

Detecting Academic Misconduct in
Introductory
Computer Science
Courses

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Agenda

- Introduction
- Academic Misconduct in CS
- CS1 and CS2
- Proposal
- Results
- Conclusions and future work

Introduction

- Academic misconduct:
 - actions that may result in creating unfair academic advantage
 - cheating, plagiarism, ...
- Honour Code
- A serious problem

Computer Science I

1-3	Variables, pseudocode, control structures
4	Classes and objects
5-8	Association, Inheritance
9-11	Aggregation, Collections
12	Sorting and Searching
13-15	Advanced use of Collections

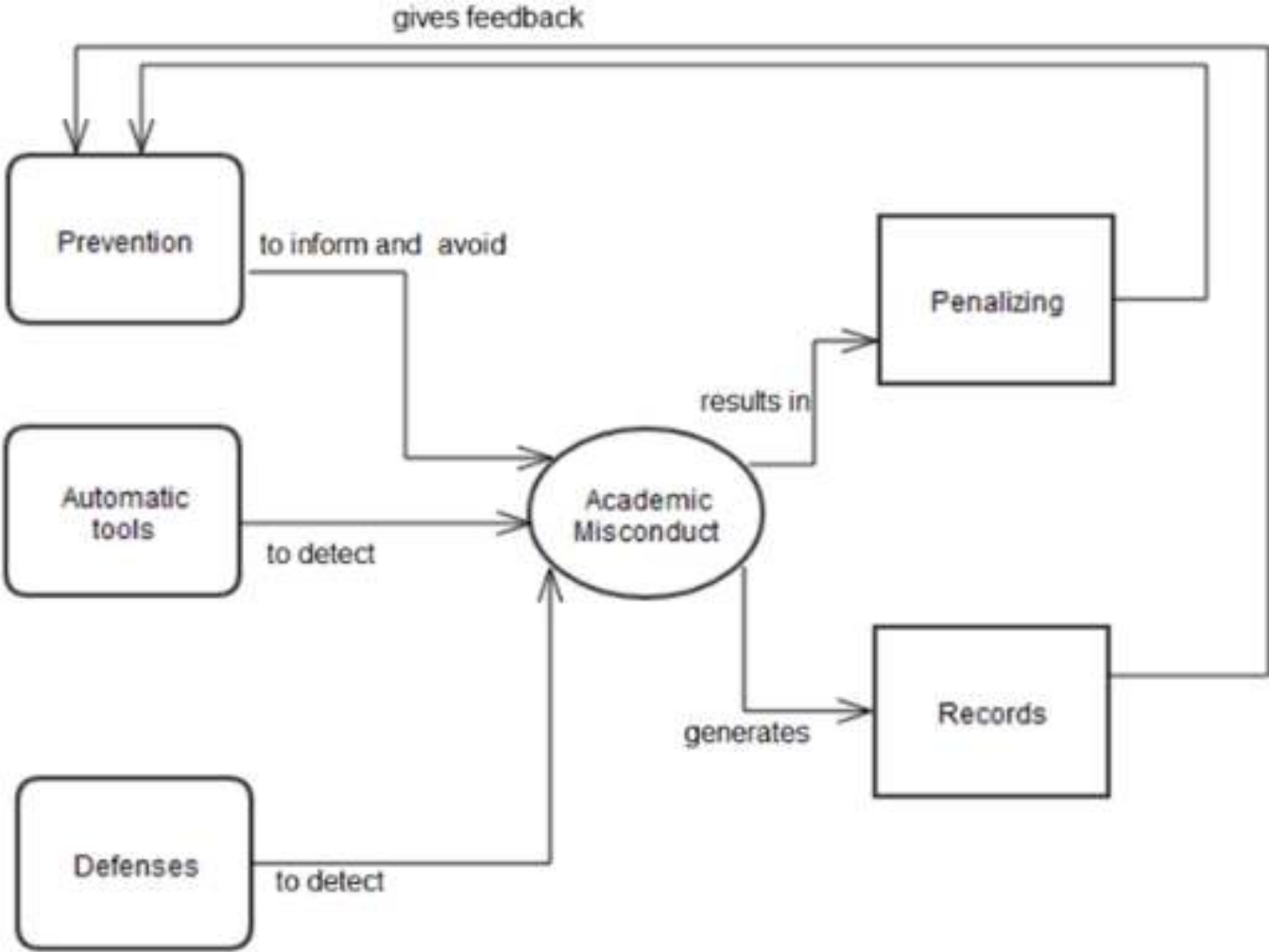
Computer Science II

1-3	Arrays, maps. Algorithm design
4	Parameters. Aliases and references
5	Modelling systems
6-8	User interface. MVC
9	Pattern Observer
10-12	Streams, Persistence
13	Recursion
14-15	Exceptions

