



CaseInE

Caseine:
an open pedagogical environment
and a teaching community





A training platform

- Help learning process
- Increase **engagement** and **autonomy** of students
- Better use of **teacher time**
- Improve the **quality** of the contents
 - (sharing = reviewing from others)
- Improve **visibility** of the contents
 - (communication)

caseine.org



3 components

- monitor students' progress,
- share contents between the teachers
- automatically evaluate
 - computer code
 - mathematical models
 - classical and advanced quizzes

A pedagogical environment

A pedagogical environment



- Do you use Moodle ?



Yes

No



A pedagogical environment

OPL User guide: Modeling LP problems with OPL with external data

 Production of wines with external data

 14 

 Bill Of Materials

 8 



Skills Solving

Recognize the canonical and standard forms and know the transformations

Linearize an objective function of the form maximum of a minimum or minimum of a maximum

  Playing with forms

 5  30  2

  Forms step by step

 16

Solve graphically an LP with two variables:


- draw the feasible region
- draw the level lines for the objective function
- find the optimal solution(s) on the graphic

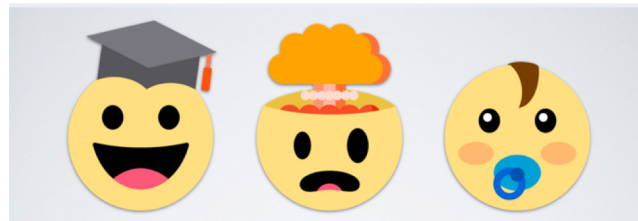
 Draw LPs in 2D with Geogebra





A pedagogical environment

- Based on Moodle 
- Plugin development
 - Completion levels
 - Likes
 - Ski run color



MY OR BOTTLE



Overview



Details



Wall of Fame

- 1) 83%
- 2) 65%
- 3) 59%
- 4) 39%
- 5) 36%

| | | | | |
|---|---|----------------|---|----|
|  |  | Perfumes |  | 10 |
|  |  | Dairy Products |  | 8 |
|  |  | Apples |  | 2 |



A pedagogical environment

- Open to academic community:
edugain
connexion

Fédération eduGAIN



Sélectionnez votre établissement

Pour accéder au service caseine.org sélectionnez ou cherchez l'établissement auquel vous appartenez.

Catal|

▼
Consorcio de Servicios Universitarios de Catalunya
ICCU - Central Institute for the Union Catalogue
Universitat de Vic - Universitat Central de Catalunya
Universitat Oberta de Catalunya
Universitat Politecnica de Catalunya

Sharing between teachers

Sharing contents between teachers



- License which allows sharing (CC, open...)
- Each teacher remains owner of their content
- Each teacher chooses to share or no
- A shared space *i.e.* a feature to easily:
 - Tag/mark your activities with relevant information for sharing
 - Share your activities
 - Search among the shared activities

Sharing space

Activity shared to teaching community



Search all the platform ?

▼ **Search by keywords**

No selection

Search

[Advanced Search Form](#)

▼ **Search by moodle identifiers**

?
Module Id

No selection

Search

?
Module Name

No selection

Search ▼

?
Course Name

No selection



Sharing space












Result: 232

Télécharger les données au format

Microsoft Excel (.xlsx)

Télécharger

1 2 3 4 5 6 7 8 »

| Line | Id | Module | Add Cart | Course Name | Author(s) | License |
|------|-----|--|---|-------------------------------------|--|------------------|
| 1 | 28 |  Palindrome? |  | Informatique - python (GI, 1A-IPID) | Hadrien Cambazard, Nicolas Catusse, Pierre Lemaire | CC-BY-NC-SA v4.0 |
| 2 | 57 |  Couleur? |  | Informatique - python (GI, 1A-IPID) | Hadrien Cambazard, Nicolas Catusse, Pierre Lemaire | CC-BY-NC-SA v4.0 |
| 3 | 58 |  Patient? |  | Informatique - python (GI, 1A-IPID) | Hadrien Cambazard, Nicolas Catusse, Pierre Lemaire | CC-BY-NC-SA v4.0 |
| 4 | 67 |  MultiplesDeTroisEtCinq*  |  | Informatique - python (GI, 1A-IPID) | Hadrien Cambazard, Nicolas Catusse, Pierre Lemaire | CC-BY-NC-SA v4.0 |
| 5 | 124 |  Mââthoux? |  | Informatique - python (GI, 1A-IPID) | Pierre Lemaire | CC-BY-SA v4.0 |

