Final Report

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Problem Statement

Zoo-goers include a wide range of people, including children, families, couples, young adults, elderly, and any animal-lover. Each of these demographics have unique challenges as regards interacting with animals at the zoo. Based on our interviews, children may find it more disappointing when an animal is not present in its pen, while adults might be more frustrated when they are unable to visit the zoo due to a busy work life. Given that the ongoing pandemic has drastically reduced zoo visits while increasing pet ownership, our group wants to design a mobile experience for the Detroit Zoo, so that people can interact with the animals when the animals and the visitors are not physically present in the same space. Also, we intend to design features that promote adventurous zoo visits through using digital experience to enhance in-person experience, so that visitors are more incentivized to explore more at the zoo.

Solution Overview

The Detroit zoo is a sanctuary for both animals and humans; it is a place to relax and rejuvenate. Hence, by offering a solution breaking the physical constraints, we believe that this will keep the users engaged with the animals they love even when they cannot visit the zoo in-person, improve zoo experiences for those who can visit in-person, and help the Detroit Zoo serve and profit from a wider audience.

An interaction design does not mean that it checked all the “boxes of the developers”, but that the design aligns closely to the needs of the users. Thus, we conducted interviews with our potential users and developed personas to better gauge the characteristics and settings of the target users, as well as to understand their pain points and needs.

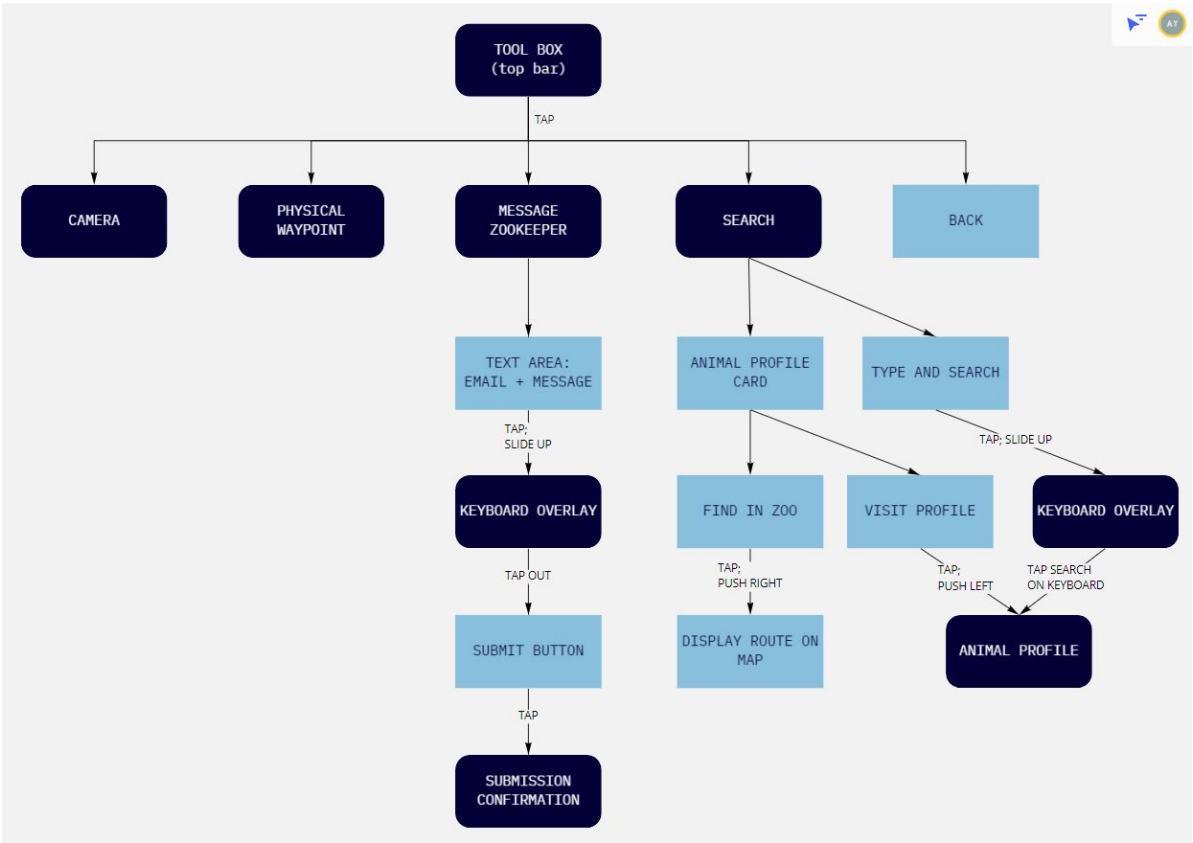
The common factor in the characteristics of our users was that, despite their busy schedules, they still want to take out time to interact with animals either digitally or in-person. For the purpose of this project, our users include: children who wants to learn fun and educative facts about animals and participate in interactive games at the zoo; and adults who wants to use zoo visits as quality time with family members, others want to

