

Collected by Mai Nguyen Anh

\*the answers are mine. Exam was taken in-person on StudOn exam platform in SS 23

My note: 1.0



## Welcome to the HCI E-Exam!

E-Exam on Human-Computer-Interaction (HCI) for summer term 2023

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### Please read the following information carefully

- The e-exam consists of **33 questions**.
- The processing time is **90 minutes**. The system automatically ends the test when the test period expires. All your answers given up to that point are of course saved.
- The answer options are mixed.
- Every time you scroll to the next question and additionally every 30 sec. your answer to the previous one is automatically stored temporarily.
- **You receive points for correctly ticked and correctly NOT ticked options.** Within a question points will be withdrawn for incorrectly ticked and incorrectly NOT ticked options. The minimum number of points is 0 within a question. You cannot receive negative points across the exam.

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### Using the system

At the beginning of the exam you will see all questions listed in the view Editing Status. Click on a question to start editing. You can switch to the Editing Status view at any time while you are editing the questions, and from there you can go back to any question. While you are editing a question, a list of questions is also displayed on the left side of the screen, where the questions that have already been answered are highlighted. You can also select a new question for editing by clicking on one of the questions in the question list; alternatively, the NEXT button takes you to the next question in the question list. You can select a question via the selection window ACTIONS. With the marking you can, for example, note that a question has to be checked again. You can also use ACTIONS to remove markings, undo editing or delete answers completely.

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### End test

**Do not click on "End test"** until you actually want to end the test. Once the test is finished, you can no longer view or change your entries.

**Good luck!**

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Reihenfolge	Fragen-ID	Fragentitel	Maximale Punktezahl	Erreichte Punkte	Prozent gelöst
1	159719	[Eval] Variables	1	1	100.00 %
2	159727	[Princ] Principles to support Usability (by Dix)	3	3	100.00 %
3	159706	[Intro] Usability versus Utility	1	1	100.00 %
4	159715	[Eval] Experiment Conclusions	3	1	33.33 %
5	159722	[Hum] Gestalt laws (3)	1	1	100.00 %
6	159732	[VR] Stereoscopy (2)	2	0	0.00 %
7	159731	[VR] Reality-Virtuality Continuum	3.5	3.5	100.00 %
8	159728	[Princ] Quality components of Usability (Usability 101 by Nielson) (2)	2.5	2.5	100.00 %
9	159710	[Intro] GUI characteristics	2	2	100.00 %
10	159702	[Wearable] Activity recognition	4	4	100.00 %
11	159704	[Wearable] Advantages of Resistive Touch screens	2	2	100.00 %
12	159701	[Guest talk] Costs versus issue solving	1.5	1.5	100.00 %
13	159707	[Princ] UX versus UI	2	2	100.00 %
14	159721	[Hum] Gestalt Laws	3.5	3.5	100.00 %
15	159724	[Modl] Fitts' Law applied	7	6	85.71 %
16	159730	[Tech] Input device taxonomy by Card	3	2	66.67 %
17	159699	[Princ] ProHerz App	10	9	90.00 %
18	159714	[AnyI] Ethnography	2	2	100.00 %
19	159703	[Wearables] Sensors	2	1	50.00 %
20	159718	[Eval] Suitable methodology	5	4	80.00 %

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21	159711	[Exercise] Requirements Engineering	2	2	100.00 %
22	159709	[Princ] User Experience statements	2	2	100.00 %
23	159712	[Guest Talk] CRO Definition	1	1	100.00 %
24	159723	[Hum] Model Human Processor	5.5	5.5	100.00 %
25	159725	[Princ] Consistency	3	3	100.00 %
26	159729	[Proto] High- and low-fidelity prototypes	5	5	100.00 %
27	159705	[Exercise] Study design	4	4	100.00 %
28	159708	[Mod] Affordance Theory	2	2	100.00 %
29	159716	[Eval] Experimental Design (2)	2	2	100.00 %
30	159720	[Exercise] - Personas for Design	3	1	33.33 %
31	159713	[Exercise] Research Process (2)	2.5	2.5	100.00 %
32	159726	[Princ] Flexibility (2)	3	2	66.67 %
33	159717	[Eval] Experimental Design (3)	4	4	100.00 %

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**Testergebnis in Punkten:** 88 von 100 (88.00 %)

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### [Eval] Variables (1 Punkt)

Sie haben die folgende Antwort gegeben:

1

Assign the correct descriptions to **independent and dependent variables**.

Independent variables (IV)

passt zu

The manipulated aspects, e.g. user interface layout, type of keyboard, ...



Dependent variables (DV)

passt zu

The observed aspects, e.g. task completion time, words per minute, ...



### [Princ] Principles to support Usability (by Dix) (3 Punkte)

Sie haben die folgende Antwort gegeben:

2

Assign the correct descriptions and the respective components to the given **principles to support Usability** by Dix et al.

Learnability

passt zu

The ease with which new users can begin effective interaction and achieve maximal performance



Learnability

passt zu

Predictability, Synthesizability, Familiarity, Generalizability, Consistency



Flexibility

passt zu

The multiplicity of ways the user and system exchange information



Flexibility

passt zu

Dialogue initiative, Multithreading, Task migratability, Substitutivity



Robustness

passt zu

The level of support provided to the user in determining successful achievement and assessment of goal-directed behavior



Robustness

passt zu

Observability, Recoverability, Task conformance, Responsiveness



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[Intro] Usability versus Utility (1 Punkt)

Sie haben die folgende Antwort gegeben:

What is the difference between utility and usability?

- ☒ Usability is the degree to which an object, device, software application, etc. is easy to use with no specific training and utility is the state or condition of being useful. 
- ☐ Utility is the degree to which an object, device, software application, etc. is easy to use with no specific training and usability is the state or condition of being useful.







3

4

[Eval] Experiment Conclusions (3 Punkte)

Sie haben die folgende Antwort gegeben:

When conducting an experiment what statements should be considered regarding the conclusion of your experiment?

- ☒ The independent variables may not exactly isolate the suspected cause 
- ☒ The dependent variables may not represented your intended measure correctly 
- ☒ The outcome may include bias 
- ☐ Your results may not be external validiable 
- ☐ An experiment is always depending on Popper's Falsifiability 
- ☐ Results from observations are always true 

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[Hum] Gestalt laws (3) (1 Punkt)

Sie haben die folgende Antwort gegeben:

Which Gestalt law states that elements that are arranged on a line or curve are perceived to be more related than elements not on that line or curve?