Search ▼

Activity type
No selection

Search ▼

Main Dewey classification
No selection

Search ▼

Author(s)
No selection

Search ▼


Difficulty level
No selection


Search ▼

Required concepts
No selection

Search ▼


Sharing Cart

 One idea, one story: when the salesman started its travel →✕

 Implémentation de la classe Partition et de l'algorithme de Kruskal - Java →✕



The community of teachers

- Sharing space
- Discussions 
- Caseine days – distant seminars
- Newsletter
- Thematic community of teachers
 - Python, Java, SQL, OR...
 - Computer science in high school
 - math

Automatic evaluation





Automatic evaluation

- Do you teach computer science or math?

yes ✓

no ✗



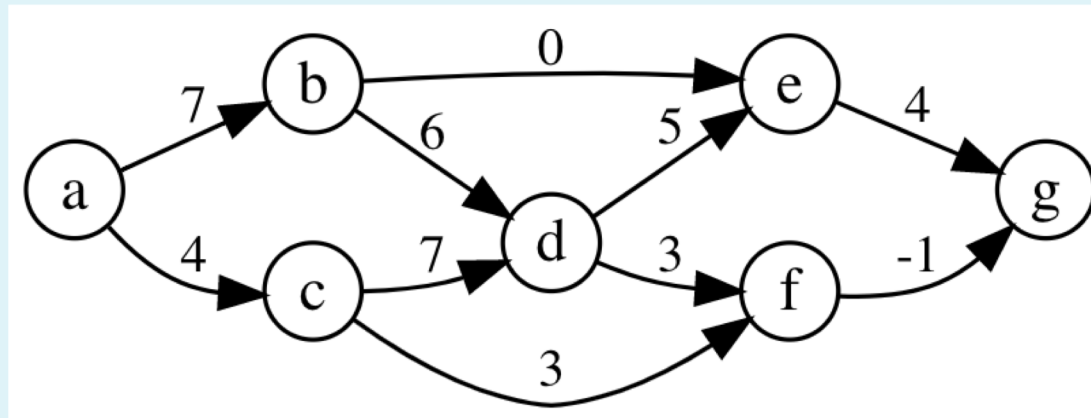
Question 1

Not complete

Marked out of 1.00

Flag question

Edit question



Indicate which of the following topological ordering is correct for this graph ?

With the correct topological ordering, apply the shortest path algorithm starting from 'a' and complete the second line of the table with the final values (the first line of the table contains the vertices following the topological order) .

To express an 'infinite' distance, use: '+INF'.

| | | | | | |
|-----|----------------------|----------------------|----------------------|----------------------|----------------------|
| a - | - | - | - | - | - |
| 0 | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |

Check



Automatic evaluation

- Based on VPL tool
 - A Moodle plugin
 - vpl.dis.ulpgc.es
- Used on caseine for
 - LP, MIP models, CP models
 - Dynamic programming
 - Graph algorithms and data structures
 - Basic and advanced programming
 - Java, Python, C...
 - R
- Evaluation systems: Java Junit, Python Unittest, SQL...
- Experimental code complexity





Plugin developed by Juan Carlos Rodríguez del Pino

The screenshot shows an IDE window with several tabs: house.txt, UFForest.java, **WeightedGraph.java**, UFTable.java, ExecutableEn.java, and Edge.java. The main editor displays Java code for a Kruskal algorithm. Line 112 contains a comment: `/// A comment from the teacher`. The code includes a `kruskalUFTable()` method that returns a `WeightedGraph` object.

