**Milestone 1 (140 pts): Collection, Interpretation, and Documentation** (25% of final project)

**Turn in the following documents (1 through 5) either in text, pdf, doc, or docx:**

**These should be based on how users currently perform the task (e.g., buying things online) rather than asking questions about your new interface that you haven’t designed yet.**

1. **Questionnaire answered by 10 participants with at least 20 questions. Create questionnaire to gather information about the users and usages. Thus, you can create stakeholder profiles from those questionnaires. [20 pts]**
2. **Stakeholder Profiles (check lecture 8). From the feedback collected on the questionnaires, extract context of use, cognitive ability, physical ability, individual profile for each identified stakeholder. If you want to add something more, you can do so. Thus, you are getting 10 stakeholder profiles – they may have similar information. [20 pts]**

[Additional reading: This is in the context of HCI design. It includes four distinct stakeholder groups (Donoghue, 2002):

* Users
* Engineers and designers
* Sales and marketing personnel
* Managers

Users are the primary stakeholders since they use the design directly. Engineers and designers are secondary stakeholders since they supply input or receive output for the design. Managers are facilitators since they help to maintain the design. Sales and marketing personal are indirect stakeholders since they are affected by the design, but they don’t have direct contact with it.

Users expect to have a successful experience with the user interface (UI) the first time around. Because the users are the people who determine whether something is useful, the characteristics of your users will go a long way toward determining what is actually usable. However, users look for some general goals when they use an interface (Donoghue, 2002):

* The UI must be easy to learn.
* The UI must solve the user's needs.
* The UI help must be both easily accessible and effective in resolving the user's problem quickly.

Defining a user‘s profile is an essential prerequisite for designing a HCI. The user profile will influence the design and evaluation of an interface. Badre (2002) suggested the following activities to generate a user profile:

* Identify the relevant individual differences.
* Identify and specialize the cognitive processing capabilities and limits.
* Generate audience definition and categorization.

Individual differences can be grouped into four categories (Badre 2002):

1. Knowledge, experience, and skill: Individual users may differ in level and type of education as well as in their knowledge, experience, and skill levels. There are several key factors in this category that are determinants of a user's performance. These factors describe the cognitive abilities and styles of projected users as well as their knowledge and experience of the projected HCI’s domain.
2. Personality factors: Affect the ease of user acceptance for interacting with and navigating a HCI. Such attributes as tolerance level and motivation should indicate how much time users will spend trying to use the new HCI to perform a transaction before giving up.
3. Physical and demographic attributes: Demographic attributes with implications for the

design of a HCI are age, gender, salary, and mobility. An audience definition

statement should take into account factors related to physical capabilities and

limitations. Issues that might affect design include the use of glasses

(nearsightedness, bifocals), left- and right-handedness, auditory devices, and other

visual and motor aids.

1. User levels: The designer should take into consideration the users' varying levels of

expertise with the computing environment used for the HCI. Level can range from

novice to master level.

The usability effectiveness of designs depends in great part on their compatibility with the user's information-processing capabilities and limitations. Designers must take into account the users' cognitive and perceptual limits and how people are likely to process information in an interactive environment. There are some basic universal human information-processing characteristics, which affect the way people store, remember, and manipulate information, which in turn have implications for HCI design. For example, if the user has selective attention, this means both creating designs that draw user attention to a particular screen location and optimizing the ease of locating displayed information such as using a unique bright color to draw attention to a displayed link can increase the chances that it will be noticed before other links.

Generating an audience/stakeholder profile means generating a document that specifies the relevant characteristics, the range and frequency values of the identified characteristics, and how this specified information might impact design decisions.

These profiles can be also seen from the marketing point of view. Eisenberg and Eisenberg (2006) discussed the creation of primary stakeholder profiles in terms of marketing, which essentially means to persuade the user that the interface is worth using. Profiles connect three different dimensions of information:

1. Demographics: This segments some of the persona features. For example, demographic data shows such data as the user's gender, location, and income. (mentioned as individual profile in our lecture slide)
2. Psychographics: This segments some of the persona needs and determines questions that each persona may ask. For example, a spontaneous type and a competitive type will ask different questions and will want different types of information.
3. Topology: This allows you to segment by determining how complex the persuasion process is; that complexity is based on a customer's perceptions and experiences.

Regarding the topology dimension, Eisenberg and Eisenberg mapped a four-dimension model for the process of persuasion in sales:

* Need: This is the urgency that a user feels for a product or service.
* Risk: This is the amount of risk the user is willing to accept regarding such features as a career or self-esteem.
* Knowledge: This is how much knowledge the user has about the product, which can affect need and risk. For example, if someone feels he doesn't have enough information about a product or service, the risk factor for that user is higher.
* Consensus: This is the understanding during the persuasion process of how many people need to be convinced and when.]

1. **Use Case diagrams/Scenarios/flow of events. You may draw use case diagrams (actors, systems etc. connected with lines) or you can put text descriptions along with basic and alternative flows. From 10 questionnaire and stakeholder profile, you may find identical actors. Hence, each questionnaire may not give you a separate actor interacting with the system. On the other hand, you may have other external entities interacting with the system. [30]**

[Reminder: One of the most popular and successful approaches for documenting business processes, events and responses is a technique called use cases developed by Dr. Ivar Jacobson (Jacobson et al. 1993). Use cases describe the business process, and document how the business works and the business goals of each interaction with the system. These use cases are then extended to show how the human interaction will support the business goals.

The interactions within the use case should be contained, initiated and seen through to completion by an actor. The use case should further result in achieving a business goal and leaving the system in a stable state (Reed 2002). The nature of a use case is to define the "what" of a system.

An actor represents anything that needs to interact with the system to exchange information. An actor is a user, a role, which could be an external system as well as a person.

Benefits of use cases are highlighted by Witthen et. al (2000):

* Facilitates user involvement.
* A view of the desired human interaction’s functionality from an external person’s viewpoint.
* An effective tool for validating requirements.
* An effective communication tool.

Additionally, you may find this helpful - https://www.codemag.com/article/0102061/Introduction-to-Gathering-Requirements-and-Creating-Use-Cases]

**These deal with the functional requirements of your new app but do not define the interface itself.**

1. **Requirements Documentation – Example/explanation posted on BB under Final Project folder. [50 pts]**
2. **Project Management Documentation – Example/explanation posted on BB under Final Project folder. [20 pts]**