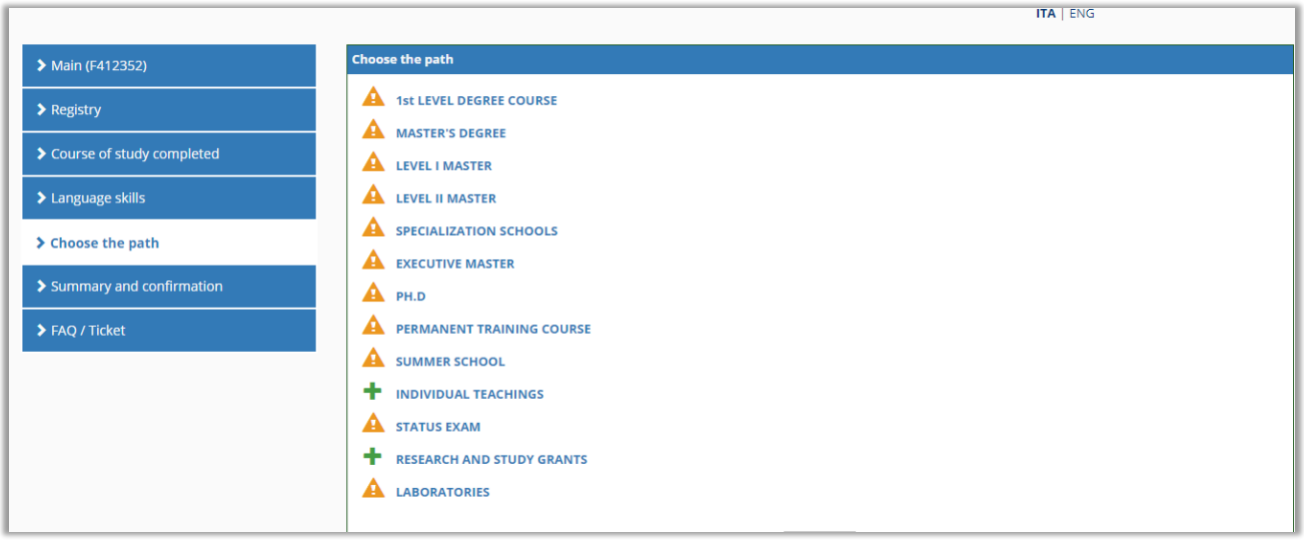
02JSK$_{OV/SM}$ - HUMAN COMPUTER INTERACTION

WRITTEN EXAM – 2021-01-28

Closed-book exam: no notes or other material are allowed. Allowed Time: 60 minutes.
The responses should be easy to read (write clearly!) and reasonably short (around 5-10 lines long).

1.

Consider the following fragment of a webpage, containing a step in the enrollment to Politecnico di Torino by a foreign student. Report and discuss the main violations (at least 4) of the Nielsen Usability Heuristics (see the summary in the next page) that can be found in this snapshot.



2.

Given the following task, produce a *Hierarchical Task Analysis*, including the main tasks, sub-tasks, and plans.

Task: *Share a group of pictures, from your smartphone, with a group of friends from your contacts.*

3.

List the questionnaires that are frequently used during Usability testing, and briefly mention their relative advantages.

4.

In which cases is a low-fidelity prototype preferable to a high-fidelity prototype?

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POSSIBLE ANSWER TO QUESTION 1

#1: Visibility of system status

The logged-in state of the user is hard to determine (you must understand the meaning of the F412352 to be your enrollment number)

It's not clear if you successfully completed the previous steps (assuming that the left menu shows steps to be completed), because they are all visualized in the same way.

The interface is in English, but the bold "ITA" would suggest it is in Italian.

#2: Match between system and the real world

It's not clear whether you already selected some of the paths, or if you may select more than one, or if you may select the ones with the yellow mark.

#3: User control and freedom

There are no controls for going forward/backward in the sequence of steps.

There is no clear way to "exit" from the procedure.

The left menu has ">" labels that would suggest an open/close semantics. However, the open one should turn into a "v".

#4: Consistency and standards

The "danger" icon and the "plus" icons don't suggest a clear meaning.

The "plus" icon should imply "adding" some path to existing ones, but it doesn't seem the case.

#5: Error prevention

If some paths are prevented to the user (due to previous choices, for example) they should be hidden/disabled.

#6: Recognition rather than recall

The names of the paths are very hard to understand (especially the various interpretations of 'master') and seem not to be at the same level.

Icon semantics are not recognizable.

#7: Flexibility and efficiency of use

(hard to evaluate the flexibility on a single static page)

#8: Aesthetic and minimalist design

A lot of white space is unused

The relationship of the left menu with the right block is not clear (neither contained nor independent...)

#9: Help users recognize, diagnose, and recover from errors

No tooltips on icon meaning.

No explanations over the meaning of the different paths.

#10: Help and documentation

No icons for getting more information on specific aspects.

The FAQ/Ticket item seems not helpful (it seems more about the procedure, rather than the specific points.

POSSIBLE ANSWER TO QUESTION 2

Task Hierarchy

1 Select pictures			2 Press "Share" icon	3 Select friends		4 Confirm
1.1 Open Gallery	1.2 Long-tap on a picture	1.3 Tap on a picture		3.1 Select a friend	3.2 Select "Done"	

Execution Plans

Plan 0 (main task): 1 – 2 – 3 – 4

Plan 1 (single picture): 1.1 – 1.3

Plan 1 (many pictures): 1.1 – 1.2 – 1.3 (repeated)

Plan 3: 3.1 (repeated) – 3.2

POSSIBLE ANSWER TO QUESTION 3

- Post-Task Questionnaires
    - SEQ: 1-3 questions on a 7-point Likert scale. Easy to answer, don't interrupt the flow, reliable and well-tested.
- Post-Test Questionnaires
    - SUS: 10 questions (5 positive and 5 negative) on a 5-point Likert scale. Measures the perceived usability. Computes a score, that should be at least above 68. Simple and quite popular. Cons: impossible to compare scores, can't identify which are the issues.
    - NASA-TLX: much more complex, with questions on 21 levels. Measures the perceived workload of users. Often used in military or high-complexity domains. Very complex procedure to compute the final score.

POSSIBLE ANSWER TO QUESTION 4

Low-fidelity prototypes, and in particular paper prototypes, are a very fast and economical way of testing a system design.

They are particularly suitable for the initial stages of the design, or during the re-design of some part or component.

They may help evaluating various aspects, both general (application structure, navigation flow, understandability, …) and specific (category names, button labels, layout choices, item positions, …). They do not cover graphical details (colors, fonts, pixel-perfect measures) nor the dynamic aspect (animations, response time, finer interactions).