- ☐ Law of similarity
- ☐ Law of common fate
- ☐ Law of perception
- ☐ Law of prägnanz / simplicity / good shape
- ☒ Law of continuity ✓
- ☐ Law of pleasure
- ☐ Law of symmetry
- ☐ Law of closure

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[VR] Stereoscopy (2) (2 Punkte)

Sie haben die folgende Antwort gegeben:

You take part in an HCI-related study in which you have to solve various tasks in a virtual labyrinth. For this, you have to wear a head-mounted display (HMD). Select the correct statement(s).

- ☒ By presenting exactly the same image to each eye, you can see the labyrinth in three-dimensions through the HMD. ✗
- ☒ The "illusion of depth" makes it possible to perceive a 3D labyrinth with the HMD. ✓
- ☐ Stereovision is how each eye may see an object from different angles, but the brain combines these angles to form a 3D image. ✗
- ☐ A one-eyed person cannot assess the depth of the labyrinth because stereoscopic vision is only possible with two intact eyes. ✓

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### [VR] Reality-Virtuality Continuum (3.5 Punkte)

Sie haben die folgende Antwort gegeben:

Assign the correct descriptions to the different levels of the **Reality-Virtuality Continuum**.

Virtual Environment	passt zu	User is totally immersed	✓
Virtual Environment	passt zu	Completely synthetic world	✓
Virtual Environment	passt zu	Possibility to step out of bounds of physical reality	✓
Real-World Environment	passt zu	Constrained by laws of physics	✓
Real-World Environment	passt zu	Consisting of real objects	✓
Mixed Reality Environment	passt zu	Augmented Reality & Augmented Virtuality	✓
Mixed Reality Environment	passt zu	Real and virtual objects are presented together	✓

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[Princ] Quality components of Usability (Usability 101 by Nielson) (2) (2.5 Punkte)

Sie haben die folgende Antwort gegeben:

Assign the correct descriptions to the five **quality components of Usability** (Usability 101 by Nielson).

How easy is it for users to accomplish basic tasks the first time they encounter the design?

passt zu

Learnability



Once users have learned the design, how quickly can they perform tasks?

passt zu

Efficiency



When users return to the design after a period of not using it, how easily can they reestablish proficiency?

passt zu

Memorability



How many errors do users make, how severe are these errors, and how easily can they recover from the errors?

passt zu

Errors



How pleasant is it to use the design?

passt zu

Satisfaction





## [Intro] GUI characteristics (2 Punkte)

Sie haben die folgende Antwort gegeben:

While different GUIs evolved over time, they have specific characteristics in common.

Choose the main pieces these GUIs have in common:

☐ Color of buttons



☒ Pointer



☒ Scroll bars



☐ Dropdown menu



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[Wearable] Activity recognition (4 Punkte)


Sie haben die folgende Antwort gegeben:

Choose the best fitting terms for the given descriptions.

 are considered as primitive movements of the body parts of a person that may correspond to a particular action of this person.

 are movements of a person describing a certain motion that may be part of more complex activities.

 can give deep insights into the currently performed activity and influence the analysis.

 refer to physical actions that are associated with the emotions, personality, and psychological state of the individual.

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[Wearable] Advantages of Resistive Touch screens (2 Punkte)

Sie haben die folgende Antwort gegeben:

Resistive sensing is one of the most fundamental and simple techniques for transforming forces of the physical world into electrical signals. Therefore, it is one of the most common sensing principles used in modern electronics.

Choose the advantages of **Resistive Touch screens** in comparison to capacitive sensing.

☒ Does not respond to contact from outside stimuli (ex: dust and water splashes)



☐ Multi-touch is not supported (pinch, zoom, etc.)



☒ Can be used with bare finger, gloved finger, stylus, etc.



☐ Heavy use can breakdown the sensor leaving it unresponsive



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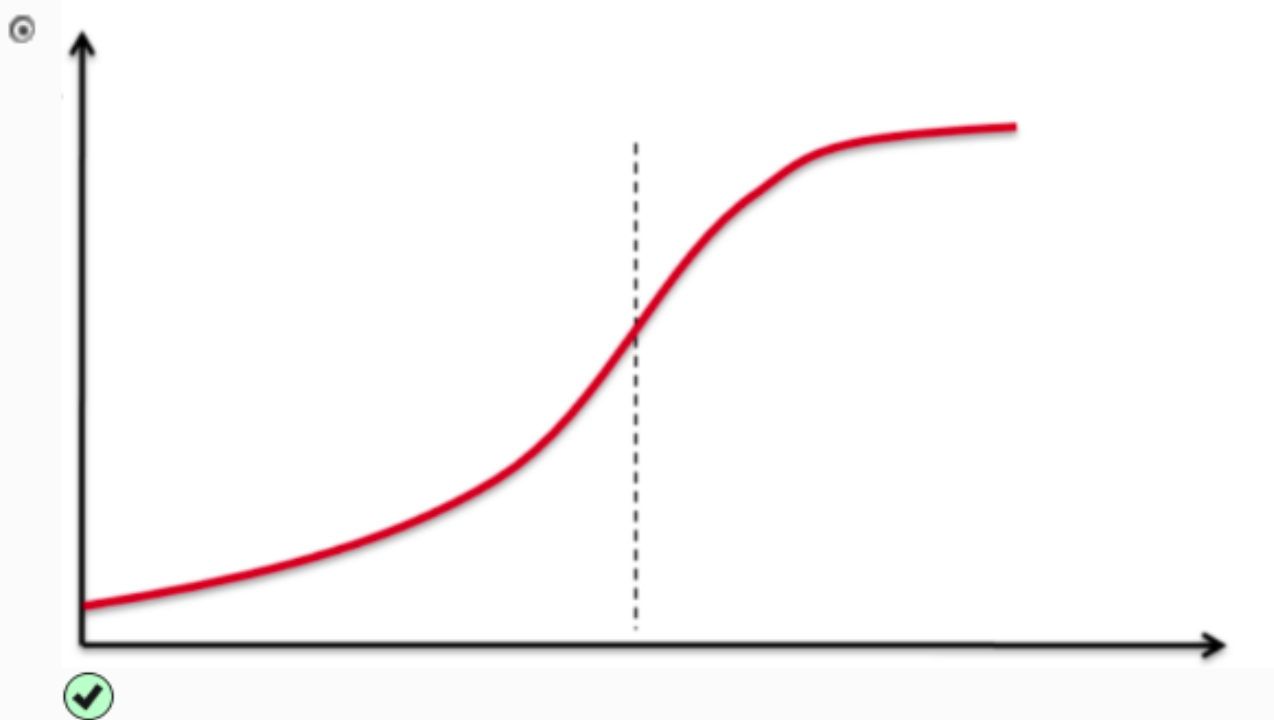
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### [Guest talk] Costs versus issue solving (1.5 Punkte)

