Who are our users?

A closer look at the user base of Kahoot...

Out[197]: +

Out[198]: +

Where are they from?

Kahoot was played in 100 countries within the selected week !

Out[191]: +

Kahoot truly is a global company, with players spanning the United States, all through Europe, India, Asia and even Greenland!

However, there are big differences when it comes to what countries Kahoot really stands out.. Let us have a closer look at how countries rank by number of users:

Out[12]: +

The figure above shows how countries are ranked by number of users. The top countries are typically well developed western countries who speaks English either as a first or second language. The UK, Australia and Canada and all the nordic countries are also among our top Kahooters.

This figure does however not illustrate the ratio of users...

Below are two lists, one showing the most active countries by number of users, and one showing the least active countries during this specific week.

```
10 Most active countries: country
United States      6017
United Kingdom      612
Australia           335
Canada              321
Spain               269
Netherlands         252
Denmark             243
Norway              224
Sweden              189
Finland             117
dtype: int64

10 least active countries: country
Cayman Islands       1
Panama               1
Sudan                1
Curaçao              1
Morocco              1
Greenland            1
Nicaragua            1
Oman                 1
Pakistan             1
Isle of Man          1
dtype: int64
```
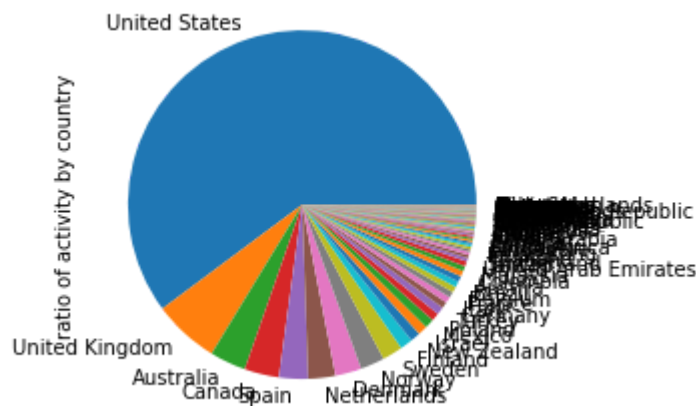
Out[17]: +

The pie chart shows that US is by far our biggest player, with more than half our users within a given week. Other well developed western countries who speaks english, like the UK, Australia and Canada and all the nordic countries are also among our top Kahooters, but they are still far away from having the same user base.

What type of users are there?

Looking away from what country our users are from, we categorize them into 4 different
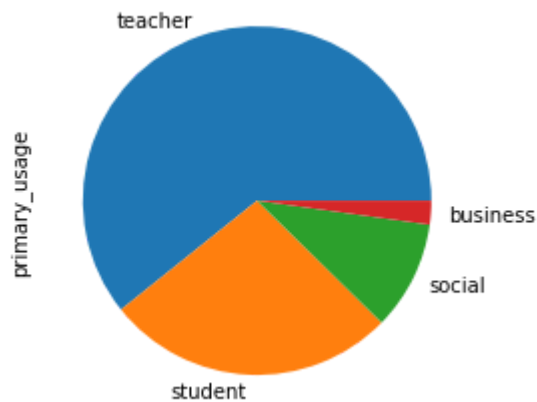
types of users:

```
types of users:

teacher
social
student
business
```

Out[19]: +

Looking at the ratio of the different user types tells a clear story:

```
Ratio of users, grouped by user type:
```

Out[23]: +

Teachers dominate among our users, covering more than half the users within a week, with students coming in at a strong second.

The educational use of Kahoot thus shows to be the strongest force driving Kahoot

How do they use Kahoot?

