Digital Assessment

Course: Human Computer Interaction

Code: CSE 4015

Slot: B1 + TB1

Submission Deadline: 27th October 2019 Midnight

[6 + 2 + 3 + 3 + 3 + 3]

1. Perform GOMS analysis and Keyboard Level Analysis for the application; you are developing in J-Component. Evaluate the same using Shneiderman's eight golden rule. How do "golden rules" and heuristics help interface designers take account of cognitive psychology? Illustrate your answer with examples.

2. In a virtual reality design environment, the control device is a small, position- and pressure-sensitive rubber ball. When you pick up and move the ball a new object moves in the virtual environment. When you squeeze the ball the object is fixed in its current position. Consider how you might use the device to move existing items within the environment, and describe this using the 3-state model.

3. Perform a Hierarchical Task Analysis and Harel's state chart of an Elevator system. (Ex.:- Consider the elevator available for the faculties in SJT block in order to make necessary assumptions and operations.) Develop HTA and state chart diagram to support concurrency.

4. Pokemon GO is a game that uses augmented reality to allow players to move through the environment and "catch" virtual Pokemon with their mobile phone. But why is it so popular? What ethical issues have been illustrated by encouraging people to capture Pokemon? What opportunities does this present to benefit society at large, or tackle real world problems?

5. Self-driving cars and driven assistance for vehicles is a hot topic today. Please read the MIT Tech Review article on Uber self-driving car testing going on in Pittsburgh – "No Driver, No Problem?", by Will Knight, MIT Technology Review, Volume 119, No. 6, December 2016, IEEE Spectrum Article on Googles early self-driving car – "How Google's Self-Driving Car Works", but Erico Guizzo, IEEE Spectrum, October 2011. Finally, read "Transition to manual: Driver behavior when resuming control form a highly automated vehicle", by Natasha Merat et al, Elsevier Science Direct, Transportation Research, Part F: Traffic Psychology and Behavior, Volume 27, Part B, November 2014, pages 274-282.

   Outline and mock-up (if helpful) an HCI for a mostly or fully self-driving car. For mostly self-driving, the design must allow a driver to retake control in an emergency. For full autonomy the design must have automatic fail-safe features. Explain why your choice is most safe. In either case, describe how your system might help determine who is responsible for an accident (driver, riders, manufacturer, external agent, other)?

6. Consider a Theatre Booking system (like BookMyShow.com)
   - **a.** Mention all stake holders (primary, secondary, tertiary etc.)
   - **b.** Types of interaction present in the system
   - **c.** The kinds of human memory usage in the system.
   - **d.** How and who operate the system
   - **e.** Characteristic difference between users of the system (eg. Age , Gender etc.)

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Digital Assessment

Please upload the answers to the questions given for DA in **Schoology as well as in VTOP. The assignment is a group activity (project team members), but individual member needs to submit the answer separately in Schoology as well as VTOP.**

The deadline for submission is 27th October 2019. If you miss the deadline, you will be given chance to upload the assignment by 01st November 2019, but a delay submission penalty of 3 marks will be imposed.

So strictly follow the deadline and uploading of assignment in both Schoology as well as in VTOP is MANDATORY. If you miss in any one of those, then your assignment may not be evaluated or a penalty of 5 marks may be imposed.

The total mark of the assignment is 20, which will be converted out of 7 marks and will be considered for Digital Assessment. The rest 3 marks will be calculated based on your classroom presentation.

The assignment must be written using digital mode. Scanned copy of the handwritten assignment is not accepted under any circumstances.