

# Assignment P4

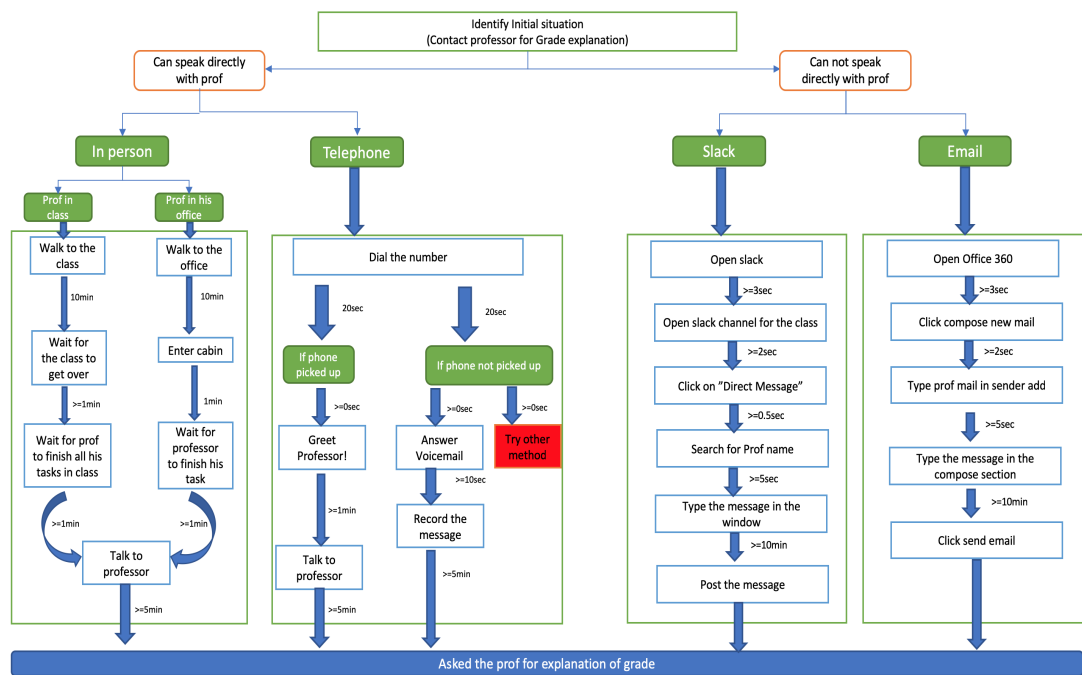
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## Question 1

### Designing GOMS model

Figure 1 is a self-descriptive pictorial presentation of the GOMS model for defining Goals, Operators, Method and Selection rules for asking a professor for an explanation of the grades.



**Figure 1:** GOMS model for asking a professor for an explanation of the grades.

## Question 2

### Hierarchical Task Analysis

In this question, hierarchical task analysis is written down as simple text steps for submitting this assignment to the canvas and receiving feedback on the same.

#### → Submit assignment to the grader and receive feedback

##### ◆ Complete the assignment

- Read the assignment
  - Open any web browser chrome/safari/firefox
  - Copy the [link](#) for assignment on the URL and hit enter
- Check assignment
- Listen to course lectures
  - Open any web browser chrome/safari/firefox
  - Copy the [link](#) for Udacity in URL and hit enter
  - Login to Udacity using Gatech credentials
  - Open Human-computer interaction course
  - Browse lecture 2.7 and 2.8
- Read the Reading material
  - Open any web browser chrome/safari/firefox
  - Copy the [link](#) for canvas in URL and hit enter
  - Login to canvas using Gatech credentials
  - Select courses
  - Select Course “*Human-computer Interaction*”
  - GoTo *files*
  - Open *Required Readings*
  - Download week8 reading material
  - Read the material
- Develop a personal understanding of this week material
- Write the assignment
  - Open any web browser chrome/safari/firefox

- Open [link](#) for google docs in URL and hit enter
- Write assignment

◆ **Submit assignment in canvas**

- Login to canvas
  - Open any web browser chrome/safari/firefox
  - Copy the [link](#) for canvas in URL and hit enter
  - Log in with your Gatech credentials
- Locate the assignment submission page
  - Click on *courses*
  - Select *Human-Computer Interaction*
  - Click on *Assignments*
  - Click on *Assignment p4*
  - Click on *Submit Assignment*
- Submit assignment
  - Scroll down to *Submit assignment button*
  - Click *choose file* button
  - Select the file from the file browser
  - Review the name of the file chosen
  - Click *Submit Assignment* button

◆ **Wait for the grader to grade your assignment**

◆ **Receive Canvas Notification**

- Notice the email notification on your phone
- Open the canvas notification email
- Read the email for the notification

◆ **View Grade and give feedback**

- Click the link in the notification which will redirect to open your canvas application
- Wait to see the assignment page on the application
- Read the grade
- Comment on the right-hand side of the page
- Read the instructor feedback and reply back if you want to clarify something.