Among our users, many of them are there just to play / attend, while others put a lot of effort into creating content for others. With a median of 2 Kahoots created for a random user, and over 15% of the users never having created a Kahoot themselves.

```
percentage of users who never created a kahoot:
15.8
```

Out[52]: +

There are some users that really loves making kahoots, reaching up to values as high as 300+ kahoots created. These top creators are teachers, with a way higher engagement regarding creation of Kahoots.

```
Overview of stats of Kahoots created by teachers
count     5461.000000
mean        12.578649
std         20.131852
min          0.000000
25%          1.000000
50%          6.000000
75%         16.000000
max        326.000000
Name: my_kahoots_count, dtype: float64
```

Out[31]: +

```
Overview of stats of Kahoots created by non teachers:
count     3531.000000
mean         1.864911
std          3.088155
min          0.000000
25%          1.000000
50%          1.000000
75%          2.000000
max         42.000000
Name: my_kahoots_count, dtype: float64
```

Out[32]: +

Teachers stand for over 91% of Kahoots created... Indicating that there truly is a Kahoot for the creator, and a Kahoot for the attenders...

```
Percentage of how many Kahoots were created by teachers:
0.9125230814192914
```

Out[34]: +

Kahoot definetely has 1 type of users that can be considered a power user, using Kahoot in a specific way, creating lots of content for others.

Meanwhile, the result of what these power users create are consumed by the other side (those consuming / attending the quiz..)

One side of the product development is thus to create a great platform for the creators, and the other part is to make it interesting and enjoyable for the attendees.

An impressive 97% of games joined by all users were created by teachers.... Strengthening that Kahoot is an educational platform more so than entertainment.

```
Percentage of how many games that were joined, were created by teachers:
97.49614707838771
```

Out[73]: +

Why do they sign up?

```
Top 20 signup domains
domain:              count:
www.google.com          2374
kahoot.it               1962
getkahoot.com            948
create.kahoot.it         487
www.google.co.uk         291
www.bing.com             265
kahoot.com               244
classroom.google.com     224
www.google.ca            143
www.google.com.au        131
www.google.es            122
www.google.dk            107
www.google.nl            105
www.google.se             90
www.google.no             74
www.google.fi             48
search.yahoo.com          48
www.google.co.il          44
www.google.co.nz          40
www.google.com.tr         38
Name: initial_referring_domain, dtype: int64
```

Out[102]: +

Most of the users signs up for Kahoot through google and other search engines. But a lot of our traffic also comes straight from own websites, such as kahoot.it and create.kahoot.it, suggesting that the user is somewhat familiar with the product when signing up. An interesting find is that the "info/marketing page" kahoot.com is way less frequenct than kahoot.it / create.kahoot.it, which CAN indicate that a user is not very likely to sign up just because he / she "stumbled" upon Kahoot, but is already familiar with the product when signing up.

Do they come and go?

Many apps struggles with either keeping users engaged over a longer period, and / or attracting new users...

Out[200]: +

Grouping users by year and month, gives us this top 10 list of year and month driving the most users:

```
created
2017-05    2802
           1032
2017-04     627
2017-03     423
2016-09     335
2016-11     305
2017-02     296
2016-10     275
2016-12     257
2017-01     246
dtype: int64
```
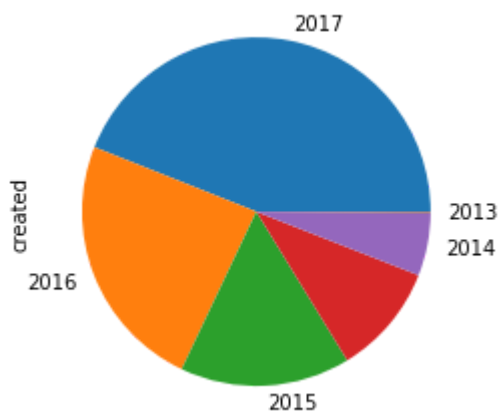
Out[201]: +

Most of the users are from the current month, but there is definitely a tail from users that registered the previous months, and keeps playing.

