1. Logic test — attached. Must be done for 30 minutes.
2. SQL test — attached. Must be done for 60 minutes.
3. Calculate: DAU, Facebook DAU, traffic distribution by hours, top 10 domains by traffic. By attached sample clickstream (date, time, user\_id, domain). You can choose to use Excel or other programming language like R or Python.
4. An important metric (e.g Daily active user – DAU) goes down. Suppose we have a lot of user data: clickstream from the browser (basically — user\_id, url, timestamp, location), user action logs in every feature, time spent on pages, user hardware and software information, location and so on. We can segment our users by demographics and other criteria. (Note that all these segmentations are probabilistic by nature.) We also can conduct surveys and user interviews. Cốc Cốc ‘s main features are listed on https://coccoc.com/.

How would you dig into the causes? What kind of ideas (general and specific) do you have? In case you find the causes, how would you identify opportunities for recovering and growth? Suggest metrics to measure and setup goals based on those opportunities.

1. Assuming that we have Cốc Cốc Browser for Desktop and we are launching Cốc Cốc for mobile, what metrics do you think we should track?
2. Talking about your first experience of using Cốc Cốc. What feature do you like most? What feature do you expect to have?

Answers:

4.

**A. Finding the root cause:**

First, I need to get the better sense of how Cốc Cốc caculate DAU and who is considered an “active user”. Let’s assume an active user is someone who opens Cốc Cốc at least 1 time a day and requests for at least 1 webpage a day. A DAU is created when an user open an app and access a webpage.

Second, it’s important to know the time period when the drop occured. Say this was over the past 30 days. Follow up to this would be to check if this is a seasonal pattern. For example, there could be a correlation to Web browser usage and summer break.

Let’s say after checking the history data and finding no seasonal patterns, the drop is now considered an ad-hoc case and entails a diagnostic analysis.

The way I would address this issue is by considering of **(1) user issues; (2) performance issues; (3) feature issues** and **(4) external factors.**

(1) Let’s first think about **user issues**.

I would want to see if we can use data to identify a segment of the userbase that is at the cause of this problem to answer the question “Who are the users that we are currently losing?”. Examples of dimensions to analyze – platform, device, geography, demographics, new/old users, frequency of usage - low, medium, high.

(2) Next, I would want to look at potential **performance issues**.

Here would take a look at some of the health metrics of the product. For example:

* **User Satisfaction**—also known as Apdex Scores, uses a mathematical formula in order to determine user satisfaction.
* **Time to First Byte**—measures the time it takes to render the application on end user devices.
* **Time to First Paint**—measures how long it takes for the initial pixels to show on the screen.
* **Speed index**—checks how readily the above-the-fold content appears on a screen.
* **Time to interactive**—measures how much time passes before a web page is fully interactive.
* **DNS lookup time**—measures the time it takes for a domain lookup to occur while the browser loads the page.
* **Error rate**—tracks the percentage of request issues incurred in relation to the overall number of requests.
* **Peak response time**—measures the longest response time for a total number of requests that travel across the server.

(3) I also want to assess the **feature issues** which interact directly with users.

* Did we launch any new features? If so how might this have negatively influenced usage
* Was there a change to the UI that makes it harder to use?
* Was there any bugs that slowed down the workflow ?

(4) Lastly, let’s think about potential **outside forces** that could be having an impact.

* Market trend on web browsers
* User behaviors
* Competition – Chrome, FireFox, Safari/ New growing competitors
* Major events – holidays, strikes, protests, elections…
* Seasonal patterns
* PR/Branding issues

**B. Indentifying opportunities for recovering and growth:**

Optimizing with A/B testing. A higher level of engagement usually goes hand in hand with a good customer experience. Navigating through an app should come naturally and without effort. One way to work towards an optimal user experience is by continuously implementing improvements, design-wise and functionality-wise. These improvements don’t necessarily have to be massive, even small changes can have a major impact on the way the users are engaging with the app. Some metrics that should be monitored are Click-through Rate, Conversion Rate, Bounce Rate, Exit Rate, Engagement Metrics.