## Question 3

### Distributed Cognition

**Situation:** Navigation comprised a married couple(Driver and passenger), a map, and any other artifacts the individuals use or generate(Let's consider a pen as another artifact here).

- **Driver**

- **Perception:** The driver is engaging his cognition in focusing the path where he is driving using his eyes. He is continuously focusing on the road to respond to any events like a turn or take over.
- **Memory:** The driver remembers the instructions told by the spouse in his working memory and short term memory to navigate on the road. For e.g the spouse may tell that in 100meters they have to take a left turn, so the driver is storing this information in his working memory.
- **Reasoning:** The driver is constantly engaged in reasoning with the speed of the vehicle to avoid any collision or to overtake other vehicles. He also has to reason for controlling the speed in traffic say for example in red light.
- **Acting:** The driver is steering the wheel, applying the brakes, controlling the accelerator and clutch. All this comes into the acting part.

- **Passenger**

- **Perception:** The passenger is focusing his cognition in reading the map and deducing the anticipated next turns and paths to navigate. he/she is also involve in getting familiar with the road and its environment so that she/he can direct the driver on controlling his speed.
- **Memory:** She is storing the map direction, map symbols and surrounding images like the market, moving traffic, subway on his working and short term memory to help the driver in navigation.

- **Reasoning:** Passenger has to involve his reasoning to correctly read the map, to correctly read the symbols in the road to better suggest the driver.
- **Acting:** After reading the map and symbols she has to speak to his spouse the directions to follow.
- **The Map**
  - **Memory:** The map here serves an important role in storing the complete path in a piece of paper(long term memory), which offloads a lot of cognition from the passenger and driver to the map in deciding the path.
- **Pen**
  - **Memory:** Act as a short term memory to note something important or directions or landmark to reduce cognition load.

## Social cognition

Social cognition involves social interaction and relationships which can help in tasks involving the cognition load. In this example of navigation, social interaction and relationship serve an important role in terms of social cognition. Consider the following points which are not revealed in the distributed cognition:

- The understanding between passenger and driver can greatly reduce the cognition from the driver. For example, a passenger might be aware of the habits of the drivers of forgetting signs and due to a better understanding, the passenger can help the driver in reminding the situation he is unaware of.
- If some symbol or part of the map is confusing or missing then the passenger can ask the localities for the navigation which is one big advantage of social cognition.

We can clearly state from the above 2 examples that social cognition offers some advantage that distributed cognition doesn't offer. The **success** of the social cognition relies on the many factors, the most important factor here is the **trust between** the passenger and driver which makes the social relationship strong. If the driver can not trust the passenger than it is unlikely that the cognition load is reduced. The better social relationship can induce **less energy in conversation** in

contrast to following instructions from a stranger where you will have to first get comfortable to establish a trust.

## Question 4

### Distributed cognition as a lens

**Task:** Rent a place/home to crash using **Airbnb**.

**Interface Used:** Airbnb

Airbnb<sup>1</sup> is an application which offers you to rent a homestay when you are traveling abroad or any other places locally. People list their home as “available to rent” in this application and people who are visiting the place can simply rent the homestay as long as they want using the interface of Airbnb. This application is very popular as it offers you the home of another person in some place instead of a hotel which is a great gesture of hospitality.

### Pieces of the System:

- Myself
- Airbnb application
- Owner of the house

### Analysis

- **Myself**
  - **Perception:** View the various listing of homestays available in the Airbnb application interface and analyze them with my needs.
  - **Reasoning:** I might want to look for homestays specific to a locality nearby I want to go and which host vegetarian food options. I need to perform reasoning to look if the place satisfies all my needs.
  - **Memory:** I need to remember my needs and specific personal requirements. Personal tastes and needs are generally stored in the long term memory

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<sup>1</sup> <https://www.airbnb.co.in/>

- **Action:** I need to browse a list of the homestay and select the one I want and then proceed to book, pay for the rent using my credit card and greet the owner of the house and ask any information I want to know about the house.
- **Airbnb Application**
  - **Memory:** It serves as a long term memory to store all the relevant information I need to know about the place I am visiting.
  - **Reasoning:** Interesting thing in reasoning is that I think applications can reason what we are doing using artificial intelligence and deduce important information. For example, the Airbnb interface on the backend might be storing my browsing pattern and reasoning my interest based on that, so that next time it can give me better suggestions.
  - **Action:** Put my request in the purchase list, and contact the owner of the house once I finish the booking thereby reducing a lot of cognitive load of interaction with the owner.
- **Owner of the house**
  - **Memory:** The only thing the owner of the house has to remember in his working memory is to reply to the queries of the people who are interested in renting his house.
  - **Action:** Owner needs to make sure the house is clean and made available to rent once the booking is confirmed.
  - **Reasoning:** Once the booking is confirmed, the owner will receive a notification but he needs to be mindful to check if the user is asking for specific needs and reason whether he can satisfy that need or not.