



CPUX-UR

Public Example Test

Certified Professional in Usability and User Experience –
User Requirements Engineering

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1 Preliminary note

This document contains one example of a complete set of theoretical and practical test questions for the test required for becoming a “Certified Professional in Usability and User Experience – Advanced Level User Requirements Engineering” (CPUX-UR).

Further information regarding the test procedure for CPUX-UR can be found in the document “Examination Regulations CPUX-UR” This document is available free of charge at

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2 Theoretical test CPUX-UR - Example

2.1 Instruction

This example of a complete set of test questions for the theoretical part of the CPUX-UR test contains 14 questions. There are two questions / audit tasks for each of the 7 learning units.

You have 90 minutes to answer all questions.

No aids such as computers, notes or textbooks are allowed during the test.

At the end of the certification test, the questions and your answers will be collected by the test team. You are not allowed to take the test questions with you.

It is stated with each test question in which form the answer is to be given (open question with free text answer or multiple-choice question). For multiple choice questions, there is purposefully no information given as to how many answers are correct.

2.2 Assessment

Each test question is assessed as follows:

- If a test question is not answered, it receives 0 points.
- If the answer to a test question is completely correct, it receives 3 points. If the answer to a test question is partly correct, it receives fewer points respectively.
- For an open question with free text answer, the examiner decides based on the given answer, how many of up to 3 points can be assigned. This document contains eight example open test questions and at the back of the document a sample answer that would receive the maximum number of points possible.
- For multiple choice questions, the candidate must decide for each possible answer provided if it must be checked or not. 3 points are assigned if all correct answers (maximum 3) are checked and none of the incorrect answers are checked.

For each correct answer that is not checked and for each incorrect answer that is checked an amount of points is subtracted from 3 as follows

- 3 points for an incorrect answer are subtracted, if only 1 correct answer is possible

- 1.5 points are subtracted for an incorrect answer if 2 correct answers are possible
- 1 point is subtracted for incorrect answer if 3 correct answers are possible

However, subtraction of points may never lead to a negative point value.

Example 1: A multiple choice question has 6 available answers, of which 3 are correct, the other 3 are incorrect. The candidate checks 2 correct answers and one incorrect answer. For the correct answer not checked 1 point is subtracted and for the incorrect answer checked, 1 point is subtracted from the maximum possible point value (3 points). The result is therefore 1 point.

Example 2: 2 out of 6 available answers are correct. The candidate checks one correct answer and one incorrect answer. For the incorrect answer checked, 1,5 points are subtracted. For the correct answer that was not checked, also 1,5 points are subtracted. The candidate therefore receives $3 - 2 * 1,5 = 0$ points.

Example 3: 3 out of 6 available answers are correct. The candidate checks all 6 answers. This results in 3 errors, which is then marked as $3 - 3 * 1 = 0$ points.

In order to pass the theoretical test for the CPUX-UX certificate, at least 30 points out of the maximum of 42 points must be scored (70%).

2.3 Test questions for the theoretical test - 14 questions, 90 minutes

Question 1

Dimensions of human-centred quality

Which of the following terms are dimensions of human-centred quality?

1. Attractiveness
2. Freedom from unacceptable risk
3. User friendliness
4. Customer experience
5. Forward thinking
6. Usability testing

Please check the answers you think are correct.

You receive 3 points if all correct answers are checked. One, two or three answers might be correct.

Question 2

Question model

Provide a brief summary of what is meant by the term task model.

What does a task model for applying for a credit card look like?

(Pre-condition: The user has decided in general to apply for a credit card, but does not yet know which credit cards are available and which one would fit best.

Post-condition: The user has received the credit card and can make payments with the credit card.)

Please answer in free text.

You receive 1 point for a correct summary and 2 points for the task model.

Question 3

Types of context of use analysis

What is the difference between classic context of use analysis and model-based context of use analysis?

Please answer in free text.

You receive 3 points for the correct answer.

Question 4

Context of use analysis

Which of the following statements are correct?

