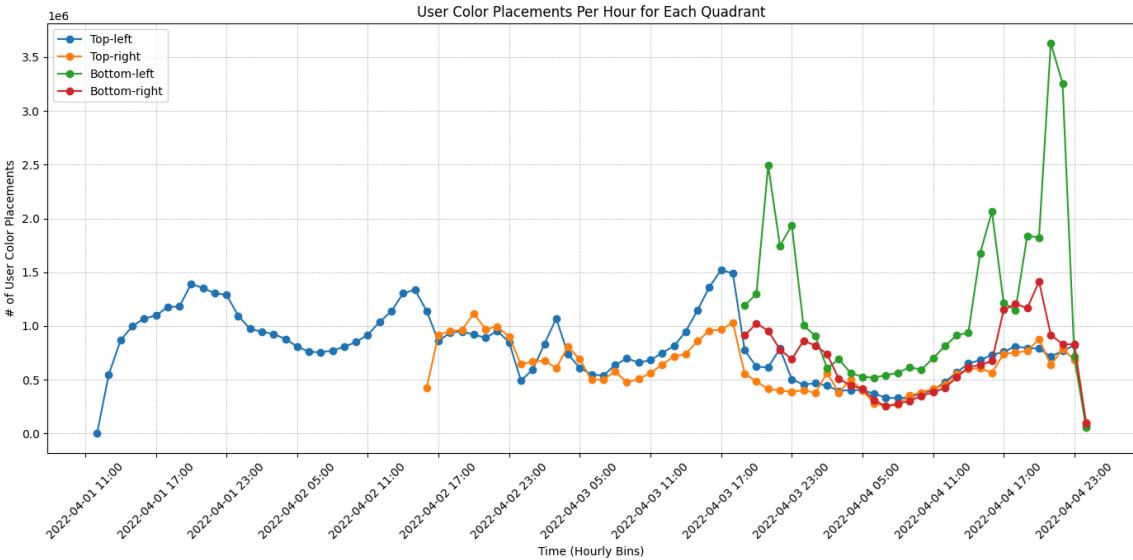
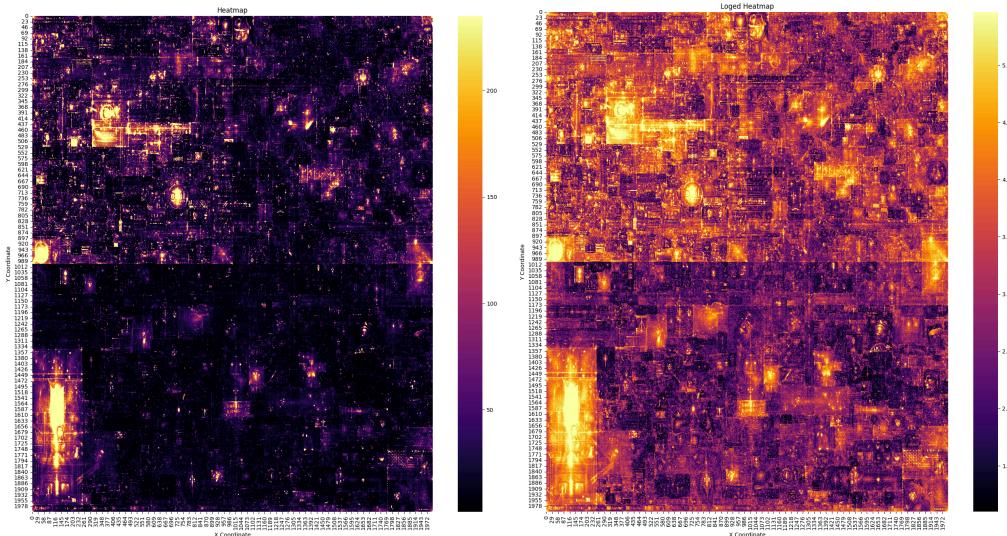


- As already known fact, the canvas expansion happened several times. What are the user tendencies for each quarter of the canvas?