Sie haben die folgende Antwort gegeben:

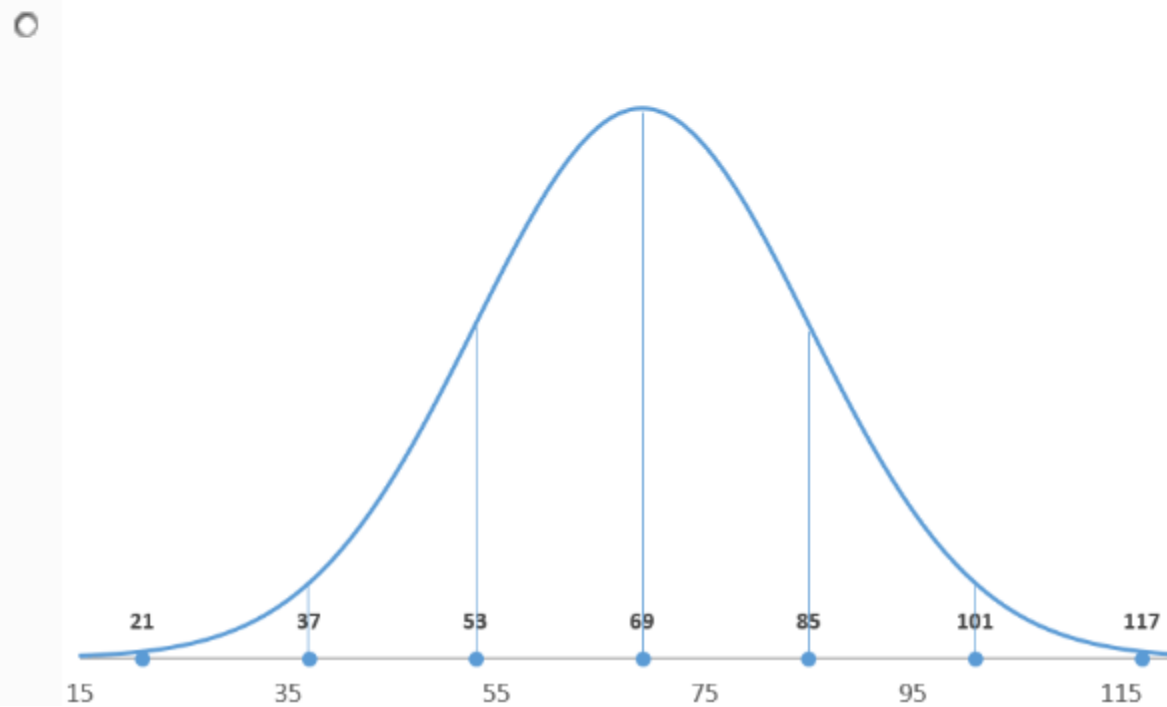
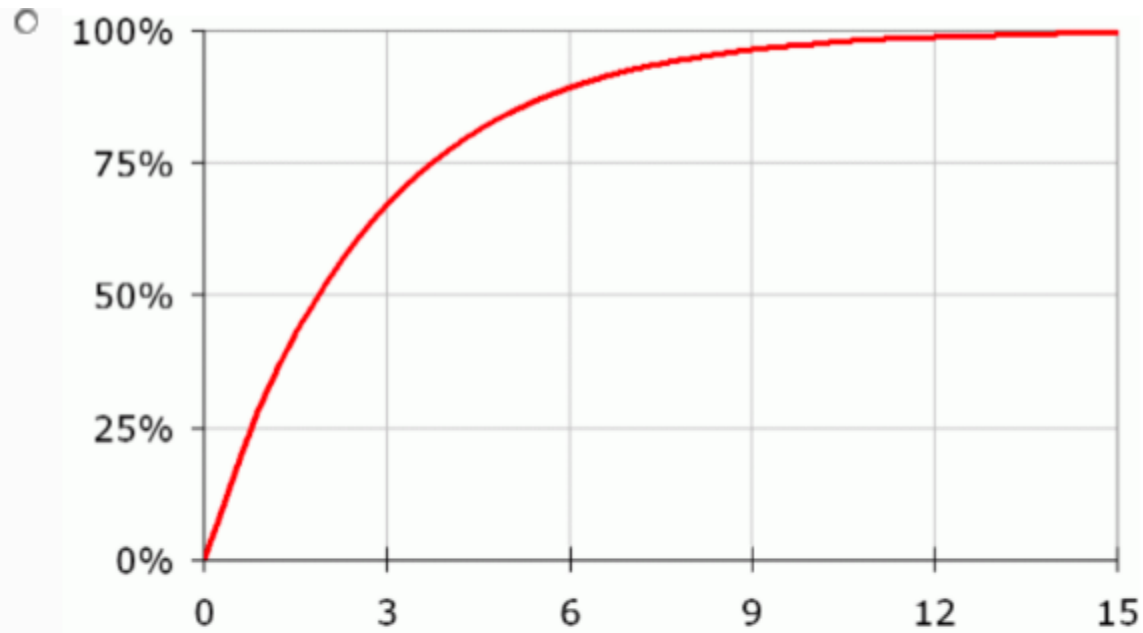
Select a curve that represents the costs of solving issues during the different stages of a product.