On the right side, there is a panel with a "Proposed grade: 100 / 100" indicator and a "Comments" section. The "Tests results" section lists 12 test cases with their respective scores out of 36:

- UFForest_test.find (1/36)
- UFForest_test.find_union (2/36)
- UFForest_test.union_sameClass (3/36)
- UFForest_test.union_Links (4/36)
- UFForest_test.partition_complet (5/36)
- UFForest_test.exception_constructo (6/36)
- UFForest_test.exception_union (7/36)
- UFForest_test.exception_find (8/36)
- UFForest_test.exception_meme_cla (9/36)
- UFForest_test.exception_deja_unis (10/36)
- UFTable_test.find (11/36)
- UFTable_test.find_union (12/36)

Below the test results, there are sections for "Execution" and "Description".



VPL Questions

Question 1

Answer saved

Marked out of 1.00

Flag question

Edit question

Complétez la fonction suivante, qui affiche les n premiers nombres de la suite de Fibonacci.

Pour rappel, cette suite est définie par :

$$f(1) = 1$$

$$f(2) = 1$$

$$f(n) = f(n - 2) + f(n - 1), \forall n > 2$$

[Correction](#) | [Reset](#)

```
1 def fibonacci(n):
2     f1=1
3     f2=0
4     i=1
5     while i<=n:
6         print(f1)
7         tmp=f1+f2
8         f2=f1
9         f1=tmp
10        i+=1
```

Run

Pre-check

Evaluation:

-Summary of tests

```
>+-----+
>| 1 test run/ 1 test passed |
>+-----+
```

Eclipse plugin



runtime-EclipseApplication - MonSuperExerciceJavaCaseine/src/Executable.java - Eclipse Platform

File Edit Source Refactor Navigate Search Project Run Window Help

Package Explorer

- MonProjetJavaUltraSecret
- MonSuperExerciceJavaCaseine
 - JRE System Library [jre1.8.0_201]
 - src
 - (default package)
 - Executable.java
 - IntegerTriplet.java
 - JUnit 5

```
/**  
 * A class to perform your own tests  
 * @author hadrien cambazard  
 */  
public class Executable {  
  
    public static void main(String[] args) {  
        //I can test my class here: create instances and call the metho  
  
        System.out.println("Hello World !");  
  
        /// Commentaire de l'enseignant  
    }  
}
```

Outline CaseInE View

IntegerTriplet*

| Description | Result |
|---|--------|
| Implement a class IntegerTriplet to represent a triplet of three integers and compute, sum, average, concatenation, ... | |
| Contact: hadrien cambazard | |

Reload description

Error Log Problems @ Javadoc Declaration Console Tasks Caseine Comments

1 items

| Project | Location | Message |
|-----------------------------|--------------------|-----------------------------|
| MonSuperExerciceJavaCaseine | Executable.java:12 | Commentaire de l'enseignant |

Writable Smart Insert 10:45

Eclipse plugin



Outline CasInE View

IntegerTriplet*

| Description | Result |
|---|--------|
| 5 Tests Errors : 1 Failures : 1 | |
| Proposed grade: 50 / 100 | |
| All tests [08/04/19 10:43] | |
| IntegerTriplet | |
| sum | ✓ |
| concatenate | ✓ |
| concatenate | ✓ |
| average | ✗ |
| average | ✗ |

Incorrect program result
Input : IntegerTriplet(1,2,3).average()
Program Output: 0.0
Expected Output: 2.0
Method : average

- Close Project
- Close Unrelated Projects
- Assign Working Sets...
- Coverage As ▶
- Run As ▶
- Debug As ▶
- Validate
- Restore from Local History...
- PyDev ▶
- CasInE ▶**
- Team ▶
- Compare With ▶
- Configure ▶
- Properties ⌘I

- Reset
- Pull
- Push
- Evaluate
- Add GI libraries

Students and teachers



Students in courses from...

