Assignment P4(Fall 2018)

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Question 1

The initial situation is the need to contact the professor or a TA about a grade for a particular assignment. The selection rules can be vary depending on the level of explanation required. If the student only needs a blanket explanation for his grade, contacting a TA would be ideal, If the student needs a detailed explanation focused on his assignment contacting the professor would be helpful. Two methods can be outlined for the task of contacting a TA or the professor. Writing an email and posting a note on Piazza can be used as methods to achieve the user goal. The difference with Piazza is that the student needs to ensure he or she is writing either a public question to everyone in the class, or a private question only to the instructors of the course. Series of operators will be similar for both methods. Open Piazza or Email, write the message, click send or post can be identified as the operators. The ultimate goal here is to alert the professor about the questions you may have about the grading you have received for a particular assignment.

Estimate Amount of time for each operator –

Opening Email/Piazza (including the time to type the url) ~ 3 Seconds

Writing the message (depending on each user) ~ 2 to 3 minutes.

Choose instructors(Piazza only) ~ 20 – 30 Seconds

Select “Post to” option(Piazza only) ~ 2 Seconds

Click send or post ~ 2 Seconds.

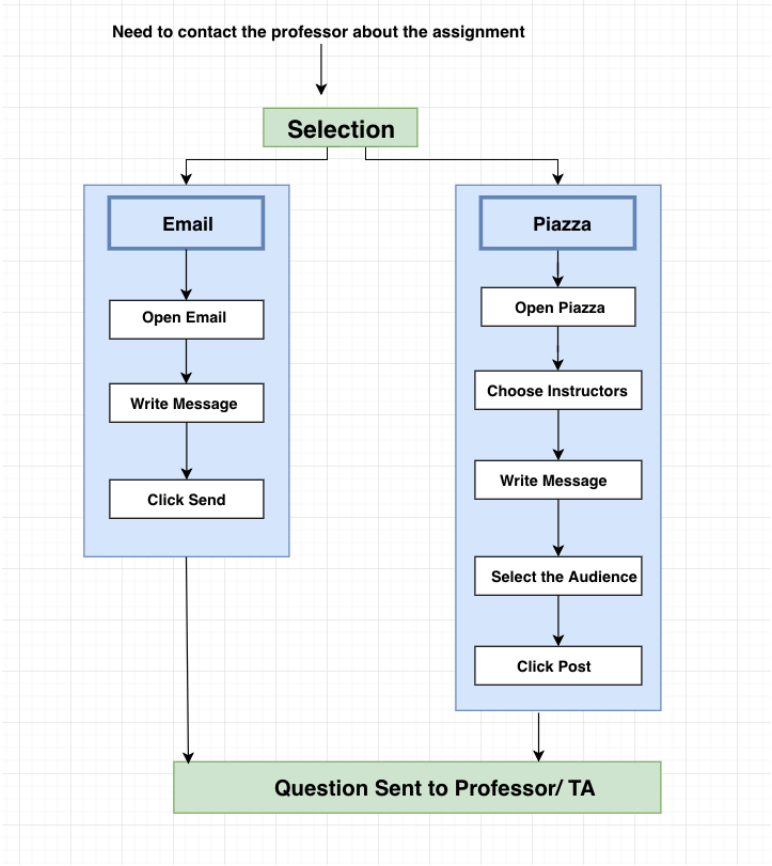

Figure 1. GOMS Model for contacting professor/TA

Question 2

For the hierarchy to submit this assignment, I have to complete the assignment. Then, finding the assignment in Canvas follows. Once found, I need to click on the “Submit Assignment” button to open up the interface where the option of uploading the completed assignment feature available. Clicking “Choose File” will open up a window to locate the assignment PDF from a local directory. There are optional actions to be taken such as adding another file or providing comments. After completing the required actions, “Submit Assignment” button should be pressed. If the submission is successful, Feedback will be provided informing that the submission is complete. Receiving the grade back can be done upon receiving an email from the canvas about the availability of the grade.

Users will have to wait until they receive an email saying that the grades are available in order to find the grade. A waiting period will be applied to this task analysis.