Out[212]: +

```
Ratio of when active users created their accounts...
```

Out[210]: +

Looking at the pie chart above, one can see that a lot of the users created their accounts a long time ago. Looking at those users that registered at least 6 months ago we find that they account for about 53% of the active users!

```
Percentage of users active this week, that registered more than 6 months ago:
53.46
```
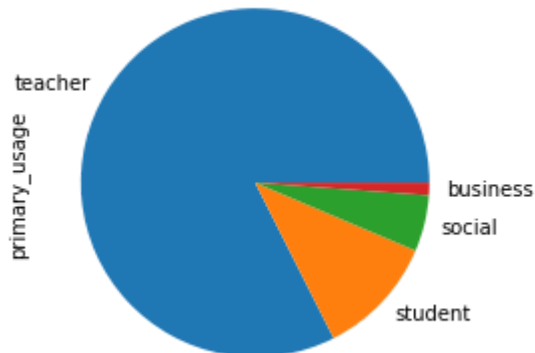
Out[152]: +

This is highly valuable, indicating that there is a great mixture between new users, and older users that have found good use of the product...

Looking closer at this data, it turns out that teachers finds high value in the product, and

becomes engaging users that stays. More than 75% of the "old" users are teachers..

Ratio of types of "old" users

Out[161]: +

This resonates well with the thoughts about teacher's being power users, and that Kahoot has built a product that delivers value to educational environments..

I could keep diving into data for quite some time, looking at differences between app-usage and browser usage, raising and answering new questions, but this case challenge has been pretty time extensive. Let's summarize....

Summary/Conclusion

Kahoot is a global company, reaching users in more than 100 countries. But even though the reach is big, the western market dominates, with US being the biggest.

There are four types of users:

- teachers
- students
- social
- business

But we can divide them on an even more abstract level:

- creators
- players / attenders

Most of the active users are teachers, and most of the content available on Kahoot is created by teachers. Around 97% of the users that joined a Kahoot, joined a Kahoot created by a teacher. So even if "social" is a type of user, the type of games played are weighted towards the educational. However, this mix of social and educational CAN indicate that the user base is interested in involving more "fun" in learning.

Teachers are the power users off Kahoot, and I would guess (my intuition only) that most of the revenue Kahoot generates are from teachers, in the US.

Users mostly sign up because they have a direct motivation (joining a game, or creating a kahoot), which indicates that they have prior knowledge to what Kahoot is when signing up.

Kahoot has a good mix of new users and users that have stayed with the product for a long time. A huge ratio of the old users (>75%) are teachers. More than half of the active users for the given week had signed up atleast 6 months ago, with some dating as far back as 2013....

Having such a mix indicates that Kahoot has a valuable product, with the potential to grow further with the correct efforts...

Extra:

Looking into the reach of the most "popular" users, the largest audience a Kahooter has reached out to is 26.000 users.
This tells me that the users aren't doing this for engagement with just about anyone (like on youtube / tiktok), but that the users are interested in providing something to a "closer" social circle.
I imagine these top "popular" kahooters are teachers at universities that have lectures with many hundred students each class. This is supported by looking at the top performing user, a teacher from Oxford, who has been a Kahooter since 2014...

```
In [219]:  df_users.my_kahoots_players_joined_count.sort_values(ascending=False)[:100]
```

```
Out[219]:  user_id
           1779     26059.0
           9989     21294.0
           4617     19411.0
           5836     19350.0
           462      18419.0
                      ...
           9114      5529.0
           5012      5479.0
           3171      5473.0
           1627      5472.0
           2335      5420.0
           Name: my_kahoots_players_joined_count, Length: 100, dtype: float64
```

In [224]: `df_users.iloc[1778]`

Out[224]:
```
city                                            Oxford
country                                  United States
device                                             Mac
device_type                                        Mac
dma                                      Birmingham, AL
language                                       English
browser                                      Chrome 53
region                                         Alabama
created                                           2014
initial_referring_domain                www.google.com
initial_utm_campaign                               NaN
initial_utm_content                                NaN
initial_utm_medium                                 NaN
initial_utm_source                                 NaN
kahoots_favourited_by_me_count                     2.0
kahoots_shared_with_me_count                       0.0
my_kahoots_answers_received_count             247619.0
my_kahoots_count                                  32.0
my_kahoots_favourited_by_anyone_count            521.0
my_kahoots_played_by_anyone_count               1735.0
my_kahoots_players_joined_count                26059.0
my_kahoots_questions_count                       305.0
my_kahoots_shared_by_anyone_count                 14.0
primary_usage                                  teacher
Name: 1779, dtype: object
```

Out[117]: +