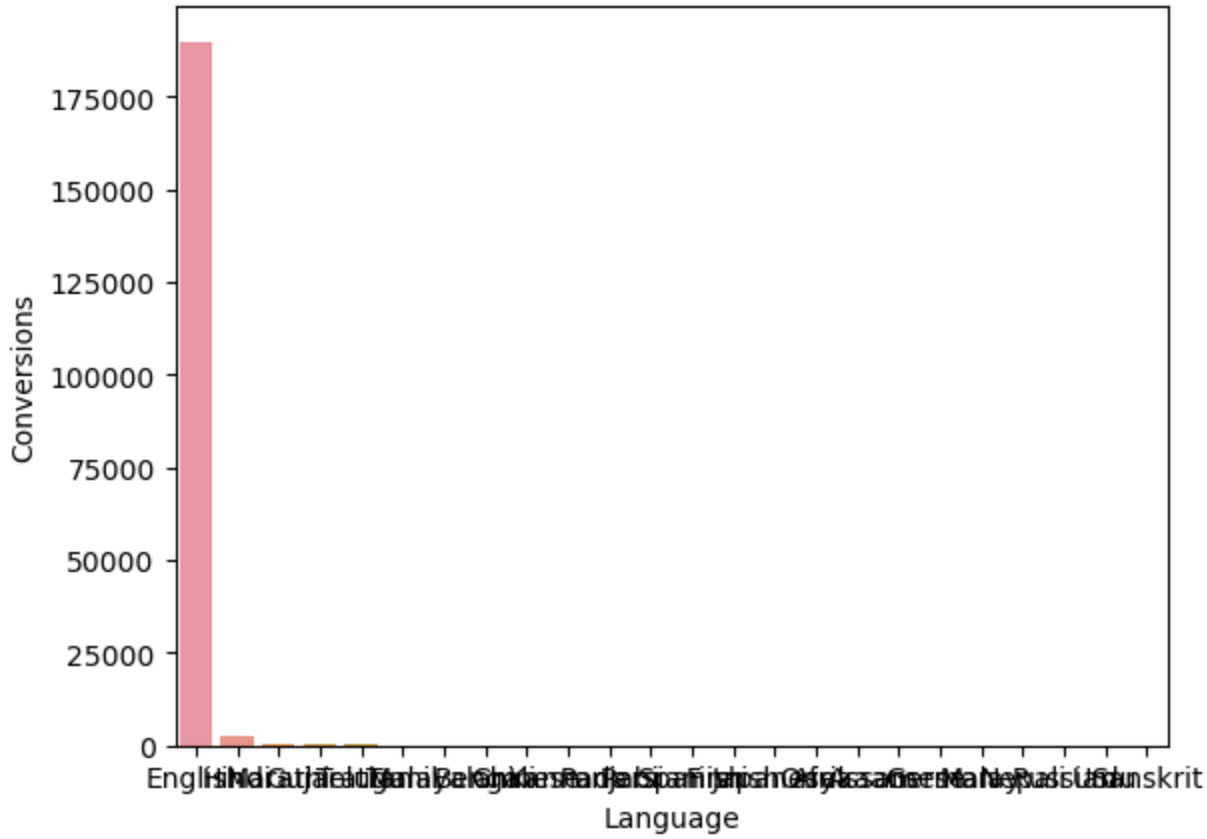
In [9]:
```
sns.heatmap(lng_wise.corr())
```

Out[9]:
```
<AxesSubplot:>
```



In [11]:
```
sns.barplot(x = "Language" , y = "Conversions" , data = lng_wise)
```

Out[11]:
```
<AxesSubplot:xlabel='Language', ylabel='Conversions'>
```



Observations

analysis and findings

1) No null values are present.

2) Users, New users, Engaged sessions are highly co -related

3) The websites are use in total 24 different languages.

4) Maximum website is used by English and Hindi language and minimum is used by Russian, Urdu and Sanskrit.