1. When using the model-based approach, an unprejudiced view can only be achieved if all known information is disregarded and newly gathered together with users.
2. The price-performance ratio of a product is an essential human-centred quality objective alongside the product's usability.
3. When using the classic approach for context of use analysis, in the beginning users should not be taken into account, rather the focus should be on analysing the customer's knowledge.
4. An important trigger for a context of use analysis is complaints from users regarding the usability of an existing system.
5. Human-centred quality objectives can be related to usability and to lack of unacceptable risks.
6. If a follow-up product for an existing product is to be developed, it is unnecessary to do a context of use analysis because there is already enough information available about the context of use.

Please check the answers you think are correct.

You receive 3 points if all correct answers are checked. One, two or three answers might be correct.

Question 5

Gathering of context of use information

Which of the following statements are true?

1. When gathering context of use information, quantitative information should always be preferred over often more available qualitative information.
2. The documentation and the interpretation of observational findings can hardly be separated from one another.
3. In a participatory observation, there is a risk of the interviewer influencing the observed user through his questions, thereby distorting the results of the observation.
4. If developments for only one specific organisation are of interest, only volunteering users should be selected.
5. Narrative descriptions are inaccurate as context of use information and should be replaced with structured descriptions in the course of elaboration.
6. User group profiles describe characteristics that must be met by users of an interactive product.

Please check the answers you think are correct.

You receive 3 points if all correct answers are checked. One, two or three answers might be correct.

Question 6

Types of context of use descriptions

Name three ways of describing the context of use. How do they differ regarding the presentation of information?

Please answer in free text.

You receive 1 point for each correct answer.

Question 7

User needs

What are the two syntactic components of a correctly formulated user need?

Give two examples of user needs and mark the two components in each example.

Please answer in free text.

You receive 1 points for the correct answer and 1 point for each correct example.

Question 8

User needs and user's wishes

Which of the following statements are correct?

1. Many user needs can also be found without a context of use analysis because they can be derived from common sense.
2. We can check if user needs are well-defined by using a syntax rule.
3. User needs must be formulated in a way so that all stakeholders can approve.
4. Users' wishes often describe requested functions without explicitly stating the users' needs.
5. A user need often mentions the system to be developed.
6. Users from different user groups for a certain interactive system sometimes have different user needs.

Please check the answers you think are correct.

You receive 3 points if all correct answers are checked. One, two or three answers might be correct.

Question 9

Derive user requirements

How do you derive one or more qualitative user requirements from a user need?

Please answer in free text.

You receive 3 points for the correct answer.

Question 10

Derive user requirements

Which of the following statements are correct?

1. User requirements can be derived from user needs using a syntax rule with no need for knowledge about the underlying context of use.
2. User requirements can also arise from the context of use without any special user needs.
3. System requirements are technical requirements for the interactive product that can be derived from user needs.
4. User requirements are requirements derived from user needs for the use of the interactive product.
5. Contradictions are more or less impossible if user requirements are derived from user needs in a systematic way.
6. User requirements are always qualitative, whereas system requirements are always quantitative.

Please check the answers you think are correct.

You receive 3 points if all correct answers are checked. One, two or three answers might be correct.

Question 11

Structure user requirements

Which action do you take to determine if you have derived all (derivable) user requirements from the gathered and described context of use adequately?

Please answer in free text.

You receive 3 points for the correct answer.

Question 12

Prioritise user requirements

Which of the following statements are correct?

1. User requirements must be assessed and prioritised for implementation by the stakeholders of an interactive product.
2. Schemes can be used to support finding user requirements and for explaining them to users.
3. User requirements should be developed in a way so that they can be implemented promptly within a release.
4. Schemes can be used to support the prioritisation of user requirements.
5. In agile development, the prioritisation of user requirements can still be carried out during development.
6. The prioritisation of user requirements should only be done by project management.

Please check the answers you think are correct.

You receive 3 points if all correct answers are checked. One, two or three answers might be correct.

Question 13

Communication partners of the user requirements engineer

Name three roles in projects who receive work products from the user requirements engineer.

For each role, name how they can use the work products from the user requirements engineer.

Please answer in free text.

You receive 1 point for the correct naming of roles and 2 points for the correct naming of work product usage.