enjoy funny moments of preferred animals remotely, while the last category wants to take stunning pictures of zoo animals and enjoy cheap adventurous time out beyond the office.

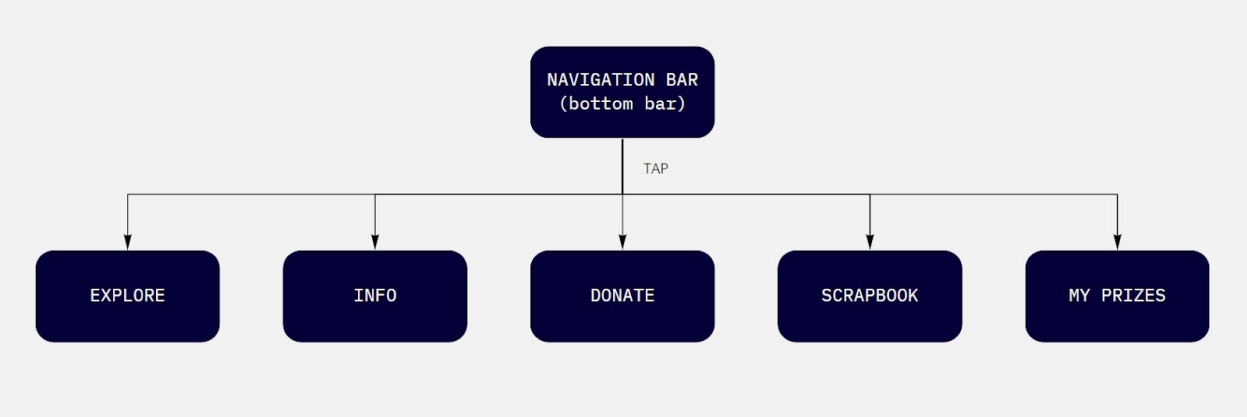
Having understood the pain points and goals of our potential users, our mobile app design incorporated tasks such as finding an animal profile/bio, take a live picture of an animal at the zoo for safari journal, participate in a game and check game progress/status, ask the zookeeper a question, redeem a prize, scan a physical touch point, and an opportunity to support animals at the zoo particularly during this pandemic by donate any dollar amount.