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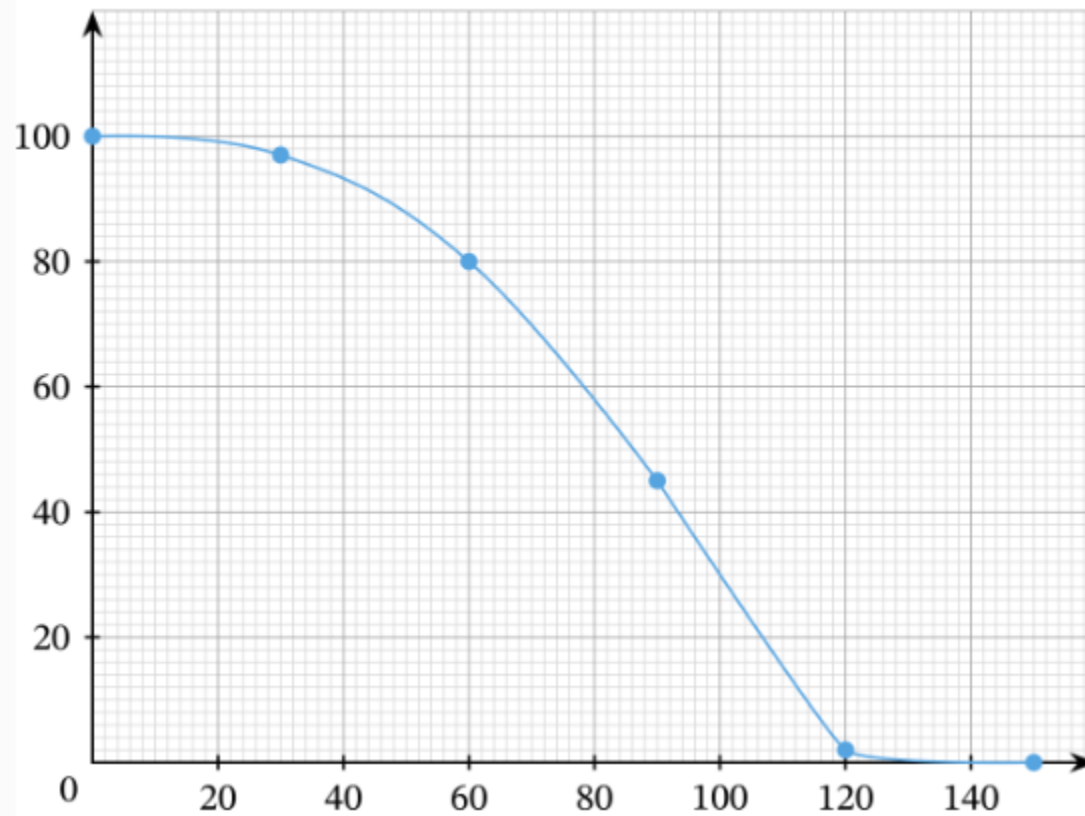
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[Princ] UX versus UI (2 Punkte)

Sie haben die folgende Antwort gegeben:

What is the difference between User Interface Design (UI) and User Experience Design (UX). Select the best fitting answer(s).

- ☐ UI is concerned with the ,feels' whereas UX is concerned with the ,looks'.  

- ☒ UX is concerned with the ,feels' whereas UI is concerned with the ,looks'.  

- ☒ UI is anything a user interacts with to use a digital product and UX focuses on the journey.  

- ☐ UX is anything user interacts with to use a digital product and UI focuses on the journey.  


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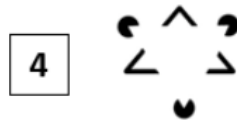
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[Hum] Gestalt Laws (3.5 Punkte)

Sie haben die folgende Antwort gegeben:

Choose the corresponding **Gestalt law** for each picture.



1. Law of similarity ✓
2. Law of proximity ✓
3. Law of continuity ✓
4. Law of closure ✓
5. Law of pragnanz / simplicity / good shape ✓
6. Law of common fate ✓
7. Law of symmetry ✓

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[Modl] Fitts' Law applied (7 Punkte)

Sie haben die folgende Antwort gegeben:

Fitts' Law can be used to predict movement times for pointing devices.

(a)  $MT = b + a * \log_2(\frac{D}{W})$       (b)  $MT = D + W * \log_2(\frac{a}{b})$

(c)  $MT = D + W * \log_2(\frac{b}{a})$       (d)  $MT = a + b * \log_2(\frac{W}{D})$

(e)  $MT = a + b * \log_2(\frac{D}{W})$       (f)  $MT = D + W * \log_2(1 - \frac{a}{b})$

(g)  $MT = D - W * \log_2(1 + \frac{a}{b})$       (h)  $MT = b - a * \log_2(1 + \frac{D}{W})$

(i)  $MT = a + b * \log_2(1 + \frac{D}{W})$       (j)  $MT = b - a * \log_2(1 - \frac{D}{W})$

Choose the correct formula (a - j) describing Fitt's Law.

☒ i

Simply put, Fitts' Law formula says:

☒



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Choose the correct explanation for the term called "ID".

ID is the Index of Difficulty and refers to the target distance and width. ✓

To make a precise prediction of movement time for a new pointing device (e.g. a new tracking ball) using Fitts' Law you need to experimentally determine the parameters "a" and "b". What do these parameters "a" and "b" stand for?

a is the offset and b is the slope. ✓ -

Choose how a possible experiment to evaluate "a" and "b" could look like? **(The first gap refers to the first step to take)**

First: Build UI with varying distance and width of the target. ✓

Second: Estimate ID and measure the Movement Time (MT) for each target (repeat 100 times for each subject). ✗

Third: Linear regression over all subjects in the ID-MT graph and read a and b. ✓

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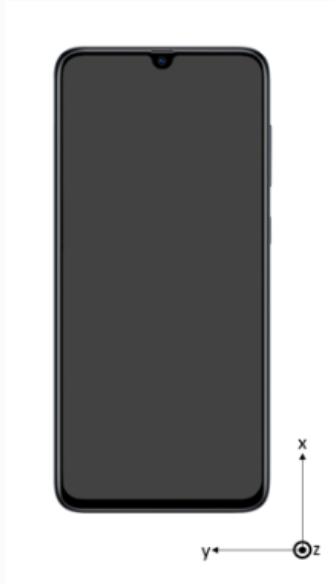
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[Tech] Input device taxonomy by Card (3 Punkte)

Sie haben die folgende Antwort gegeben:

Use the input device taxonomy defined by Card to classify the depicted smartphone (2 keys on the right side, touch surface).



Mark the correct one of the given options.

