

Workshop

Test Item Reform



**WIRTSCHAFTS
UNIVERSITÄT
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- What is this?
 - A set of classes to support assessment based on stock xowiki workflow (xowf)
 - Supports different kinds of Questions
 - Single choice
 - Multiple choice
 - Short text questions
 - Text questions
 - Support different feedback levels and statistics
 - Workflows for the production of test items, for making tests (surveys) consisting of multiple test items, and for answering test items

Basic of Workflows for Test Items

■ Three kinds of workflows

■ Content creation workflows

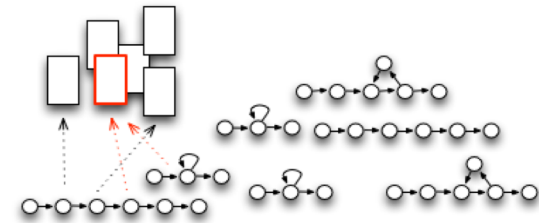
- Managing “Test Items”
- Examples: Exercises, Questions
- Workflow operations: Creating, editing, publishing, unpublishing

■ Workflows on collections of test-items (surveys)

- Examples: online-exam, inclass-quiz
- Workflow operations: compose, publish, terminate, show results, statistics, delete results
- Based on test-items,
- Perform question management and answer management
- Composed of Test-Items

■ Answering workflows

- Provide answers, navigate, review, submit
- Controlled by Survey workflows



- Structure of Test Items

- Common fields (meta-data):

- Title, ..., minutes, grading options, shuffling options, feedback

- Question type specific fields ("interaction types")

- Single choice (repeatable)
 - Multiple choice (repeatable)
 - Short text answers (repeatable)
 - Text

- For all interaction types

- Auto-correction, teacher oriented, i.e. for text answers a pre-correction
 - Text-based interactions via "correct when" specs

- Technically:

- Form generators
 - A "Save" operation calls "convert to internal", the result contains a "form" and "form_constraints"

Frage 2: IP Pakete (4 Minuten)

Füllen Sie die Felder zu folgenden Fragen aus:

- Wieviele Bytes hat der Kopfteil eines TCP-Paketes bei IPv4?

40

[i] Falsch. eq 20

- Wie heißt der Nachfolger von IPv4?

Der Nachfolger heisst IPv6

[i] Richtig! contains IPv6

- Wieviele Bytes hat der Kopfteil eines IP-Paketes bei IPv4?

20

[i] Richtig! eq 20

- Auto correction
Feedback on text
based question types
- For text interactions:
Teacher-oriented
feedback to aide marking
(providing highlighting
etc).

Frage 3: Kopplungseinheiten (2 Minuten)

Beschreiben Sie in kurzen Worten den Unterschied zwischen einem Signalverstärker (engl.: Repeater) und einer Netzwerkbrücke (engl.: Bridge).

Ein Repeater bietet nur Signalverstärkung, aber keine Netzlasttrennung. Netzwerkbrücken lernen von selber.

[i] Richtig! contains Netzlasttrennung

What's new for test items (1)

■ Shuffling

- Never/always/per-user
- Max answers
- For MC/SC/Short-Text

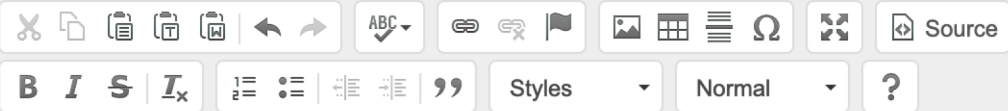
 xowf

Online Exam

Name*
en:übertragung
Shortname to identify an entry within a folder, typically lowercase characters

Title
Wireless Data Communication (SC, max 3)

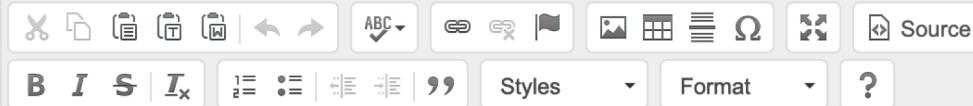
Creator
Gustaf Neumann

Single Choice Question
Minutes **Shuffle** ☐ None ☒ Per user ☐ Always **Show Max**
Exercise Text

Which of the following communication protocols is based on wireless transmissions?