Final Design

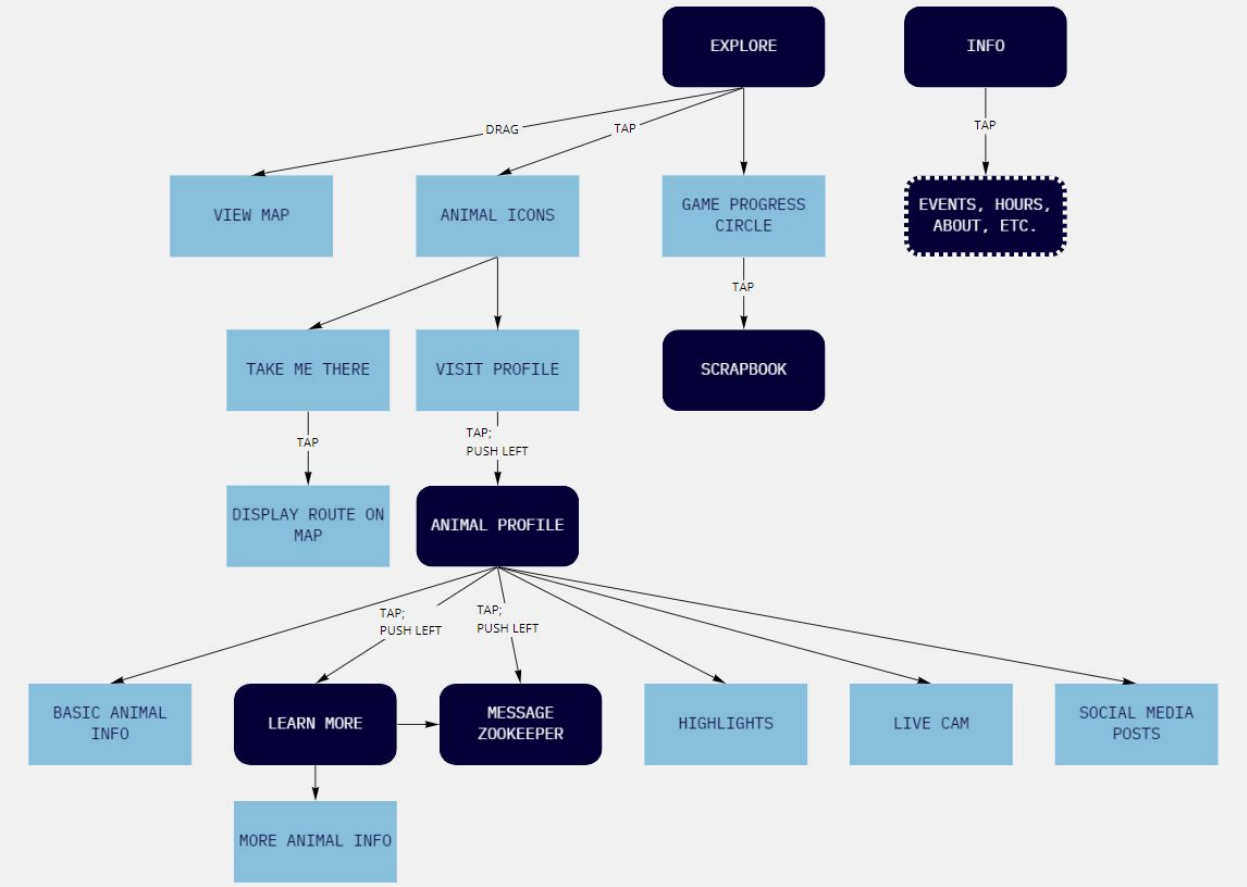
- All our features are linked together by two components that remain universal throughout the app: toolbox (on the top) and navigation bar (at the bottom).
    - Toolbox:



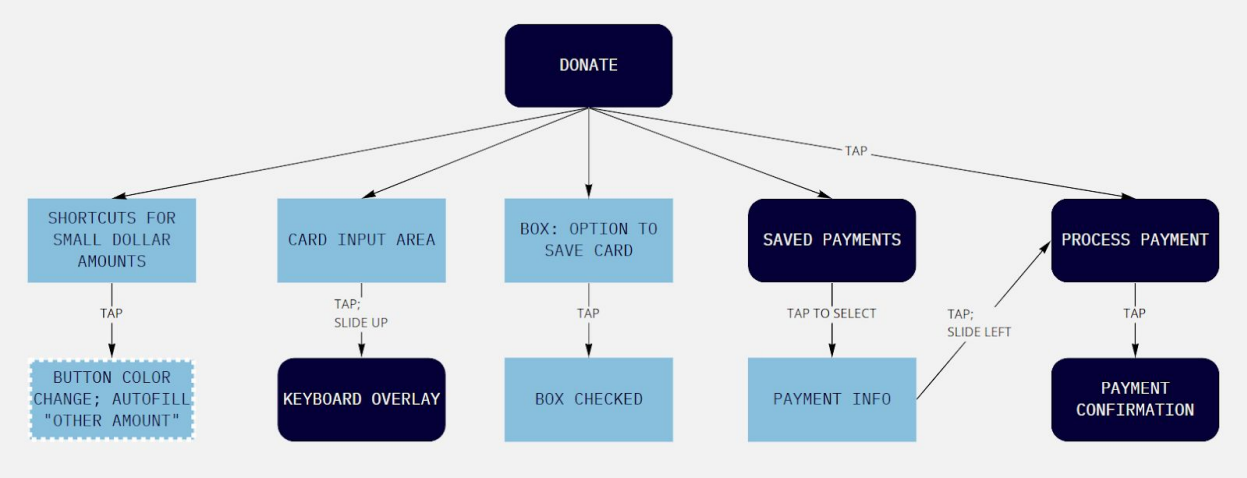
- Navigation bar (overall):