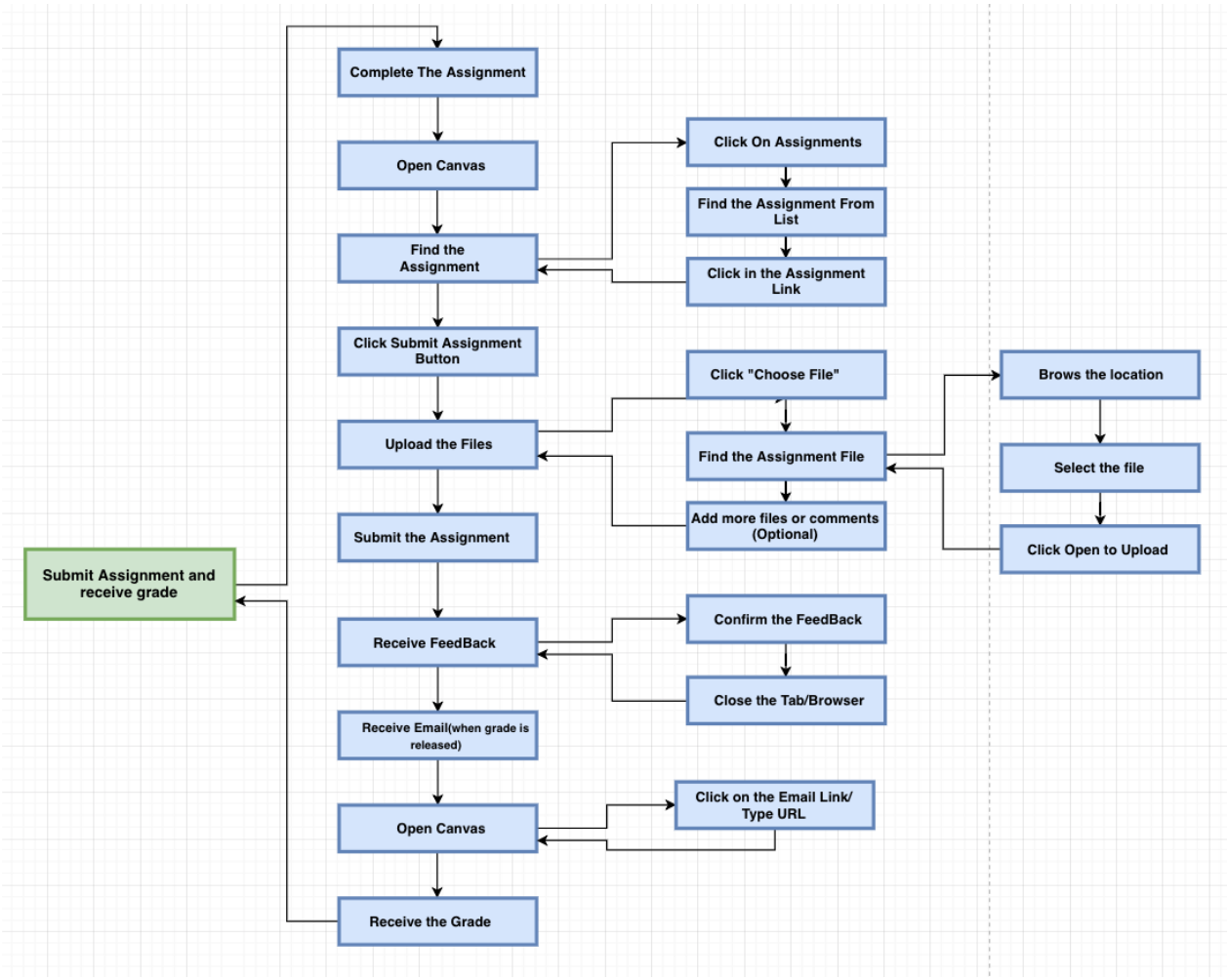

Figure 2. Hierarchical task analysis of submitting an assignment.

Question 3

Every time I am visiting a National Park, the problem of navigating to points of interests, trailheads arises due to the unavailability of cellular signals in the parks. I have to rely on the park maps provided upon arrival.

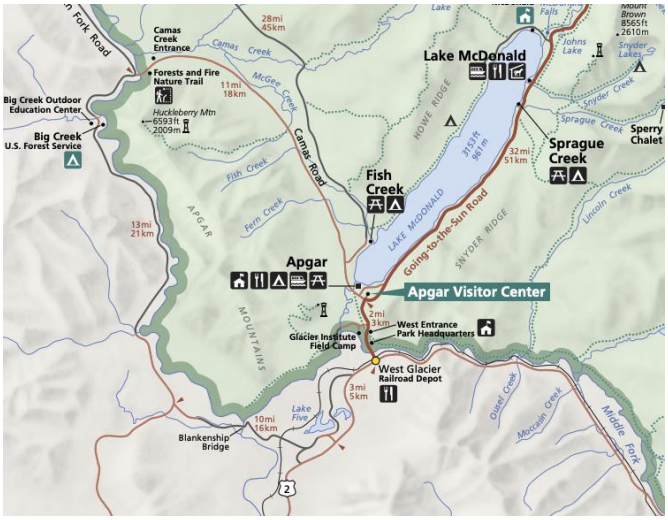

Figure 3. National Park Map example.