Question 14

Prioritise user requirements

Which of the following statements are correct?

1. The user requirements engineer communicates the results of the user requirements analysis to the stakeholders.
2. Usability testers cannot use user requirements directly as a basis for test tasks in a usability test because user requirements are formulated without referencing a certain product.
3. Requirements Engineers need additional know-how so that they can work as user requirements engineers.
4. The user requirements engineer creates a project plan for the stakeholders for the implementation of user requirements in the interactive product.
5. Product managers are responsible for the implementation of all requirements within the design of the interactive product; project managers are responsible for the implementation project.
6. Interaction designers do not need input from the user requirements engineer because his work products are too unspecific for a concrete design.

Please check the answers you think are correct.

You receive 3 points if all correct answers are checked. One, two or three answers might be correct.

**The following pages contain sample answers for the theoretical test questions.
Continue to read only if you are done answering the test questions.**

2.4 Sample answers for the theoretical test questions

Question	Answer
1	2
2	<p><i>Provide a brief summary of what is meant by the term task model.</i></p> <p><i>What does a task model for applying for a credit card look like? (Pre-condition: The user has in general decided to apply for a credit card but does not yet know which credit cards are available and which one would fit best... Post-condition: The user has received the credit card and can make payments with the credit card.)</i></p> <p><u>Sample answer:</u></p> <p>A description of the sub-tasks within a task and performed by the user in the current context of use in order to achieve his goals.</p> <ul style="list-style-type: none"> ○ Identify available credit cards ○ Compare credit cards regarding costs and features ○ Choose a credit card ○ Make all necessary information available to the credit card provider ○ Receive the credit card ○ Sign the credit card <p>•</p>
3	<p><i>What is the difference between classic context of use analysis and model-based context of use analysis?</i></p> <p><u>Sample answer:</u></p> <p>The classic context of use analysis starts without any advance information about the context of use and begins with gathering all available context information. The model-based context of use analysis makes reasonable initial assumptions about the context of use based on previous knowledge.</p> <p>Therefore, the interview checklist for a model-based context of use analysis can contain more specific questions assuming that all or parts of the task models and user requirements are known.</p> <p>The more empirical context of use information is already available for the project team, the more sense it makes economically to do a model-based context of use analysis.</p> <p>The less empirical context of use information is available, the riskier it is to take the model-based context of use analysis approach when taking the immunisation trap into account.</p>
4	4, 5
5	3

Question	Answer
6	<p><i>Name three ways of describing the context of use. How do they differ regarding the presentation of information?</i></p> <p><u>Sample answer:</u></p> <ul style="list-style-type: none"> • High-level context of use description • Detailed narrative context of use description • Detailed structured context of use description <p>A high-level context of use description contains keywords for the user groups of an interactive system, their tasks, their resources and their physical and social environment.</p> <p>A detailed narrative context of use description contains all information known about the context of use. The information is given in narrative form, e.g. as an as-is scenario.</p> <p>A detailed structured context of use description contains all information known about the context of use. The information is given in the form of a model, e.g. a task model, goal catalogue or user journey.</p>
7	<p><i>What are the two syntactic components of a correctly formulated user need? Give two examples of user needs and mark the two components in each example.</i></p> <p><u>Sample answer:</u></p> <p>User needs always consist of a pre-condition that must be met (formulated as a condition, either “have something available” or “know something” or “capable of something”) and a goal supported by the pre-condition (“be able to decide something” or “be able to do something”)</p> <p>Example 1: The cook must know if the roast is done (pre-condition) in order to be able to stop the roasting process early enough (goal).</p> <p>Example 2: The theatregoer must know which seats are available at which price for a certain performance (pre-condition) in order to be able to decide which of the available seats to order (goal).</p>
8	2, 4, 6
9	<p><i>How do you derive one or more qualitative user requirements from a user need?</i></p> <p><u>Sample answer:</u></p> <p>By applying central questions to each user need:</p> <ul style="list-style-type: none"> ▪ What does the user need to be able to recognise in the interactive system in order to fulfil his need? ▪ What does the user need to be able to select in the interactive system in order to fulfil his need?