<input type="radio"/>		Linear			Rotary			
		X	Y	Z	rX	rY	rZ	
P		●	② ●					R
dP								dR
F								T
dF								dT
		1 10 100 inf	1 10 100 inf	1 10 100 inf	1 10 100 inf	1 10 100 inf	1 10 100 inf	

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○

	Linear			Rotary			
	X	Y	Z	rX	rY	rZ	
P							R
dP	●	②	●				dR
F							T
dF							dT
	1 10 100 inf	1 10 100 inf	1 10 100 inf	1 10 100 inf	1 10 100 inf	1 10 100 inf	

2

○

	Linear			Rotary			
	X	Y	Z	rX	rY	rZ	
P	●	●	②				R
dP							dR
F							T
dF							dT
	1 10 100 inf	1 10 100 inf	1 10 100 inf	1 10 100 inf	1 10 100 inf	1 10 100 inf	

3

○

	Linear			Rotary			
	X	Y	Z	rX	rY	rZ	
P	●	②	●				R
dP							dR
F							T
dF							dT
	1 10 100 inf	1 10 100 inf	1 10 100 inf	1 10 100 inf	1 10 100 inf	1 10 100 inf	

4

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○

	Linear			Rotary			
	X	Y	Z	rX	rY	rZ	
P							R
dP	●	②	●				dR
F							T
dF							dT
	1 10 100 inf	1 10 100 inf	1 10 100 inf	1 10 100 inf	1 10 100 inf	1 10 100 inf	

5

○

	Linear			Rotary			
	X	Y	Z	rX	rY	rZ	
P							R
dP	●	●	②				dR
F							T
dF							dT
	1 10 100 inf	1 10 100 inf	1 10 100 inf	1 10 100 inf	1 10 100 inf	1 10 100 inf	

6

○

	Linear			Rotary			
	X	Y	Z	rX	rY	rZ	
P				●	●	②	R
dP							dR
F							T
dF							dT
	1 10 100 inf	1 10 100 inf	1 10 100 inf	1 10 100 inf	1 10 100 inf	1 10 100 inf	

7

○

	Linear			Rotary			
	X	Y	Z	rX	rY	rZ	
P	●	●					R
dP		②					dR
F							T
dF							dT
	1 10 100 inf	1 10 100 inf	1 10 100 inf	1 10 100 inf	1 10 100 inf	1 10 100 inf	

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8

	Linear			Rotary			
	X	Y	Z	rX	rY	rZ	
P							R
dP							dR
F		②					T
dF							dT
	1 10 100 inf	1 10 100 inf	1 10 100 inf	1 10 100 inf	1 10 100 inf	1 10 100 inf	

9

9

	Linear			Rotary			
	X	Y	Z	rX	rY	rZ	
P							R
dP							dR
F							T
dF							dT
	1 10 100 inf	1 10 100 inf	1 10 100 inf	1 10 100 inf	1 10 100 inf	1 10 100 inf	

10

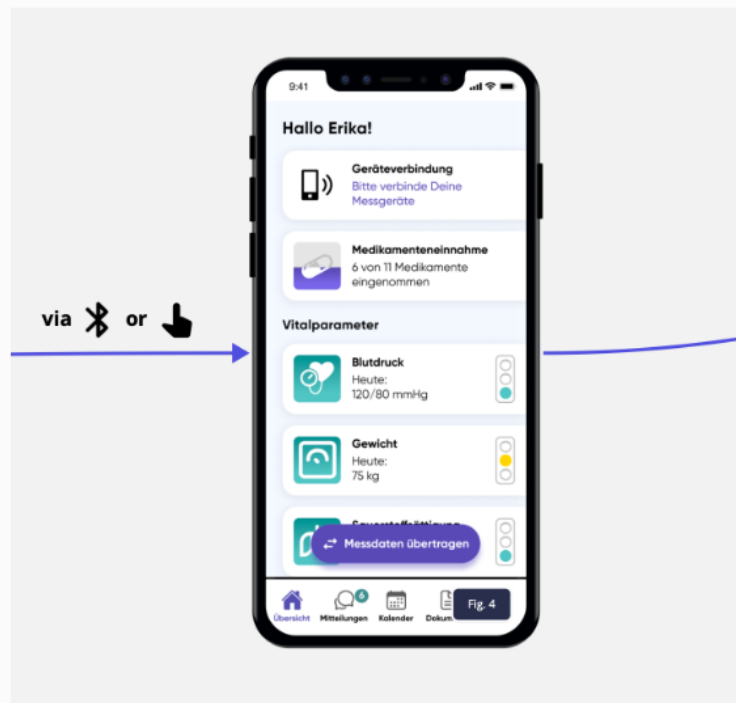
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[Princ] ProHerz App (10 Punkte)

Sie haben die folgende Antwort gegeben:



You can see a screenshot of a prototype app that supports patients with a cardiac condition in their disease management.

To design the prototype, you as a designer need to follow the **Eight Golden Rules of Interface Design**.

Assign the text and visual features that **best** describe the given Golden Rule of Interface Design.

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All icons on the main menu are displayed in a predefined color scheme:

- *Followed rule:* Strive for consistency ✓

Users who are familiar with the system, can navigate to a detailed view via shortcuts (gesture touch):

- *Followed rule:* Enable frequent users to use shortcuts ✓

The navigation bar at the bottom of the app shows a menu and indicates which view is currently opened.

- *Followed rule:* Reduce Short-Term Memory Load ✗

After completing a blood pressure test, the last screens shows a message that says the test has been successful.

- *Followed rule:* Design dialogues to yield closure ✓

A reverse test button allows to delete the last blood pressure measurement and start a new test.

- *Followed rule:* Permit easy reversal of actions ✓

If a user wants to include data points manually, an algorithm checks them for plausibility (e.g., if the value is a number):

- *Followed rule:* Error prevention / handling ✓

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By blocking alerts on the main screen, users feel like they are the initiators of all following actions:

- *Followed rule:* Support internal locus of control ✓

The start screen reminds the user of all vital parameters that are relevant to measure for the given condition.

- *Followed rule:* Reduce Short-Term Memory Load ✓

Users can initiate a data transfer themselves and include the parameters themselves.

- *Followed rule:* Support internal locus of control ✓

When a false data format is entered, clear error notifications and descriptive hints help to resolve the problem.

- *Followed rule:* Error prevention / handling ✓



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### [AnyI] Ethnography (2 Punkte)

Sie haben die folgende Antwort gegeben:

Select the correct statements about **ethnographic observation in HCI**.