I assumed that there were 3 canvas expansions that divided the canvas into 4 equal quartered of 1000 by 1000, so we can group these areas and see how many placements were for each quarter for each hour.



- Interestingly, the fact that there were in total 2 canvas expansion, but what's more interesting is why tendencies after last expansion so much increased as QIII has significantly bigger increasing momentum, while QI and QII are steadily decreasing? To answer this, I ran the heatmap across the whole canvas to see what were areas of interest that I can focus on.

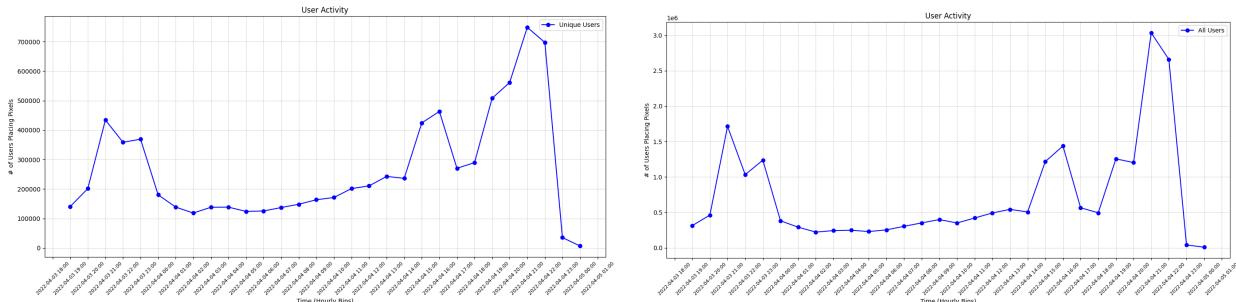


- Obviously, QIII and QIV appear to be generally darker than QI and QII, since it was created at the very end, but what's more intriguing the most points seemed to be placed on the left bottom corner of QIII after the expansion, which gained significantly higher momentum then in any other quadrant. Why it happened? Did most of the users that completed their arts collaboratively moved there? Or was it planned by organization that targeted this area from the beginning of the rPlace?

To find it out, we can calculate the number of migrated users from QI and QII to area x in [0, 250] CROSS y in [1350, 2000] in QIII.

- a. Ratio of unique migrated users with respect to unique users placed colors before 2nd expansion: **1039839/6072259 ~> 17%**.
 - b. Ratio of migrated users with respect to all unique users for the entire time of rPlace: **1039839/10381144 ~> 10%**
 - c. Ratio of migrated users with respect to all unique users that ever placed color in that region: **1039839/2658930 ~> 39%**
4. It follows that it was definitely huge one or multiple communities that planned their actions way before the expansion started, where around 40% of them were having fun in other artistic projects. This would make sense why the tendency graph so rapidly changed for QIII and showed a completely different tendency with respect to other quadrants. **Why is this area worthy of attention and such huge migrations?**

Since the area had a perfect rectangular shape, it means that one huge community was dominating over this region. So my assumption is that either migrants are one huge community or global intruders that did not want to allow this community to get such a huge slice of pie.



5. Here after analyzing the trend line with unique user placements and all user placements, it's clear that during the "non-spike" zone, the increase of unique users has higher slope, which means that more unique users were pushing during these hours compared to the "spiking" hours, which suggests proved the initial assumption of intrusion high intrusion (migrants) to the bigger community. **However, why do spiking hours usually start after 4-6pm?**



Turns out to be that 5-6pm is based on the UTC (Universal Time Zone) which is 1 hour behind Paris time, and all consistent "spike" zone appear to be after working hours in the France, which gained a huge community of participants 2.3M [<https://www.reddit.com/r/france/>] on reddit, which supports our findings in with 2.6M of total unique users participated during France Battle.