# CS6750 – Assignment P4

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## 1 QUESTION 1

### Initial Situation

A student desired a detailed explanation of the assigned grade from a professor.

### Selection Rules

If the matter is urgent, such as the deadline for re-grade is nearing, a phone call would be best.

If the request must be looked at by multiple entities, such as TAs and professor, a private Piazza post would be best suited.

Alternatively, if the matter is not urgent and private or if the message is stated in a formal outline, an email may be the most appropriate method of communication.

### Methods

1. Email
2. Phone
3. Piazza

### Operators that comprise those methods (plus estimated time)

1. Email
    a. (05 min) Retrieve professor's email address
    b. (30 min) Draft the email request to the professor
    c. (05 sec) Send the email
    d. (02 days) Await and evaluate response.
2. Phone
    a. (05 min) Retrieve professor's telephone number
    b. (30 min) Prepare talking points and reasoning for call.
    c. (05 min) Attempt to call professor, leave a message if no answer.
    d. (02 days) Await or evaluate response.

3. Piazza
    a. (30 min) Draft a message request for the professor.
    b. (05 sec) Send the request to professor.
    c. (02 days) Await and evaluate response.

**Goal**

The goal is to receive a detailed report from the professor on the grading scheme and/or reasoning behind the grade assignment.

## 2 QUESTION 2

Submit Assignment P4

1. Review Udacity Lectures
    a. Determine the lectures to review
        i. Open a web browser
        ii. Navigate to http://omscs6750.gatech.edu/summer-2019/
        iii. Locate on Course calendar the lessons for week 7.
    b. Watch the lectures
        i. Open web  browser
        ii. Enter https://www.udacity.com/ in browser
        iii. Click Enter
        iv. Click 'My Classroom'
        v. Click 'Continue' on Human-Computer Interaction class
        vi. Scroll to lessons for week 7 and click 'Start'
2. Write up the text for Assignment P4
    a. Answer Question 1
        i. Open a text editor
        ii. Type the answer for the question prompt of Question 1.
    b. Answer Question 2
        i. Open a text editor
        ii. Type the answer for the question prompt of Question 1.
    c. Answer Question 3
        i. Open a text editor
        ii. Type the answer for the question prompt of Question 1.
    d. Answer Question 4
        i. Open a text editor

ii. Type the answer for the question prompt of Question 1.

3. Format the Paper
    a. Read and review material from JDF formatting document
    b. Format the text of all four questions in the JDF format.
        i. Apply Palatino text style
        ii. Apply Font size
        iii. Apply Headings
        iv. Apply margins
    c. Save as PDF
        i. Click on 'File'
        ii. Click on 'Save As'
        iii. Type file name 'Assignment P4'
        iv. Select 'Word Document' as file type
        v. Click 'Save'
4. Submit to CANVAS
    a. Locate submission page
        i. Open Browser
        ii. Login to CANVAS
        iii. Enter https://gatech.instructure.com/ URL in web browser.
        iv. Enter GTAccount and Password
        v. Click LOGIN
        vi. Click 'Send me a push' for two-factor authentication
        vii. On the user phone, click 'Accept' at notification pop-up.
    b. Submit for grading
        i. On CANVAS, click 'Human-Computer Interaction' on dashboard.
        ii. Click 'Assignments'
        iii. Click 'Assignment P4'
        iv. Click 'Submit Assignment'
        v. Click 'Choose File'
        vi. Select the PDF created from the formatted text file.
        vii. Click 'Submit Assignment'

Analyze Grade and Feedback

1. Retrieve grade/feedback
    a. Locate grade page

i. Open Browser
ii. Login to CANVAS
iii. Enter https://gatech.instructure.com/ URL in web browser.
iv. Enter GTAccount and Password
v. Click LOGIN
vi. Click 'Send me a push' for two-factor authentication
vii. On the user phone, click 'Accept' at notification pop-up.

b. View grade details
i. On CANVAS, click 'Human-Computer Interaction' on dashboard.
ii. Click 'Grades
iii. Click 'Assignment P4'
iv. Read text in Right-hand column

2. Evaluate feedback
a. Locate PDF file of original submission
i. Browse to local location of 'HCI-CS6750' folder
ii. Open PDF file used for submission of P4 assignment.

b. Compare feedback to original submission.
i. Locate deductions in instructor feedback
ii. Read submitted assignment and match to feedback.
iii. Record any discrepancies.

c. (Optional) Respond to feedback.
i. Locate contact information of instructor and TAs
ii. List discrepancies between feedback and original document.
iii. Request re-evaluation or re-grade of P4 assignment.

## 3 QUESTION 3

A distributed cognition system views task engagement from the perspective, not only of the user, but also of the user's environment, tools, and utilities (commonly referred to as artifacts) as offloading cognitive overhead from the user of the system. As such, according to the distributed cognition model, the cognitive load of any task is evenly distributed among the users and the artifacts.