- ☒ Potential users (typical users) are observed over a period of time (critical times are included, for example shift changes). ✓
- ☐ One goal of ethnographic observation is to get information about the usability of the UI. ✓
- ☐ Ethnographic observation in HCI is robust to the Hawthorne Effect. ✓
- ☒ One risk of ethnographic observation in HCI is that observations are often misinterpreted due to a lack of insight. ✓

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### [Wearables] Sensors (2 Punkte)

Sie haben die folgende Antwort gegeben:

Assign the principles to the given sensor types.

Accelerometers	passt zu	measure the change of linear motion	✓
Gyroscopes	passt zu	advanced sensors depend on MEMS technology	✗
Heart rate sensors	passt zu	use a light-based technology	✓
Pedometer	passt zu	measure rotational motion	✗

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[Eval] Suitable methodology (5 Punkte)

Sie haben die folgende Antwort gegeben:

Imagine you work at a university as a researcher. Different colleagues approach you asking for help to choose a suitable evaluation method for their problem.

Assign the correct statements to each of the given problems (there might be several statements correct):

"I just built this cool prototype of a mobile application, and I would like to find out how well it is designed, but I don't know how."

passt  
zu

You could use the SUS for that!



"I would like to compare the task completion time of the 3 different VR scenarios I analysed in my study."

passt  
zu

ANOVA might be suitable for your problem!



"I conducted 10 t-tests on my sample and it looks like 8 times there was statistical significance, that's cool right?"

passt  
zu

You should definitely think about using the Bonferroni correction!



"I redesigned my interface design and conducted a study comparing the two designs. How can I tell with my data which one is statistically significant better?"

passt  
zu

The student t-test could be helpful!



[Exercise] Requirements Engineering (2 Punkte)

Sie haben die folgende Antwort gegeben:

You are part of a team tasked with developing a meditation and mindfulness mobile application called "Zodiac Zen" The app aims to help users reduce stress and anxiety through guided meditation sessions, breathing exercises, and soothing sounds. **You are the UX designer and need to gather user requirements effectively** to ensure the app meets the target audience's needs.

Which approach(es) should you choose to gather user requirements effectively?

☐ Interviewing a few close friends or family members who have experience with meditation to get their opinions on the app's features.



☒ Sending out an online survey to individuals who practice mindfulness and meditation to collect feedback on their preferred meditation techniques and app features.



☒ Conducting contextual research with potential users in their daily environments, observing their stress triggers, and understanding their meditation needs.



☐ Relying solely on the expertise of the meditation and mindfulness instructors in the development team to decide on the app's features and functionalities.



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### [Princ] User Experience statements (2 Punkte)

Sie haben die folgende Antwort gegeben:

Which of the following statements regarding UX are correct?

- ☐ You cannot create a UX. 
- ☒ You cannot not create a UX. 
- ☒ UX is influenced by product design, context of use, and user's skills and expectations 
- ☒ The term UX is defined by the ISO 9241 norm 

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[Guest Talk] CRO Definition (1 Punkt)

Sie haben die folgende Antwort gegeben:

What does the abbreviation CRO stand for in eCommerce?

- ☒ Conversion Rate Optimization: The process of increasing the percentage of users to take a desired action.
- ☐ Customer Range Optimization: The process of improving your website for a wider range of customers.
- ☐ Customer Repulsion Objective: The process of driving away certain customers or user segments to focus on the most profitable customers.
- ☐ Cart Removal Optimization: The process of limiting the time items stay in your cart to enforce faster purchase decisions.

Collected by Mai Nguyen Anh

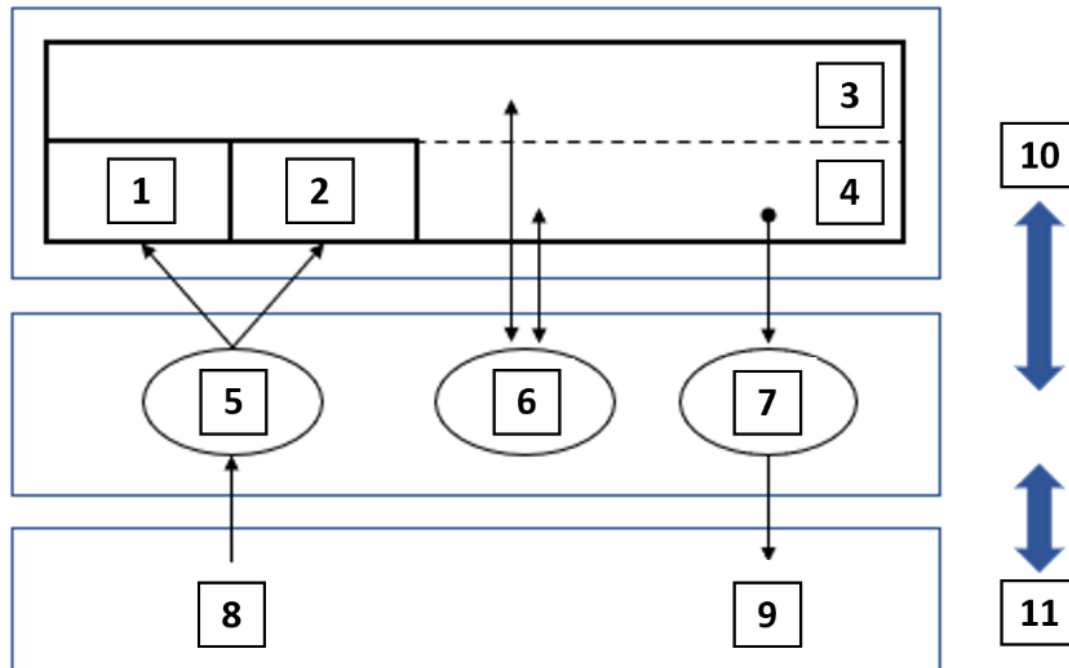
\*the answers are mine. Exam was taken in-person on StudOn exam platform in SS 23

My note: 1.0

[Hum] Model Human Processor (5.5 Punkte)

Sie haben die folgende Antwort gegeben:

Complete the **Model Human Processor** by choosing the missing terms for the respective gaps.



