

**MILITARY COLLEGE OF SIGNALS**  
**SOLUTION-MIDTERM EXAM**  
**BESE 15 – B**  
**CSE 476 Human Computer Interfacing**

**Instructor: A/P Dr. Imran Siddiqi**

**Time: 90 Minutes**

**Max Marks: 30**

**(6+4)**

**Question 1**

- a. Give one line answers to the following.
- i. What are the two most important senses of an average person while interacting with a computer?

Vision and Touch

- ii. In the context of human memory, what is a semantic network ?

Semantic network refers to the collection of facts in human memory organized in the form of a network/tree.

- iii. Name two pointing devices, other than mice and joysticks.

Touch Pad, Stylus, Light Pen, Keyboard Nipple etc.

- iv. What does the term WYSIWYG refer to?

The term What You see is What You Get (WYSIWYG) is related to the visualization provided by direct manipulation. It describes a user interface in which representation during editing appears very similar to that in the final product.

- v. Which of the following two operations would typically be faster?
  - Moving the pointer into a 20 mm target from 40 mm away, or
  - Moving the pointer into a 30 mm target from 100 mm away

According to Fitt's law the difficulty index is given by  $D/S$ .

$D/S = 40/20 = 2$

$D/S = 100/30 = 3.33$

So moving the pointer into a 20mm target from 40mm away will be faster.

- vi. Give an example of a sensor in the information world.

Sensors in the information world may include information about websites visited, time spent online, books purchased

- b. For each of the following statements, choose the correct option.
- Forgetting to take back your ATM card after cash withdrawal. (**Slip**/Mistake)
  - Buying Microsoft Excel license to make data available to web clients through SQL queries. (Slip/**Mistake**)
  - London to Paris takes 8 hours by bus. (**Semantic**/Procedural/Episodic memory)
  - In the previous semester I taught to BESE15A, now I am teaching to BESE15B. When someone asks me which course am I teaching, I always end up saying BESE15A. (Retroactive Interference/**Proactive Inhibition**)
  - Video conferencing is a type of asynchronous groupware. (True/**False**)
  - The most common form of color blindness is blue/yellow color blindness. (True/**False**)
  - If speech recognition rates are 100%, speech will be the best input method in all situations. (True/**False**)
  - Isaac Newton used \_\_\_\_\_ reasoning to develop the theory of gravity. (**Inductive**/Deductive/Abductive)

(2+2+2)

## Question 2

- a. In the context of Abowd & Beale framework, identify each of the following as an *Articulation*, *Performance*, *Presentation* or *Observation* problem.
- You want to turn on a particular fan in the class room, the switch board has a large number of buttons and you cannot figure out which button goes with which fan. (**Articulation**)
  - Difficulty in reading time from an unmarked clock. (**Observation**)
  - You transferred an amount from one account to another account using the ATM machine but the machine did not give any confirmation message that the funds have been transferred. (**Presentation**)
  - You want to turn off the DVD player but the remote control does not include a button for turning it off. (**Performance**)
- b. Give one advantage and one disadvantage of Command Line Interface.

Command line interface offers direct access to system functionality and expert users generally find it easier to use. The disadvantage is that the command line interface relies on 'recall' so commands have to be memorized.





- c. List the three criteria for grouping controls and displays.

Controls or displays can be grouped according to any of the following: Functionality, Sequence of use, frequency of use.

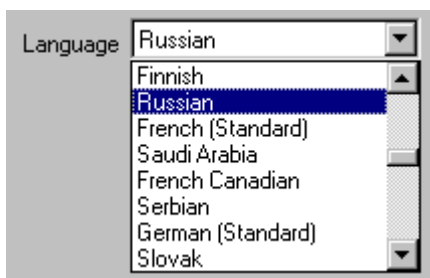
(4+5)

## Question 3

- a. Consider the following icons with a brief description of each. For each of these icons state if it is a good or a misleading metaphor. Support your choice with reasoning.

