

# PRACTICING WIMS : HANDS-ON TRAINING

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*WIMS (Web Interactive Multipurpose Server) is a collaborative, open source e-learning platform hosting online interactive exercises in many different fields such as mathematics, chemistry, physics, biology, French and English among others. The pedagogical specificities of WIMS will be shown, such as a bank of exercises readily available, the deeply embedded random feature, a wide variety of exercise types, including formal answers and personalized student monitoring tools. We will also present how to make custom exercises.*

## INTRODUCTION

*WIMS (Web Interactive Multipurpose Server) is a collaborative, open source e-learning platform hosting online interactive exercises in many different fields such as mathematics, chemistry, physics, biology, French and English among others. A bank of exercises is readily available on each server.*

**Calcul de flux à travers une surface**

On définit un repère cartésien (Oxyz) et une base orthonormée ( $\vec{u}_x, \vec{u}_y, \vec{u}_z$ ). On considère une surface carrée S de côté  $a = 5$  m plongée dans le plan (xOy).

Un champ vectoriel constant existe dans tout l'espace, il est représenté par un vecteur  $\vec{G}$  (sans dimension) situé dans le plan (yOz), de norme 2 et faisant un angle  $d=0.66$  radians avec la direction (Oz).

La normale à la surface est représentée par un vecteur unitaire  $\vec{n}$  dirigé selon (Oz) (donc  $\vec{n} = \vec{u}_z$ ).

Calculer numériquement le flux  $\phi$  du vecteur  $\vec{G}$  à travers la surface S :

$$\phi = \iint_S \vec{G} \cdot d\vec{s} = \text{_____} \text{ S.I.}$$

Quelle est l'unité de flux dans le cas présent ?

$\phi$  s'exprime en \_\_\_\_\_

Consignes :  
ouvrir #wimstopbox cette page nc 4 chiffres significatifs.

**La Ruche**

En-tête: En-tête, Enoncé, Préparation, Analyse, Code OEF, Sauvegarde

Variables: concent, volume, volumeFinal, result

ESSAIMS

On dispose d'une solution-mère de sel dont la concentration est  $\text{concent}$  mol/L. On prélève un volume  $\text{volume}$  mL de cette solution-mère à l'aide d'une pipette jaugée, qu'on verse dans une fiole jaugée de volume  $\text{volumeFinal}$  mL. De l'eau est ajoutée dans la fiole pour compléter, puis on agite.

La concentration de sel dans la fiole est :

WIMS has some unique pedagogical specificities, such as

- An extensive bank of interactive exercises in various fields (around 4000 exercises, mostly in French, but also in English)
- WIMS is open source. Custom exercises produced by the users can be shared with all the WIMS servers in the world
- A deeply embedded random feature, providing the possibility to do an exercise in different ways and to test a large number of students simultaneously
- The possibility to configure a wide variety of exercise types such as multiple choice questions, drag and drop exercises, selecting a graph, drawing interactive curves, exercises requesting a numerical value or a formal answer, and many others.
- Support for many languages
- Support for external packages / software (JSMol, JSXGraph Povray, maxima, Pari/GP, Octave...)

- Support for LaTeX, HTML, Javascript, MathML
- Personalized monitoring tools for filtering student results: success rate, quality of work, results by skill,...

The WIMS platform complements various other platforms and Learning Management Systems such as Moodle or Chamilo.

## **GOALS OF THE WORKSHOP**

The goals of the workshop is to learn how to create a virtual class on the WIMS platform by selecting exercises readily available from the exercise bank, how to create custom exercises and show how some of the specific pedagogical aspects of WIMS can be integrated in the exercises.

## **TOPICS AND ACTIVITIES DURING THE WORKSHOP**

The proposed activities are the following

- Presentation of the interface
- Creation of a class with worksheets and documents
- Using the WIMS search engine to find an exercise or activity
- Searching for an exercise using a classification by field (maths, biology, physics,...) and the associated sub-fields (algebra, calculus,...)
- Integrating existing exercises in the class.
- Creation of a simple exercise using a template.
- Creation of an exercise using an interactive editor in WIMS.

## **RESOURCES**

Server at the Université Savoie Mont Blanc : <https://wims.univ-savoie.fr/>

Server at the Université Paris Sud : <https://wims.auto.u-psud.fr/wims/>

Serveur du CNRS : <https://wims.math.cnrs.fr/wims/>

Tutorial for the creation of classes : <https://wims.di.u-psud.fr/wims/wims.cgi?module=help/teacher/docbeginner.fr>

Site of the WIMSEDU NGO : <http://wimsedu.info>