Collected by Mai Nguyen Anh

\*the answers are mine. Exam was taken in-person on StudOn exam platform in SS 23

My note: 1.0

1. Visual store ✓
2. Auditory store ✓
3. Long term memory ✓
4. Working memory ✓
5. Perceptual processor ✓
6. Cognitive processor ✓
7. Motor processor ✓
8. eyes, ears ✓
9. arms, wrists, fingers, etc. ✓
10. Memory ✓
11. Input/Output ✓

Collected by Mai Nguyen Anh

\*the answers are mine. Exam was taken in-person on StudOn exam platform in SS 23

My note: 1.0

[Princ] Consistency (3 Punkte)

Sie haben die folgende Antwort gegeben:

An important rule for design of a User Interface is the strive for **consistency**. There are three different levels of consistency. Assign the given examples to the matching level of consistency.

Lexical	passt zu	Always same word, color or shape for an UI-object (red is always no and green always yes)	✓
Semantic	passt zu	Always the same meaning for a UI-object ("Help" is always the help function)	✓
Syntactic	passt zu	Always the correct order (menu bar always shows file then edit then view and then help)	✓

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[Proto] High- and low-fidelity prototypes (5 Punkte)

Sie haben die folgende Antwort gegeben:

Assign the statements to either **high-** or **low-fidelity prototypes**.

Low-fidelity prototypes	passt zu	Fast, cheap, and easy to change	✓
Low-fidelity prototypes	passt zu	Early and active user involvement	✓
Low-fidelity prototypes	passt zu	Examples: sketches, paper prototypes, mock-up screens, ...	✓
Low-fidelity prototypes	passt zu	Check ideas and interaction flow	✓
Low-fidelity prototypes	passt zu	No real functionality, difficult to identify errors	✓
High-fidelity prototypes	passt zu	Looks & feels like the final product to the user	✓
High-fidelity prototypes	passt zu	Functionality is restricted, only certain functions work	✓
High-fidelity prototypes	passt zu	Can be used to predict task efficiency of the product	✓
High-fidelity prototypes	passt zu	Feedback often centered around the look & feel	✓
High-fidelity prototypes	passt zu	May be very time consuming to implement	✓



Collected by Mai Nguyen Anh

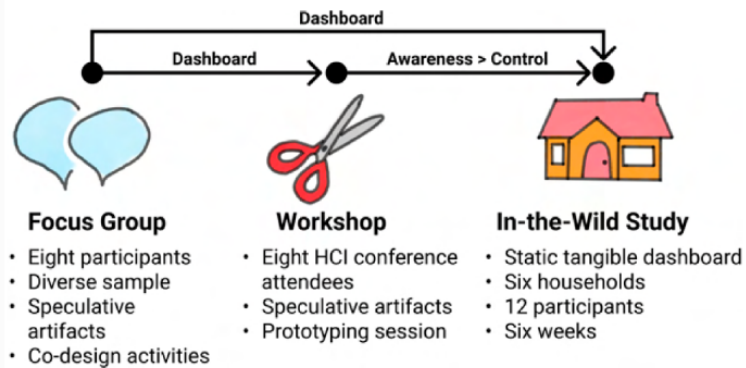
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My note: 1.0

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[Exercise] Study design (4 Punkte)

Sie haben die folgende Antwort gegeben:



This image shows an overview of a research protocol to investigate tangible privacy preserving mechanisms for future smart homes. The arrows depict how the key outcomes of the individual studies shaped the following study procedures.

Choose if the following statements are correct:

Für jede Aussage muss entschieden werden: [richtig] oder [falsch]

richtig

falsch

☐

☐

Three studies have been conducted and a rich mix of methods has been applied.

☒

☐

The studies are isolated from each other and findings are to be regarded isolated.

☐

☒

Focus groups can spark discussions by joining different experiences and expectations.

☒

☐

The In-the-Wild study has been chosen to test the dashboard in a controlled environment.

☐

☒

☒

☐

☐

☒

☒

☐

Collected by Mai Nguyen Anh

\*the answers are mine. Exam was taken in-person on StudOn exam platform in SS 23


My note: 1.0

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### [Mod] Affordance Theory (2 Punkte)

Sie haben die folgende Antwort gegeben:



Which statement describes the affordance theory best?

- ☒ It describes the (perceived) possibility for action. It describes that objective properties imply action possibilities. 
- ☐ It describes the (perceived) possibility for action. It describes that subjective properties imply action possibilities.
- ☐ It describes the (persistent) possibility for action. It describes that subjective properties imply action possibilities.
- ☐ It describes the (passive) certainty for action. It describes that subjective properties imply action possibilities.

### [Eval] Experimental Design (2) (2 Punkte)

Sie haben die folgende Antwort gegeben:

Complete the following sentence:

Experiments try to discover the   and effect relationships by comparing   and control condition.

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\*the answers are mine. Exam was taken in-person on StudOn exam platform in SS 23

My note: 1.0

[Exercise] - Personas for Design (3 Punkte)

Sie haben die folgende Antwort gegeben:

Which of the following statement(s) is/are true regarding the use of personas in human-computer interaction?

- ☒ Personas are too abstract and do not provide enough details about users' behaviors and needs. 
- ☒ Personas can reinforce stereotypes and biases, leading to exclusionary design. 
- ☐ Personas are not useful for understanding users in the early stages of design. 
- ☒ Personas can help designers empathize with users and design better user experiences. 
- ☐ Personas are quick and easy to create, requiring minimal user research and analysis. 
- ☐ Personas are only applicable to a specific user group and cannot be used for broader applications. 