What's new for test items (2)

- Short-text Questions
- Several answer options
- Correct-when per alternative

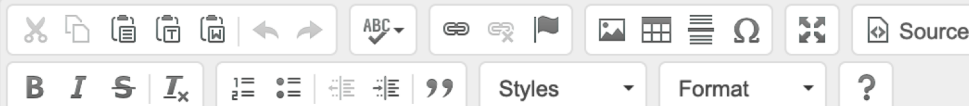
Exercise Text



Please fill out the following questions:

body

Sub-Question



How many bytes has the header of an IP packet (IPv4)?

Answer ☒ Number ☐ Single Word ☐ Multiple Words ☐ Multiple Lines **Lines** 1

Correct When

eq 20

Condition, when the answer is correct, specified as a predicate followed by arguments (Tcl words). The predefined predicates are "eq", "gt", "ge", "lt", "le", "btwn", "in", "contains", "match", "answer_words"

- Collection of test items
- Managed by teacher to control interactions with students

- Based on a common API
 - Renaming form_loader
 - Answer fields in Test Items are renamed on the fly based on form names
 - Avoids name clashes between form fields of different test items
 - Question Manager
 - Interactions between Survey and test items
 - Answer Manager
 - Queries/collects/evaluates/... answers from students

- Currently 2 different “survey” scenarios implemented
 - Online exam
 - Teacher-paced in-class quiz

- Logic like before
- Removed low-level HTML code hacking
 - Was dependent of question types etc.
- Based on new test item types
 - Shuffling, short-text questions, auto correction, etc.
 - Some old code not yet removed
- Internationalized
- Optional cryptographic support for student submissions
 - Teacher can prove that marked result has not been modified after submission
 - Currently based on digital fingerprints (SHA 256)
 - Also possible trusted timestamping (RFC 3161), e.g. via <https://www.globalsign.com/en/timestamp-service/>

Crypto support

... chosen by teacher when creating the exam

Prüfung aus ...

xowf

Export for Stefan

Folder with index page

Folder with no index page

Fragen Kapitel 1

KM Tutorial

Online Exam

Redirect Action

Review Workflows

Test folder

Mocktest

Bezeichnung der Prüfung

Prüfung aus ...

Fragen*

Aktuelle Auswahl

Kopplungseinheiten

IP Pakete

Netzwerkprotokolle

Auswahlmöglichkeiten

Sonne

Test empty

Colors of the traffic light

[i] Wählen Sie Fragen aus

Signatur

☒ Ja ☐ Nein

[i] Erzeugung eines digitalen Fingerabdrucks als Beleg der unveränderten Abgabe für Studierende

Erstelle Prüfung

Teacher-paced in-class Quiz

- Teacher determines interactively the question to be displayed (“pace”)
- Participants can use [QR code](#) to answer question
- Teacher can [switch](#) per question between obtaining answers and showing results/[statistics](#)
- Participants display is updated automatically with new question, when teacher proceeds.
- Teacher sees with [live updated counters](#), how many participants have provided answers or started looking at the question.

Answering mode

Please answer: Question 3

Submitted Answers

5/7 participants answered this question

Live updated counter

Please fill out the following questions:

- How many bytes has the header of a TCP packet (IPv4)?

- How many bytes has the header of an IP packet (IPv4)?

- What is the name of the successor of IPv4?



QR-Code
for participants
to join in-class quiz

Switch between
questions

[Refresh, Listing of Submitted Quizzes, Print]

Students can now answer via </demo/xowf/online-exam/inclass-quiz16?m=answer>

1

2

3

4

Show Results

Close quiz

Statistics from MC Question

Results of: Question 1

Submitted Answers

7/7 participants answered this question

Which of the following statements are correct?

- ☒ TCP is a connection oriented protocol with error handling and provides a reliable transmission of data over different types of unknown networks.

100 %

- ☒ The network layer is responsible for routing tasks.

86 %

- ☐ IP is a connection oriented protocol

14 %

- ☐ The layers 1 to 4 of the ISO/OSI model contain application protocols.

14 %

- ☒ IP is on the same OSI layer like ICMP.

29 %

[\[Refresh\]](#), [Listing of Submitted Quizzes](#), [Print](#)]

1

2

3

4

Get answers for this question

Close quiz

Answers from Open Text question

Quiz ...

xowf

Online Exam

Results of: Question 4

Submitted Answers

7/7 participants answered this question

Describe in two lines the performance relevant differences between a repeater and a bridge.