- **Novosibirsk State University**
- **AFEKA, Tel-Aviv**
- **Université de Louvain**
- **Lycée Claudel, Ottawa, Canada**
- **Lycée fr de Santa Cruz, Bolivia**
- Grenoble-INP
- Université Grenoble-Alpes
- Université Clermont-Auvergne
- Université d'Avignon
- INSA de Lyon
- Université de Caen Normandie
- Université de Haute-Alsace
- Lycée Champollion (Grenoble)
- Lycée A. Croizat (Moutiers)
- Lycée Marlioz (Aix les Bains)
- Lycée Les Catalins (Montélimar)
- Lycée Blaise Pascal (Clermont-Ferrand)
- Lycée Théodore de Banville (Moulins)
- Lycée Blaise Pascal (Ambert)

Numbers in 19-20 : 7300 connected users
~ 1000 users per day



The teacher community of caseine

- Access to open courses: **Free** for initial university courses and individual training
- Creating a course
 - Free for initial university courses
 - Contribution to costs for lifelong university training (formation continue)
 - Paying service for companies which sell formations
- Terms
 - Everyone is author of its creations
 - Everyone can choose to share or not
 - Moodle developments (shared plugins)
 - Caseine specific developments



Variety of usages

Support for « active classrooms » but as many practices as there are teachers:



Autonomy
Personal work



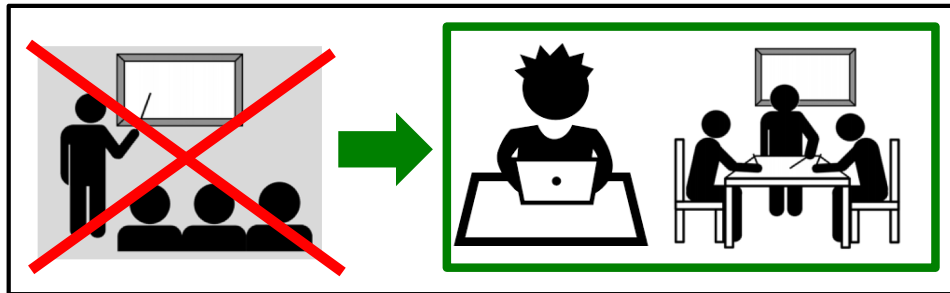
Autonomy
Team work



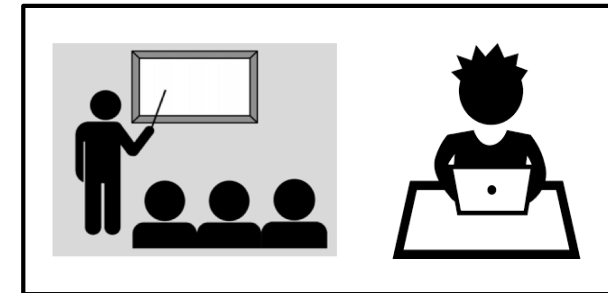
Autonomy
Personal work at home



Individual
Evaluation



Support to conduct a *flipped* classroom



Traditional classroom
with validation in autonomy

Only one agreement: focus on **student's active role**

Core team



Hadrien Cambazard
(pilote, Java + RO)



Nicolas Catusse
(pilote, Java + RO)



Nadia Brauner
(pilote, RO)



Fabrice Ménard
(Ingénieur pédagogique)



Aurélie Lagoutte
(Python)



Pierre Lemaire
(R)



Bernard Penz
(RO)



Julie Peyre
(Java)



Anne-Laure Ladier
(RO)



Christophe Saint-Marcel
(Design Pattern)



Denis Bouhineau
(Algo/Prog)



Céline Fouard
(Langage pour le Web)



Florent Paccalet
(développeur)



Élise Arnaud
(Maths)



Florent Bouchez Tichadou
(Algo/Prog)



Astor Bizard
(Ingé. en développement)



Florence Thiard
(Ingénieure)



Yvan Maillot
(Java, design patterns,
plugin concepteur)

The teacher community of Caseine



- How to join
 - Create an account (your existing academic login might work)
 - Have a look to the discover course
 - Have a look at the open courses (e.g. OR course)
 - Express your will (send an email) for starting a course and have access to the shared space and the tutorials.
- Support and training for a start...



A training platform

- Help learning process
- Increase **engagement** and **autonomy** of students
- Better use of **teacher time**
- Improve the **quality** of the contents
- Improve **visibility** of the contents

support.caseine@grenoble-inp.f





A 3-minute tour

- <https://caseine.org/mod/page/view.php?id=19571>