**Analyze Mapped Navigation**

Before the dawn of the GPS enabled navigation, drivers had to rely on a complex interaction between maps, directions, other human interactions and interpretations in order to arrive to their desired destination.

If traveling without another passenger, the driver must navigate using one of three methods. The driver must drive in a direction, then stop and ask a stranger for further directions continuing this in a cycle until reaching their destination. Alternatively, the driver may look at a map, drive a certain distance, then stop t look at a map again. Finally the driver may look at a map, record or remember specific street names or landmarks and attempt to navigate as far as possible on memory and recognition, relying on human reasoning and perception to navigate the map reproduction in their mind, finally either reaching their destination, or having to revisit the map again.

Alternatively, if the driver has a willing passenger to help in the course of navigation, the cognitive load may become much better distributed. In the situation of the passenger and driver sharing one car, the cognitive load is diversified but increase in complexity. The passenger can observe the map for proper route planning. The passenger is responsible at this point in observing the road, street signs, and landmarks in order to determine current location and further navigational checkpoints to get to the desired destination. The driver, on the other hand, must is relieved from navigation in order to keep track of road conditions and driving rules of the road. However, user communication is a factor which may complicate navigation, rather than simplify it. In the basic form, having the passenger successfully communicate the necessary direction to the driver can be difficult to interpret, can come at a time too late for the driver to make proper maneuvers, and relies heavily on the passengers interpretation of the map, which may not be correct or contain errors. As such, the map is left up to interpretation as to the landmarks, streets, and navigational directions given to the driver.

**Analyze GPS Navigation**

GPS navigation replaces the human navigator in the memory, reasoning, communication and planning components of driving. By storing previous addresses, currently enter address, and favorite addresses in memory, in the GPS memory the user is not forced to remember the addresses himself. Resoning over fastest routes to take, shortest routes to take and avoidances in highways, tolls, or fer-

ries is a capability presented by the GPS which previously is not always possible to even determine with only a passenger and a map. Path planning is also completely absorbed by the GPS which plans a path per the driver's preference and executes it to the best of it's capabilities. However, the GPS is limited only to the area where signal availability is strong. Whenever a signal strength falls below a certain threshold, the GPS capability is reduced to zero and any passenger navigational assistance would be greatly more useful to a driver than the GPS. Additionally, communication is an incredible differentiator between GPS and a passenger. Ideally, all navigational adjustments are announced by both systems. Then, compare and contrast this same situation with a lone driver using a GPS. Focus specifically on the social components that are present with a human navigator but absent with a GPS navigator. A human passenger can be corrected if route adjustments are delivered late, misunderstood, or incorrect. A GPS exhibiting these behaviors cannot be corrected and becomes useless to the driver if directions arrive late or are not interpretable.

**What does social cognition reveal about the situation that distributed cognition does not?**

Social cognition theory focuses on unpredictable interactions that happenduring execution time, not during pre-planning. Situations such as late route adjustment declarations are a perfect example. With a GPS, a late announcement cannot be changes or corrected. With a passenger, however, the person can be corrected and instructed to announce route changes earlier to allow the driver time to adjust.

**How might the social relationships among the parts of the system affect the success of the system as a whole?**

The social relationships of the parts of the system are crucial to proper navigation. On the one hand, a passenger navigator must be able to communicate clearly and timely with the driver. But his or her perception of landmarks and streets is performed in real-time and analyzed against a map in order to determine correct heading. GPS navigation, howveer, has no observation of real-time perception of any other parameter except position of the vehicle. Landmarks, streets, or checkpoints are completely irrelevant to the GPS and any communication of the device to the driver is solely at the discretion of the technological

company. Misunderstood words, announcements, or adjustments cannot be corrected by the driver if they do not fulfill his needs.

## 4 QUESTION 4

**Learning From Udacity**

The task of learning enjoys insurmountable benefits from digital tools such a Udacity. The Udacity platform, however, is a complex distributed system with components that must work together in order to fulfill the task of learning. Some components include the student, the teacher, the video content creator, the host delivery website, the website memory of videos and suggested topics for further education as well as the website accessibility functions. The student, the teacher and the video content creator are all humans that must successfully pass on information from the teacher to the student in the most effective manner. The Udacity platform contains an account for the student which keeps working memory of where in the course the student has paused learning, in order to resume the work at a later time. The platform also provides suggestions for the users to continue education after a certain class is complete. Additionally, the platform is available through different modes of application or website, in order to facilitate learning in any context environment.

**Cognitive Tasks**

The Udacity application completely contains the aspect of memory required to keep track of learning plans, progress, and paused state. The student contains the memory aspect of retaining new information received through the platform. And, the instructor maintains the memory of the content required to be delivered through the platform. Reasoning is a task which applies to the Udacity platform as it must reason over the learned materials in order to suggest new study content for the student. The student, in turn, must reason over the content delivered in order to grasp concepts of topics covered. Action is prescribed most to the student as the platform leaves content navigation completely in the hands of the user.