Another way to gain new active users is by implementing new meaningful features. As the app stores and our smartphones are bulging with applications for all kinds of purposes, it’s becoming increasingly difficult to choose one app over another, especially if all functionalities and features are pretty much the same. One way to attract and engage the users is by providing them with features that speak to the users on a personal level and therefore create a more meaningful experience. Metrics to be kept track are Repeat Visits, Avg. time on site, Retention Rate, Click-through Rate, Conversion Rate…

Last but not least is cultivating a community .Community spirit in an application can greatly boost the user experience. Cốc Cốc can make use of social media channels such as Facebook and Tik Tok to promote the app or highlight success stories, answer questions and generally create a robust and interactive community. Metrics to measure could be Reach, Impressions, Engagement Rate, Customer satisfaction score…

**5.** The KPIs that I believe Cốc Cốc should monitor for the mobile app are as follows. These, in my opinion, are the most crucial metrics, but there are certainly many others:

* Number of downloads and installations
* Active Users
  + Daily Active Users (DAUs)
  + Monthly Active Users (MAUs)
  + Stickiness Ratio: DAU/MAU
* Daily Sessions per DAUs
  + Total Sessions
  + Average Sessions
* Screen Reports
  + Screen Flows
  + Exit Percentage
* Retention Rate
  + Day 1, Day 2,..Day 30
* App Events Reports
  + Events Tracking
  + Events Attribute Tracking
* Revenue Reports
  + Total Revenue
  + Total Paying User
  + Average Revenue Per User (ARPU)
  + Average Revenue Per Paying User (ARPPU)
* Metrics for Customer Satisfaction
  + In-app Ratings
  + Net Promoter Score (NPS)
  + In-app Feedback
* App Performance Metrics
  + Crash Log

**6.**

Apart from the stable performance and user-friendly interface, there are some features that keep me an active user of Cốc Cốc for a long time:

The most prominent feature is the ability to download multimedia files directly on website with high speed. The mechanism of operation is similar to the IDM software that probably few of us have never used, Cốc Cốc allows multi-threading download to make the most of bandwidth, thereby bringing fast download speeds. Coc Coc's link capture is powerful and stable, almost all multimedia can be captured and loaded with wide range of quality options. For example, when I have a need to download videos from YouTube, I can choose with the maximum resolution of the video and the download procedure is quite straightforward.

Another advantage of Cốc Cốc is its ability to download torrents without the need for other programs like uTorrent. Without having to worry too much about other complicated stuff, I can get files directly from torrent sites just by several clicks.

The second feature that I find appealing the most is built-in Adblock. Despite being a website's primary source of income, too many adverts drastically diminish the user experience. As I previously mentioned, Cốc Cốc constantly strives to make consumers' lives easier, therefore they actively include AdBlock within the browser. This feature, which is accessible on both the computer and mobile platforms, will speed up website loading while also reducing the amount of data required to load advertisements.

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There are some features that I think Cốc Cốc should include to make surfing even more easier and more convenient. These are only recommendations, of course, but I believe they have the potential to significantly enhance customer loyalty and experience.

First idea in the list is Link Preview feature. The preview feature itself has gained popularity over time, operating systems implemented that in their tabs and Youtube did something similar with its player where you can preview the video frames when you move the cursor along the scrub bar. It’s a very useful feature where the reader will be able to get a sneak peak of what’s to come. This feature on web browsers can let us see quick previews of web pages when we hover over text links to those pages. Users then will be able to either recognize or contemplate on what they’re about to click.

Minimaps is the second feature that I believe has the potential to dramatically improve user experience. Text editors are notably famous for implementing this feature, where you can see the entire page on a small box, most commonly at the top-right corner of the page. You can move a marker on that minimap to scroll through those areas of the page itself. If this feature was included I browsers, we could go to wherever we want on a very long web page with little to no scrolling and searching.