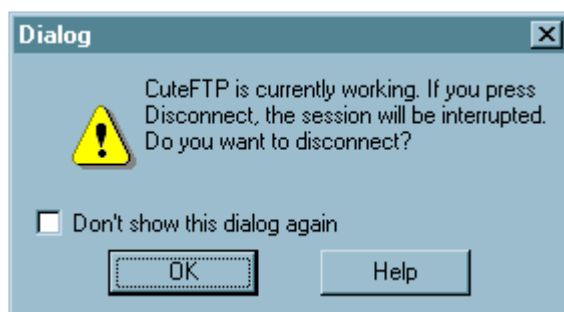
i.		An envelope icon for sending an email
	The postal mail is a good metaphor for the email. Postal mail is sent in an envelope with the sender and recipient names and addresses. It's pretty much natural to use the envelope icon for email.	
ii.		A traffic cone used as icon for VLC media player.
	Traffic cones have nothing to do with a media player. Using this icon makes it very difficult to guess what the program does. <b>Just For Info:</b> The history of using this cone icon for the VLC player is that the developers (student association of the École Centrale Paris) had a collection of these cones and in honor of this they created the icon.	
iii.		Icon for a software that allows burning of CDs. The icon shows disks emerging from a toaster.
	This one is very subjective. Some people rate it as a classical metaphor. For others its misleading in the sense that burning data to CDs is not the same as toasting bread in a toaster.	
iv.		Paper clip icon for attachment with an email
	A good metaphor that is very much in accordance with the paper work in office.	

- b. State what is wrong with each of the following. Give the most obvious reason in ONE line. Discussions or details are not required.



(i) A language selection drop down list

The list of languages is not sorted in any order making it time consuming to search



(ii) A dialog box during a file transfer

The message says 'if you press Disconnect' and there is no disconnect button on the dialog box.

for a specific language.

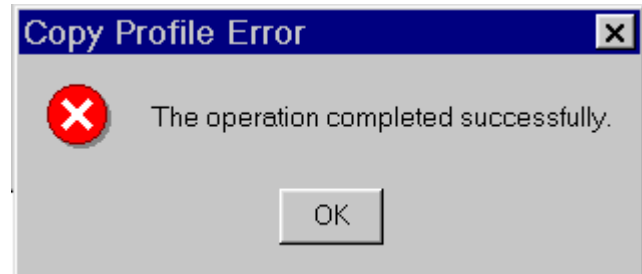
In addition, the user cannot choose not to disconnect as the only options available are OK and Help. Of course the user can click the 'x' at the top of the window but there should be a Cancel/No button as well.



	Player	Score	Remain
0)	tommie	15006	25
1)	heidi	14608	18
2)	tommie	14460	50
3)	tommie	14370	9
4)	tommie	14200	11

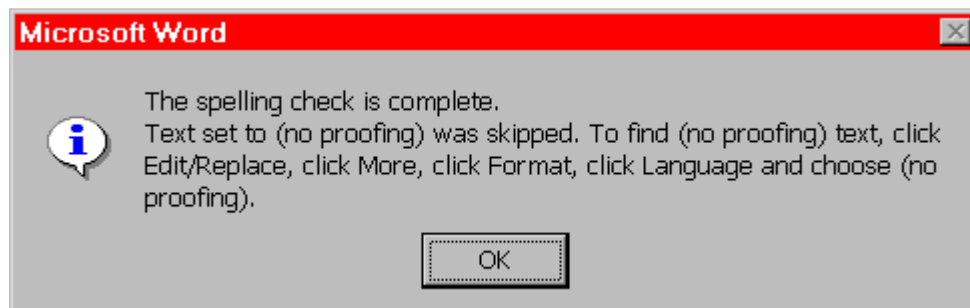
(iii) A screen showing highest scorers in a game

The players are ranked with respect to scores and the highest scorer is given a rank of 0 instead of 1. From the perspective of developers, this might be because the array indices start at 0 but from the perspective of user, the highest scorer should NUMBER 1 not Number 0.



(iv) A message after copying a profile

The title is Copy Profile Error and the message says the operation completed successfully. The icon also does not match with the message.



(v) A dialog box from Microsoft Word

User is given an instruction for which he/she has to remember a lot of things like go click edit, click more..... the dialog relies too much on human memory.

(4+1)

#### Question 4

- a. A dealer in electronic equipment has established a call center for handling customer complaints. Imagine an operator working in the call center who needs to receive the complaints and take a note of the address and telephone number of the customer so that a technician could be sent to check the equipment. There are many ways to build an interface to support such an operator. For each of the following interaction styles, give one comment on why it would or would not be suitable for this task.

- a. Command line interface

Not suitable for this type of task. There is no point in typing commands every time to enter client name, address and contact info.

b. Menu selection

Can not be used as the operator needs not only selection but information is to be entered as well.

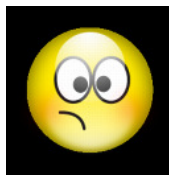
c. Form fills

Perhaps the best choice. The operator will have form with all required fields and just needs to fill in the info.

d. Point & click

Not suitable at all. The objective of a point and click interface is to minimize typing whereas in the desired operation the operator will have to type in most of the time.

b. Draw an icon for a confused person.



+++++++ Bon Courage ++++++