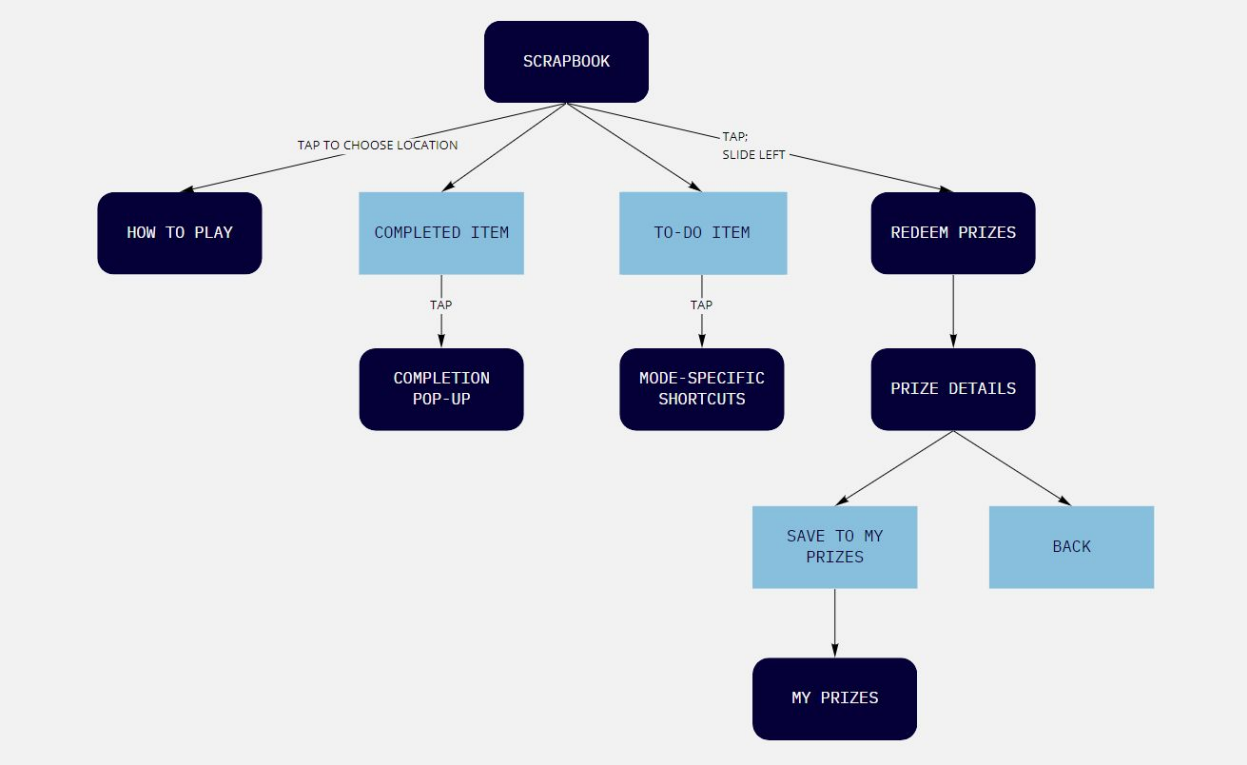
- Navigation bar::Explore + Info



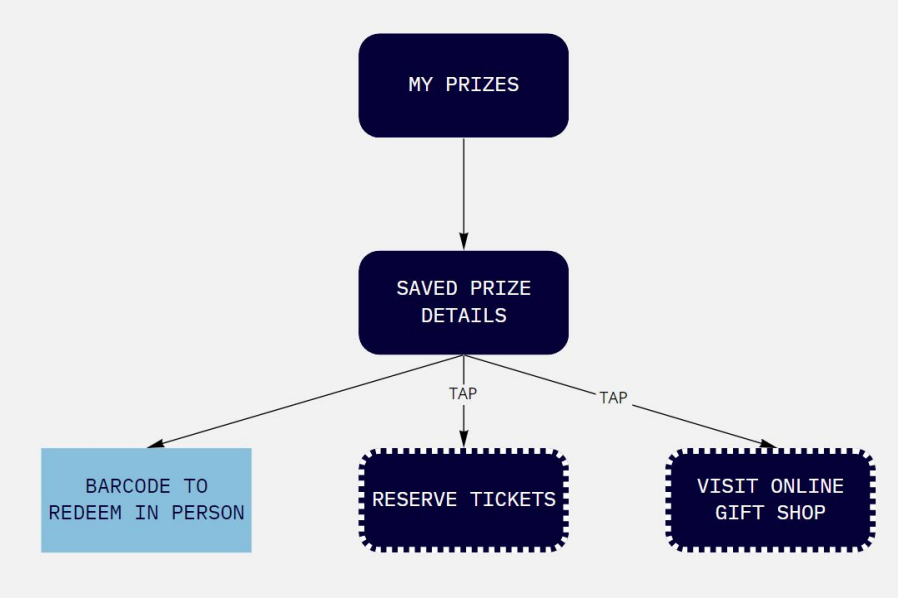
- Navigation bar::Donate



- Navigation bar::Scrapbook



- Navigation bar::My Prizes



- There are **2 aspects** of the project that we are most excited about.
  - **SCRAPBOOK - Collect Photos for Prizes**:
    - To (1) satisfy the need of taking memorable photos/selfies when going-out, and (2) incentivize users to spend more time at the zoo (both at-zoo and away), we designed a scrapbook for users to **collect animal photos** in exchange for **prizes**.
    - Every 5 photos collected wins a prize!
    - The **at-zoo** and **from-home** modes are slightly different to accommodate different conditions. The rules are given at the very beginning of the game, with the caveat that in-person visits unlock better prizes.
  - **DONATE** - **Send Love, Show Care**
    - The donation part is out of the motivation to help the zoo gain support from a wider audience during this pandemic.
    - The donation comes from the public, and all proceeds will go into caring for the animals. The low threshold for our donation (with shortcuts for $1-5) is hoping to attract public participation to the greatest extent, and also offering the opportunity for users to express their appreciation towards the animals and their care-givers at Detroit Zoo.
- We did not implement the following in the final prototype, because we prioritized the other more innovative ideas in our design due to time constraints:
  - On the “Info” page: we did not implement the links to the specific information (hours, events, etc.); we imagine these links would lead directly to the existing Detroit zoo website.
  - On the “Animal Profile” page: we did not implement what comes after clicking “Live Cam” and “Highlights”; we imagine clicking “play” on the live

cam would play the live cam in fullscreen mode, and highlights would play the recording in full screen mode.