Question	Answer
	<ul style="list-style-type: none"> ▪ What does the user need to be able to input in the interactive system in order to fulfil his need?
10	1, 3, 4
11	<p><i>Which action do you take to determine if you have derived all user requirements from the context of use?</i></p> <p><u>Sample answer:</u></p> <p>Have users confirm the correctness of user requirements and the complete coverage of all user needs.</p>
12	1, 4
13	<p><i>Name three roles in projects who receive work products from the user requirements engineer.</i></p> <p><i>For each role, name how they can use the work products from the user requirements engineer.</i></p> <p><u>Sample answer:</u></p> <p>Product managers can use the work products from user requirements engineering as a basis for product roadmaps and release planning.</p> <p>Interaction designers can use the work products from user requirements engineering as a basis for developing use scenarios and low-fidelity prototypes.</p> <p>Usability testers use user profiles from user requirements engineering as a basis for recruitment of users and as a basis for usability test cases.</p>
14	1, 3, 5

3 Practical assignment – Example

3.0 Instruction

Introduction:

- In a moment, you will watch a video recording of part of a contextual interview. The recording lasts 30 minutes. (Note: The video does not exist for this public example test. The videos exist for the real assignments used during certification tests for the CPUX-UR.)
- Before the recording is shown, you have 5 minutes to read about
 - the goal of the context of use analysis (section 3.1),
 - the user group profile (section 3.2) and
 - the 4 questions on the interview checklist (section 3.3).
- Section 3.4 contains the text of the as-is scenario regarding questions 1, 2 and 4 of the interview checklist.
- You have 5 hours' time in total to complete the assignment.

Your task:

1. Complete the as-is scenario regarding question 3 based on the statements from the interviewee in the video recording. Write down your as-is scenario into the table next to question 3 in section 3.4.
2. Identify all other user groups that occur in the as-is scenario (section 3.4, questions 1 to 4). Write down all user groups into the table in section 3.5.
3. Identify **all user needs** that can be found in the as-is scenario **regarding question 4**. Write down all user needs identified into the table in section 3.6.
4. Subsequently, find all user requirements that can be derived from the user needs identified. Write down all derived user requirements also into the table in section 3.6.
5. All identified user needs and user requirements belong to the same (one) task.
 - Name the task, its pre-condition(s) and its post-condition(s).
 - Identify the sub-tasks of the task.
 - Assign each identified user requirement to the matching sub-task.
 - Use the table in section 3.7 for the assignment.
6. Write down possible behavioural errors made by the interviewer that you noticed in the video recording. Write them down in section 3.8.

3.1 Goal of the context of use analysis

A developer of apps for smartphones sees market potential for an app to support business travellers in the preparation and execution of business trips.

As it is unclear what the requirements for such a system are, a user requirements engineer is asked to perform a context of use analysis.

3.2 User group profile

Name of the user group	Expected professional training and professional activities	Demographic characteristics	Expected IT skills and IT equipment
Business traveller	<ul style="list-style-type: none">Completed apprenticeship or studies for some professionField operation, requiring frequent travelling by business vehicle, train or plane.	<ul style="list-style-type: none">male or femalebetween 25 and 65 years old	<ul style="list-style-type: none">SmartphoneNotebookWord processingE-MailUses electronic calendars

3.3 Interview checklist for the contextual interview

1. How often do you travel on business and to what destinations?
2. How do you decide for each trip, if you want to go by train, business car or plane?
3. Which is your preferred means of travel and why?
4. What problems do you experience with the respective means of travel during your business trip?

3.4 As-is scenario

The statements of the interviewed person regarding question 3 are to be added by the candidate.

