



ONYX-Exercises as a Tool for Mathematics in an LMS like OPAL/Moodle Training Workshop

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HTWK Leipzig

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A warm welcome at
Leipzig University of
Applied Sciences
and a short portrait

Training Workshop within
"OPATEL: Online
Platform for Academic
Teaching and Learning in
Iraq and Iran"

Tools for E-Learning and
E-Assessment in Saxony:
OPAL/ONYX

Training Workshop

ONYX-Exercises
Tool for Mathematics
in LMS OPAL/Moodle
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Program of the Training Workshop

- During your Training Workshop you will gain experience how we at HTWK Leipzig use online platforms for academic teaching and learning.
- I think, Dr. Qashi and his colleagues prepared an interesting program for you.
- Today, I would like to introduce the test suite ONYX to you, which is developed by `https://www.bps-system.de/cms/index.php?id=43&L=1` .

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OPAL

Learning Management System

- Content Management System for providing documents, for organizing learning and teaching, for communication between students and teachers.

ONYX

Test Suite

- Tool to create and examine E-Assessments, connected to the CAS Maxima and (NEW) to the Virtual Programming Lab VPL
- independent of OPAL, e.g. can be used with Moodle

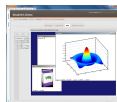


VPL/ONYX

I would like to show you in short, how VPL/ONYX can be used for e-learning in programming, particularly for automated evaluation of program code.

The Virtual Programming Lab (VPL) for Moodle can be tested by clicking on

Autotool developed by Prof. Waldmann at HTWK Leipzig is a stand alone alternative and can be tested by clicking on



Autotool
Trial

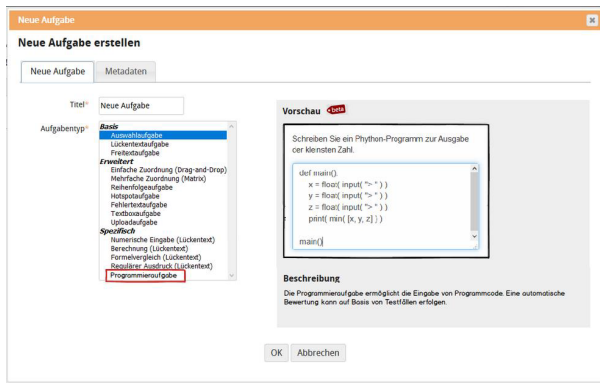
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Relations between OPATEL and the SMWK-Project "AutONYX"

"Formula Exercise" and "Programming Exercise" in ONYX



Neue Aufgabe erstellen

Titel: Neue Aufgabe

Aufgabentyp:

- Basis
 - Numerische Eingabe
 - Lückentextaufgabe
 - Freitextaufgabe
- Erweitert
 - Einfache Zuordnung (Drag-and-Drop)
 - Mehrfache Zuordnung (Matrix)
 - Reihenfolgeaufgabe
 - Hotspotaufgabe
 - Fehlertextaufgabe
 - Textboxaufgabe
 - Uploadaufgabe
- Spezial
 - Numerische Eingabe (Lückentext)
 - Berechnung (Lückentext)
 - Formelvergleich (Lückentext)
 - Regulärer Ausdruck (Lückentext)
 - Programmieraufgabe

Vorschau

```
def main():
    x = float(input( "> " ))
    y = float(input( "> " ))
    z = float(input( "> " ))
    print( min( [x, y, z] ))
main()
```

Beschreibung

Die Programmieraufgabe ermöglicht die Eingabe von Programmcode. Eine automatische Bewertung kann auf Basis von Testfällen erfolgen.

OK Abbrechen

"Virtual Programming Lab" VPL for Moodle has been connected to ONYX

- Input of exercises by teacher as free text

Aufgabe bearbeiten

Frage & Antwort Bewertung Feedback Optionen Variablen Metadaten

Aufgabe

Titel* Programmieraufgabe

Aufgabenstellung

B *I* U % ↵ ↶ ↷ ↸ ↹ ↺ ↻ ↻ ↻ ↻

Absatz ▾ 9pt ▾ ×_y ×'

Schreiben Sie ein Programm in Octave, das zu einer quadratischen Matrix eine LR-Zerlegung ermittelt und diese wie in der Vorlesung geschildert innerhalb einer Matrix abspeichert (falls die LR-Zerlegung nicht existiert, soll die Nullmatrix zurückgegeben werden).

Aufgabentyp Programmieraufgabe beta

Punkte 1

Punktzahl für die gesamte Aufgabe. Um eine individuelle Bewertung zu

- Input of program code (e.g. Java, C++, Matlab/Octave) by student as free text

Programmieraufgabe

Schreibe ein Programm...

Der Roboter soll auf Tastendruck die Farbe ändern.

```
public class example {  
    public static void main(String[] args) {  
        System.out.println("blue");  
    }  
}
```

Alle Antworten abgeben



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- Evaluation using cases or your own framework via VPL

Antworten

Automatische Auswertung Aktivieren

Programmiersprache

Fallprüfung

```
Case = LRZerlegung
input = LRZerlegung([1 2;3 4])
output = [1 2,3 -2]
Case = ...
```

Definieren Sie Testfälle zur automatischen Prüfung des Programmcodes der Teilnehmer. Die Definition der Testfälle erfolgt in der VPL-Syntax.

Lösungshinweis

Der Lösungshinweis wird dem Teilnehmer als Musterlösung angezeigt.



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- Detailed feedback via VPL

Programmieraufgabe

☑ Erreicht: 1 von 1 Punkt(en)

Schreibe ein Programm...

Der Roboter soll auf Tastendruck die Farbe ändern.

```
public class example {
    public static void main(String[] args) {
        System.out.println("red");
    }
}
```

✓

Korrekte Lösung

```
public class example {
    public static void main(String[] args) {
        System.out.println("color");
    }
}
```

Frage 1/1

VPL-Ausgaben

Testing 1/3 : blue
Testing 2/3 : green
Testing 3/3 : red

```
<!--  
-Test 2, green (-33.333)  
Incorrect system result
```



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Thanks for your attention!