    - On the “My Prizes”: we did not implement what comes after “Reserve Tickets” and “Visit Online Gift Shop”; we also imagine these links to lead directly to the existing Detroit Zoo ticket reservation page and their online gift shop respectively.
- We have used multiple **tool(s) and approaches** to develop the design throughout, e.g. persona, sketches, scenario, user flow chart, wireframe, prototype and corresponding usability testing, etc. Generally speaking, **usability testing** does most favor in shaping our final design.
    - We got a chance to make sure our design is a good practice for various user groups. In the beginning, our game can only be played at home, but based on the conversations from usability testing, we realized that users are excited about at-zoo enhancements too, which led us to design two game modes.
    - We were able to make adjustments on what we think our users actually want. For example, we found that they were really concerned about the well-being of animals; as a result, we carried out the “message zookeeper” functionality and even made it into one of toolbox items so that it’s visually prominent for users.
- **2 pros and cons** of usability testing:
    - Pros:
        - From observing their interactions first-hand and listening to their reasoning, it allowed us to understand where the users misunderstood/got stuck, so that we could make revisions based on real people and their experiences and tendencies.
        - From usability testing, we got a fresh perspective other than our own, which disclosed issues that we didn’t previously think of.
    - Cons:
        - Due to the pandemic, we weren’t able to conduct tests with the most accurate group of users. For one thing, we did not test on any child, who is one of our main target users.
        - Because we have prompted the users “tasks” instead of letting them explore freely, the wording of the task might already primed their understanding of the app, thus not 100% representative of the real-life scenario.