Question	As-is scenario
<p>1. How often do you travel on business and to what destinations?</p>	<p>Mr. Smith works in field sales for a large service company. He acquires process audits with manufacturers of all kind for his company. The goal here is to analyse existing development processes regarding weaknesses in quality management and make detailed suggestions for improvement.</p> <p>Mr. Smith travels for business and is away from Tuesday to Thursday almost every week. He is responsible for the countries Germany, Austria and Switzerland. For his business trips, he uses his business car as well as trains and planes. When visiting potential customers, he is always dealing with budget managers for the area of quality.</p> <p>Mostly he returns back home in the evenings, so most of the time he does not return home until 21:00 and has to leave again the next day, early in the morning. Therefore, he does not get to spend much time with his family. He then stays at a hotel in the town of his next destination.</p>
<p>2. How do you decide for each trip, if you want to go by train, business car or plane?</p>	<p>The decision regarding the means of travel mostly depends on the distance and the respective travel time. Mr. Smith typically starts his business trips from home. Nowadays, he mostly travels by train or plane, even though he has a business car available. When he knows that the trip will take three consecutive days, he takes a taxi from his home, because overall this is cheaper than parking at the airport.</p> <p>He makes a new decision for each destination to go by train, car or plane. Unless it is a destination that he has been to several times before. If it is a completely new destination, it can take a while for him to find the best solution. He then searches the websites of rail companies and airlines to find out how long the trip will be. He also takes possible taxi rides into consideration, but they can become rather expensive. On site, he never takes local buses or trains because it is too troublesome for him. It takes too much thinking and results in too many bills that need to be kept for accounts upon returning.</p>

Question	As-is scenario
3. Which is your preferred means of travel and why?	The as-is scenario for this question must be added by the candidate.
4. What problems do you experience with the respective means of travel during your business trip?	Mr. Smith leaves home as late as possible. His wife doesn't like this, but he is rather relaxed about it. The calendar in his notebook and smartphone contains the travel plan for each of the three days (Tuesday, Wednesday, Thursday). This works rather well for the trip to the train station because the route has low traffic. It typically takes 15 minutes at maximum. It is a different story though for the airport. Here he has to decide when to leave anew every time. Unfortunately, Mr. Smith often forgets to check if the train or plane is delayed. In case he accidentally finds out, he will leave even later. He typically buys his tickets online the Friday before, no matter if he goes by train or plane. Normally this should be done by a colleague from the service office, but he thinks this is too complicated, which is why he prefers to do it himself. Nevertheless, Mr. Smith typically leaves home exactly one hour before the plane's departure time. It typically takes 20 minutes to get to the airport. Recently he drove to the airport with his business car to start a one-day business trip. When he arrived at the airport, all car parks were full. There were already ten cars waiting at each entrance. Mr. Smith only just caught his flight and had he have known about the car parks, he of course would have taken a taxi to the airport.
End of the extract of the contextual interview. Here the interviewer would continue with the second task of Mr. Smith.	-/-

3.5 Other user groups appearing in the as-is scenario

Note: The total number of user groups is less than or equal to 5. Providing 5 rows here does not mean that there are 5 user groups.

No.	Name of the user group
1	Business traveller (interviewed person)
2	Budget manager from potential customer
3	Spouse
4	Colleague at the service office
5	-/-

3.6 Identified user needs and derived user requirements (for question 4 only)

All content of the following table refers to question 4 from the interview checklist.

As-is scenario for question 4 from the interview checklist	Identified user needs (to be filled out by the candidate) (To be numbered, N1, N2, N3, ...)	Derived user requirements (to be filled out by the candidate) (To be numbered, UR1, UR2, UR3, ...)
<p>Mr. Smith leaves home as late as possible. His wife doesn't like this, but he is rather relaxed about it. The calendar in his notebook and smartphone contains the travel plan for each of the three days (Tuesday, Wednesday, Thursday).</p>	<p>N1 The business traveller must know how long the ride to the train station or airport will take in order to be able to decide when to leave.</p> <p>N2 The business traveller must know-when the time has come to leave in order to not miss the next means of transport.</p> <p>N3 The business traveller must know when the next trip will begin in order to be able to decide when to leave.</p> <p>N4 The business traveller must know which means of travel he will use for the next trip in order to be able to selectively reach the train station or airport.</p>	<p>UR1 The user must be able to recognise in the system how long the ride to the train station or airport will currently take.</p> <p>UR2 The user must be able to recognize that the point of time has come when he must leave.</p> <p>UR3 The user must be able to recognise in the system when his next trip with the train or plane will start.</p> <p>UR4 The user must be able to input into the system a trip with the train or plane including all details.</p> <p>UR5 The user must be able to recognise in the system for every trip if it is done by train or by plane.</p>