By looking at the map, its clear which route to take if you are at a major point such as “Visitor Center”. But as soon as you start driving, alerts by a passenger on where to take turns, where stop for pictures by looking at the map and surroundings simultaneously. The passenger can use road signs or river crossings to assume the current location of the moving vehicle. Some Cognitive activities can be offloaded to a passenger by asking them to keep track of them about the current location of the vehicle by comparing points of the map to the signs on road. In this scenario, the passenger is the artifact which the driver rely on for navigation alerts. As the driver, you still have to focus on the road for other vehicles, wildlife and signs for reduced speed. The mind has to deal with less information and be on alert for possible commands from the co-passenger and act accordingly. Short-term memory is required to remember the places that you have passed through. By looking at a point on a map and the starting point, the passenger can get a sense of how much further to be traveled to get to a particular place. By using the concept of distributed cognition, drivers can extend their minds by offloading the task of looking for directions on to passengers and focus on reaching the destination.

As per social cognition aspect, driver an passenger form a unit to accomplish the task of navigating. While the driver is focused is maneuvering the vehicle, the passenger is given the responsibility of determining the directions and

whereabouts. Social cognition can reveal if the driver is about to arrive at a point or how much further away from a point of interest and provide comments beforehand to avoid driving past the point.

Road signs are parts of the system which affect the success of the entire process. Driver and passenger's ability to interpret the road signs and create a mapping between the signs and the physical map. The system may results in failure if the passenger or the driver are unable to read or understand the road signs.

Question 4

Shopping on Amazon.com is a good representation of distributed cognition. After selecting an item to buy. Amazon prime members have an option of buying with a single click as shown in figure 4.

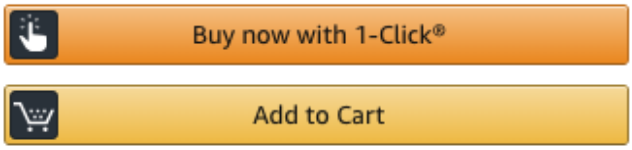

Figure 4. Amazon.com buying options.

If a user clicks on "Buy now with 1-click", order for the selected item will be placed without requiring further actions. If the user placed the item in the cart, a few more actions will be required to complete the transaction. By having a Buy With 1-click button, some steps of the buying process are offloaded from the user cognition and indicates the perception of a swift buying process.

Adding Items to cart makes the users create a list of items to buy without having to keep track on which items to buy. Also, Amazon keeps a list of every item you searched and browsed. If you had forgotten which Items you wanted to buy, you can look up the browsing history. Oder history also helps users with the details of every order they made in the past. In that way, users do not have to keep records of the items they ordered.

Order tracking system takes the cognitive tasks of manually tracking the order away from users by visually displaying the order status and estimated arrival

dates and times. Order tracking is mostly done by entering a tracking number to a courier system interface. Instead of looking up long and complex tracking numbers, a Simple and informative graph as shown in figure 5 eliminates some cognitive tasks and provides all the details about their orders. Interfaces of the Amazon perform many cognitive tasks which would have been performed by users otherwise

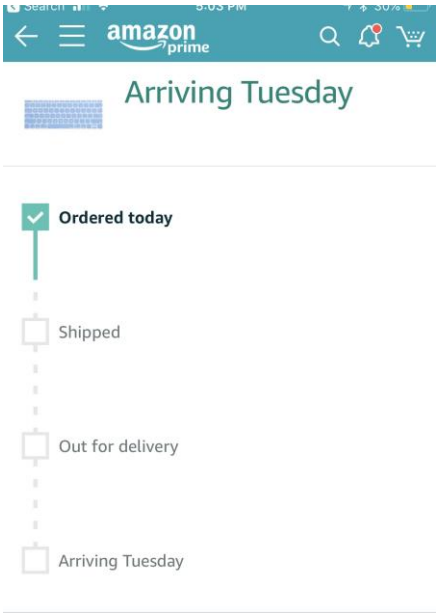

Figure 5. Amazon.com order tracking interface.

References

1. Udacity lectures.
2. https://www.draw.io/ to generate the diagrams.