Design Evolution

Throughout the design process, our overarching goal was to enhance a more engaging zoo experience for users, at the zoo or away. In a bid to achieve this goal, our design evolved from sketches, paper prototypes, and wireframes that highlighted features such as taking pictures, finding animals' profile, and finding animal livestream, to an initial and final polished digital prototype where pictures taken could also be for the purpose of keeping a safari journal or participating in a game (for on-site zoo visits) and other features such as game progress, redeeming a prize (assuming the game was completed), and donate were emphasized. Over time, we realized the need for a map on the app and built in functions that would be beneficial for users to easily locate certain animals they would love to see within the zoo. In addition to the animals' profile, we incorporated the 'ask zookeeper' capability for users who may have additional questions that need clarification from an expert and social connections for users to share their zoo experiences with others via social media platforms. The physical touchpoint piece of the app was modified to make the game more fun for on-site zoo visits when users come in close contact with animals. Finally, with the ongoing pandemic, a couple of the users we interviewed expressed their willingness to support the good cause and continued operation of the zoo. After careful deliberation, we set the dollar range to between 1-10 to ensure great public participation.

Following findings from the usability testing and feedback from the instructional team and peer advisors, we added titles (in addition to the text labels in the bottom navigation) on each landing page, text label of game progress, increased readability of texts, articulated 'learn more' on the animal page to echo ideas related to animal facts, increased the navigation bar and its icons. The two biggest changes were expatiating the idea of the physical touch point and adjusted our app to simulate the existing app for Detroit zoo. Prior to the feedback, our idea of physical touch point was confusing to users and our peers, so we incorporated it as a core part of the game to address its ambiguity. Many interaction designs are not built off from scratch but on an already existing base, the idea of using the current Detroit zoo app to inform ours was welcomed and implemented.

According to Brown (2011), wireframe was described as a simplified view of what content will appear on each screen of a final product. The simplicity of wireframes allows designers to focus on other parts of the design such as functionality behaviors, provides a quick way to present concepts for interfaces, and enables rapid iteration on design concepts. With this in mind, the development of a wireframe helped the team to easily generate different design concepts by consolidating our different ideas and tasks from our paper prototypes. Also, the principles of our design aligned with the universal design principles such as accessibility, affordance, and flexibility-usability among others (Lidwell

et al, 2010). The advancement of mobile technology makes our app accessible and affordable by all users with little or no limitation. We also took into consideration the need for our design and environment (i.e., at the zoo or away) to synchronize in order to promote intended use and function. Finally, our choice of Adobe XD for digital prototype was primarily informed by the possibility for team members to collaborate, its compatibility with multiple computer systems, and flexibility for converting low to high fidelity prototypes without hassle (Santiago, 2020).

Impact

The biggest impact of our design is creating multiple options to interact with animals regardless of being at the zoo or away and making these interactions a worthwhile experience for the users despite varying needs (such as family bonding time or adventure). Particularly, in this pandemic, the donation piece of the app would increase the funds available to adequately care for animals. Finally, with this mobile app, children can learn more about animals while having fun playing the interactive game with others (either on-site or at home). Conversely, the negative consequence of this app would be a possible distraction for children who are obsessed with the game. Also, designing the app with a donation concept may be offensive to people who are not able to give for whatever reason.

Contribution Report

This project was brought to fruition by a team effort of four students: Angel, Sam, Guorong, and Dolapo; we all worked on the earlier assignments until “Storyboarding”. Angel and Gloria worked on the storyboards; Dolapo and Sam worked on an early version of the User Flow Diagram, and Angel updated it based on our latest prototype. Angel, Gloria, and Sam worked on all versions of digital prototypes:

- Angel worked on the remote search and ask zookeeper functions, and finalized the colors, buttons, navigation bars as team assets;
- Sam refined and completed the game, physical touchpoint, camera, and physical map search;
- Guorong fine tuned the donate function, and the info section of the app.
- Sam fixed all the errors in the prototype and worked on the final video demo;

Angel and Gloria worked on the presentation; Dolapo, Angel, and Gloria synthesized the method, design evolution, and findings for the final report.

References

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Lidwell, W., Holden, K., & Butler, J. (2010). Universal principles of design. [Beverly, MA]: Rockport Publishers.

Santiago, J. (2020). *5 of Today's Most Popular Prototyping Tools.* Retrieved from https://www.userinterviews.com/blog/best-prototyping-tools on Dec 3, 2020.