Collected by Mai Nguyen Anh

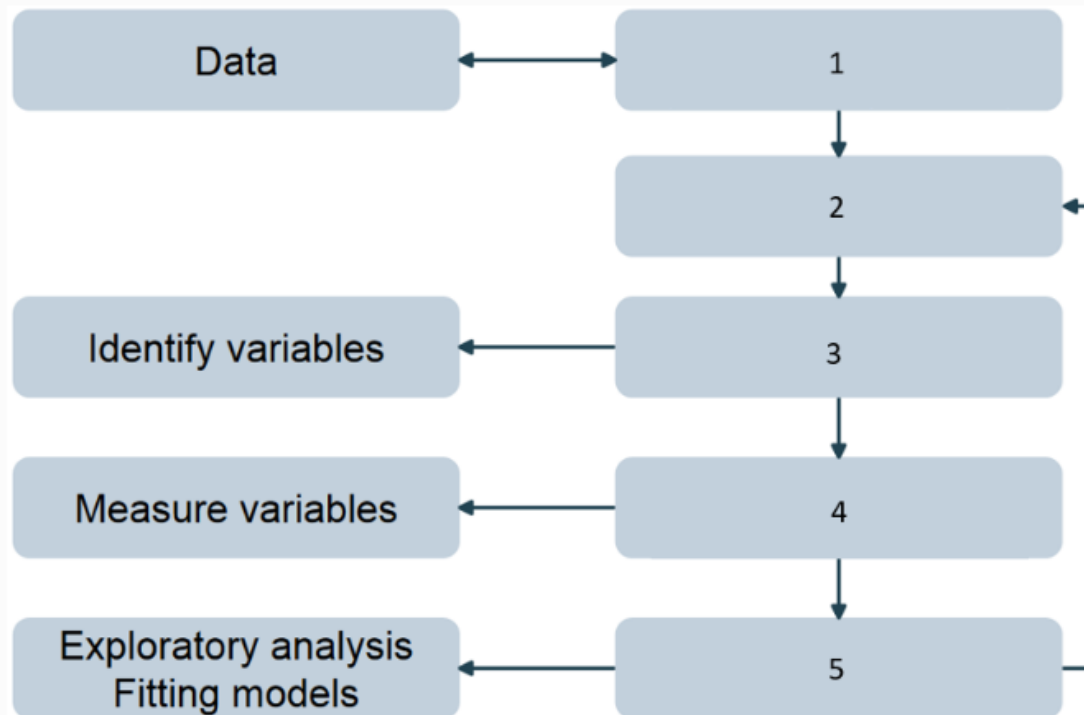
\*the answers are mine. Exam was taken in-person on StudOn exam platform in SS 23

My note: 1.0

[Exercise] Research Process (2) (2.5 Punkte)

Sie haben die folgende Antwort gegeben:

Match the terms regarding the research process to the diagram



- |   |          |                             |   |
|---|----------|-----------------------------|---|
| 1 | passt zu | Initial observation         | ✓ |
| 2 | passt zu | Generate theory             | ✓ |
| 3 | passt zu | Generate hypothesis         | ✓ |
| 4 | passt zu | Collect data to test theory | ✓ |
| 5 | passt zu | Analyse data                | ✓ |

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\*the answers are mine. Exam was taken in-person on StudOn exam platform in SS 23

My note: 1.0

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[Princ] Flexibility (2) (3 Punkte)

Sie haben die folgende Antwort gegeben:



Flexibility in user interfaces allows for more than just a linear path when navigating through a system. Therefore, multiple ways to exchange information exist.

Which of the following statements are correct?

- ☐ Multithreading describes the ability of a system to support user interaction for several tasks at a time ❌
- ☐ To keep task migratability, all given tasks must be passed to the user and not the system ✔️
- ☒ A system needs to allow equivalent values of input and output, that can be substituted for each other ✔️
- ☒ Adaptability describes the ability of the user to adjust the form of input and output ✔️
- ☒ By collecting user data on interaction and behavior, the system better adapts to user's preferences ✔️
- ☐ Two types of Multithreading in UX design are asynchronous multimodality and interleaving multimodality ✔️

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\*the answers are mine. Exam was taken in-person on StudOn exam platform in SS 23

My note: 1.0

[Eval] Experimental Design (3) (4 Punkte)

Sie haben die folgende Antwort gegeben:

To evaluate two different prototypes, a **within-group experimental design** is chosen.

Choose the applicable statement(s) for this use case.

*Für jede Aussage muss entschieden werden: [richtig] oder [falsch]*

richtig	falsch	
<input checked="" type="radio"/>	<input type="radio"/>	Each user tests each prototype.
<input checked="" type="radio"/>	<input type="radio"/>	Half the users test prototype A first, then B. The others test B first, then A.
<input checked="" type="radio"/>	<input type="radio"/>	Half of the users test only prototype A, the others test prototype B .
<input checked="" type="radio"/>	<input type="radio"/>	Individual variability between users is a major problem.

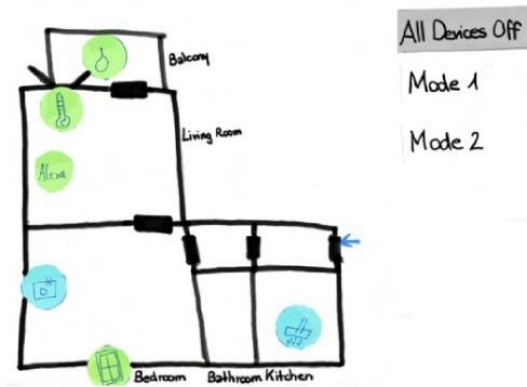
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Extra (different questions from other students)

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My note: 1.0



To support the configurations of a smart home, a group of scientists created a prototype for a home control dashboard, that shows an apartment's floor plan with the smart devices' locations.

To design the prototype, you as a designer need to follow the **Eight Golden Rules of Interface Design**.

Assign the text and visual features that **best** describe the given Golden Rule of Interface Design.

The target audience should not have to wonder whether different words, situations, or actions mean the same thing. or scheme.

- Followed rule:  ✓

Users who are familiar with the system, can navigate to a detailed view of one single room and the configurations via shortcuts:

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My note: 1.0

Users who are familiar with the system, can navigate to a detailed view of one single room and the configurations via shortcuts:

- *Followed rule:* Enable frequent users to use shortcuts 


When users know the current system status, they learn the outcome of their prior interactions and determine next steps.

- *Followed rule:* Offer informative feedback 


All sequences of actions should be organized into groups with a clear beginning, middle, and end.

- *Followed rule:* Design dialogues to yield closure 

After setting a new configuration for a smart device, users are asked, if they want to save this configuration for the following day or permanently.

- *Followed rule:* Enable frequent users to use shortcuts 

When changing a password, users are asked if they want to confirm it.

- *Followed rule:* Permit easy reversal of actions 

By blocking alerts on the main screen, users feel like they are the initiators of all following actions:



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My note: 1.0

By blocking alerts on the main screen, users feel like they are the initiators of all following actions:

- *Followed rule:* Support internal locus of control 

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The user should not have to remember information from one part of the dialogue to another. Instructions should be visible.

- *Followed rule:* Reduce Short-Term Memory Load 

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Users don't want surprises or changes in familiar behavior, and they are annoyed by tedious data-entry sequences, difficulty in obtaining necessary information, and inability to produce their desired result.

- *Followed rule:* Strive for consistency 

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When a false data format is entered, clear error notifications and descriptive hints help to resolve the problem.

- *Followed rule:* Error prevention / handling 