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As-is scenario for question 4 from the interview checklist	Identified user needs (to be filled out by the candidate) (To be numbered, N1, N2, N3, ...)	Derived user requirements (to be filled out by the candidate) (To be numbered, UR1, UR2, UR3, ...)
<p>This works rather well for the trip to the train station because the route has low traffic. It typically takes 15 minutes at maximum. It is a different story though for the airport. Here he has to decide when to leave anew every time.</p>	<p>See N1</p>	
<p>Unfortunately, Mr. Smith often forgets to check if the train or plane is delayed. In case he accidentally finds out, he will leave even later.</p>	<p>N5 The business traveller must know if the train or plane is delayed in order to be able to decide when to leave.</p>	<p>UR6 The user must be able to directly recognise in the system if his train or flight is delayed. UR7 The user must be able to recognise in the system the expected delay and any changes of the delay at any time.</p>

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As-is scenario for question 4 from the interview checklist	Identified user needs (to be filled out by the candidate) (To be numbered, N1, N2, N3, ...)	Derived user requirements (to be filled out by the candidate) (To be numbered, UR1, UR2, UR3, ...)
<p>He typically buys his tickets online the Friday before, no matter if he goes by train or plane. Normally this should be done by a colleague from the service office, but he thinks this is too complicated, which is why he prefers to do it himself.</p>	<p>N6 The business traveller must possess a ticket for each ride with a train or plane in order to be able to start the trip.</p> <p>N7 The business traveller must know if he already has a ticket for his next trip or if he still needs to get one in order to be able to start the trip.</p>	<p>UR8 The user must be able to select in the system a ticket (and initiate the purchase) for a stored train ride or flight. (See also UR4)</p> <p>UR9 For each planned trip, the user must be able to recognise in the system if he already has a ticket available. (See also UR4)</p>
<p>Nevertheless, Mr. Smith typically leaves exactly one hour before the plane's departure time. It typically takes 20 minutes to get to the airport. Recently he drove to the airport with his business car to start a one-day business trip.</p>	<p>See N1</p> <p>See N4</p>	

As-is scenario for question 4 from the interview checklist	Identified user needs (to be filled out by the candidate) (To be numbered, N1, N2, N3, ...)	Derived user requirements (to be filled out by the candidate) (To be numbered, UR1, UR2, UR3, ...)
<p>When he arrived at the airport, all car parks were full. There were already ten cars waiting at each entrance. Mr. Smith only just caught his flight and had he have known about the car parks, he of course would have taken a taxi to the airport.</p>	<p>N8 The business traveller must have a parking lot available at the train station or airport for his car in order to be able to start the trip by train or plane.</p> <p>N9 The business traveller must know before leaving if there will be parking lots available at the train station or airport upon arrival in order to be able to decide if he goes by business car or by taxi.</p>	<p>UR10 The user must be able to recognise in the system if parking lots are available at the time of arrival.</p> <p>UR11 The user must be able to select a reservation for a parking lot for a definable point in time.</p> <p>UR12 The user must be able to order a taxi in the system.</p>

3.7 User requirements assigned to sub-tasks

	To be filled out by the candidate
Name of the task:	Start a planned business trip
Pre-condition(s):	The business traveller prepares himself for a business trip by car, train or plane that he will soon start.
Post-condition(s):	The business traveller has started the trip with the means of transportation as planned.

Subtasks	Assigned user requirements (Just naming the numbers as references is enough, e.g. "UR4")
1. Determine when the train or plane actually departs	UR3 UR6
2. Check if one has a ticket available	UR9
3. Buy ticket if necessary	UR8
4. Identify the required departure time	UR1
5. Decide to go by taxi or by business car	UR10 UR11 UR12
6. If applicable, order a taxi	UR12
7. Start the journey to the airport or train station	UR7

3.8 Observed behavioural errors made by the interviewer (Examples)

- The interviewer does not let the interviewee finish his sentence
- The interviewer suggests solutions in the contextual interview