... traffic ... separation ... link ... layer ...

29 %

▼ Answers

- 1: Layer2 vs layer1
- 1: Repeater network separation performance
- 1: Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea
- 1: The repeater will repeat andò waste the bandwidth, the bridge is used to cross the rivers
- 1: Hello
- 1: The bridge joins networks, while the repeater serves as another connexion point for the same one
- 1: a bridge bridges and a repeater repeats

▼ Words

[\[Refresh\]](#), [Listing of Submitted Quizes](#), [Print](#)

1

2

3

4

Get answers for this question

Close quiz

Word Cloud from open text

OpenACS – The Toolkit for Online Comm

Quiz ...

Online Exam

Re

Describe in two lines the performance relevant differences between a repeater and a bridge.

... traffic ... separation ... link ... layer ...

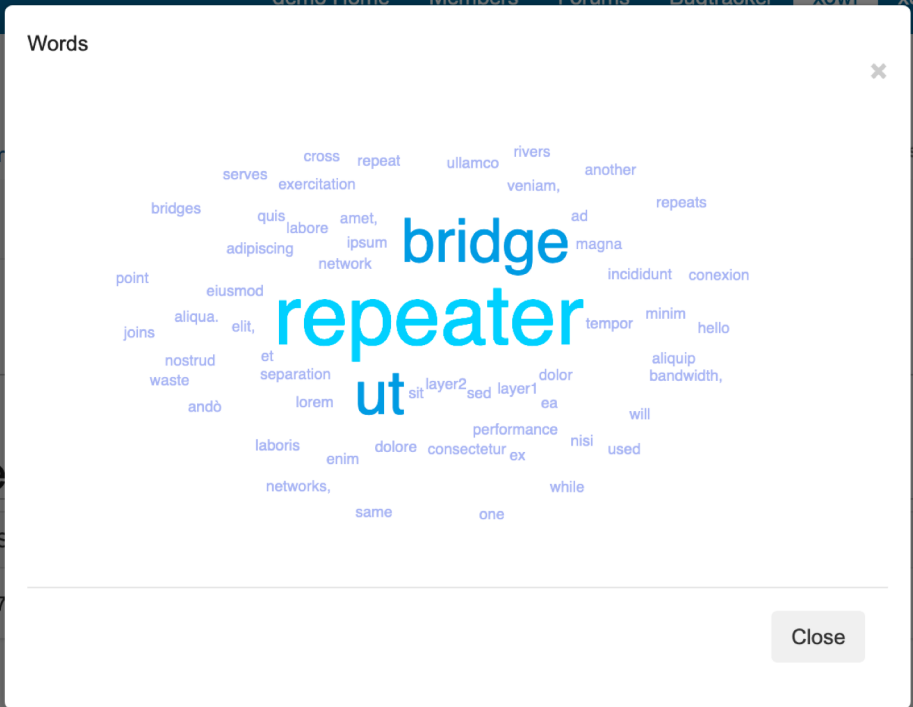
29 %

▼ Answers ▼ Words

[Refresh, Listing of Submitted Quizes, Print]

1 2 3 4 Get answers for this question Close quiz

Words



bridge repeater ut

Other words in the cloud include: serves, cross, repeat, uilamco, rivers, another, repeats, bridges, quis, labore, amet, ad, magnam, adipiscing, ipsum, network, incididunt, connexion, eiusmod, aliquid, elit, tempor, minim, hello, joins, nostrud, waste, ando, lorem, sit, layer2, sed, layer1, dolor, ea, will, laboris, enim, dolore, consectetur, ex, nisi, used, networks, same, one, while, performance, aliquid, bandwidth.

Close

Statistics from Short Text question

Results of: Question 3

Submitted Answers

5/7 participants answered this question

Please fill out the following questions:

- Marking based on "correct when"
- Displayed answer text based on "correct when"
- Ability to show answers and/or word cloud

- How many bytes has the header of a TCP packet (IPv4)?

20

0

▼ Answers ▼ Words

- How many bytes has the header of an IP packet (IPv4)?

20

20 %

▼ Answers ▼ Words

- What is the name of the successor of IPv4?

... IPv6 ...

40 %

▼ Answers ▼ Words

[\[Refresh\]](#), [Listing of Submitted Quizzes](#), [Print](#)

1

2

3

4

Get answers for this question

Close quiz