CSI & CS2

- 15 weeks: 4 hs lecture + 2 labs
- Evaluation
 - 2 large programming assignments, teams
 - Written evaluation
 - Class participation

Proposal



Prevention

Decalogue of good practices

Presentation: MOSS

University policies + Honour Code

Different tasks each semester

Forums: removed

Early engagement with the course

Automatic Tools



MOSS



JPlag



Java program to upload
code

Defense



Individual



Personalized

DEFENSA PROGRAMACION

Estudiante:

- La resolución debe ser realizada **exclusivamente** por el propio estudiante en el tiempo previsto, **SIN AYUDA** de ningún tipo.
- La resolución exitosa del cambio pedido dentro del tiempo establecido implicará que la defensa es correcta. Cualquier otra situación será analizada e implicará pérdida **total** o **parcial** de puntos del obligatorio.

Fecha

Hora de comienzo:

Hora de finalización:

(tiempo máximo: 1 hora)

Cantidad de pruebas erróneas: 0 - 1 - 2 - 3 - 4 - más

Cambio solicitado:

Resultado

Firmas

Docente

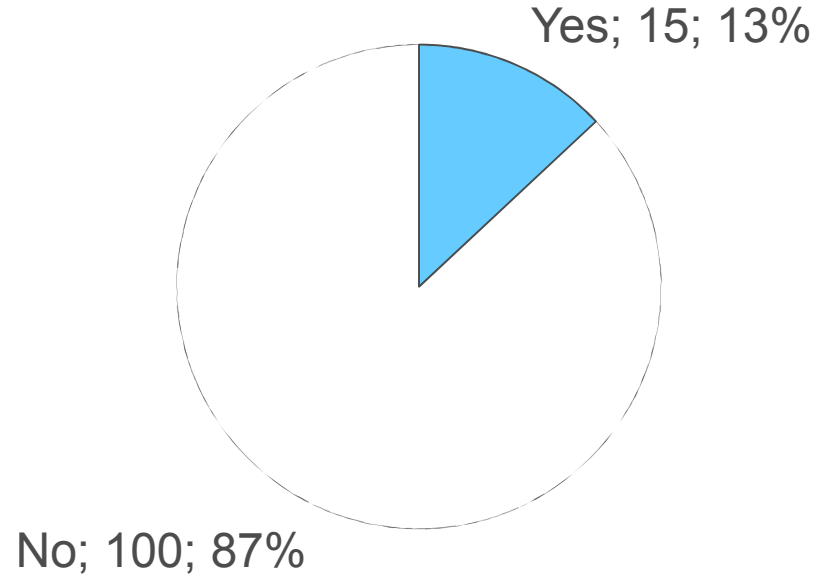
Alumno:

Penalizing

Records

Survey - results

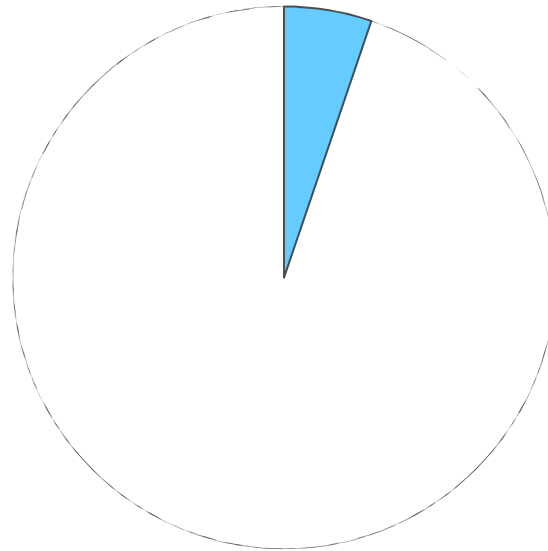
Do you know anybody who committed plagiarism?



Results

Did you commit plagiarism in CS1/CS2?

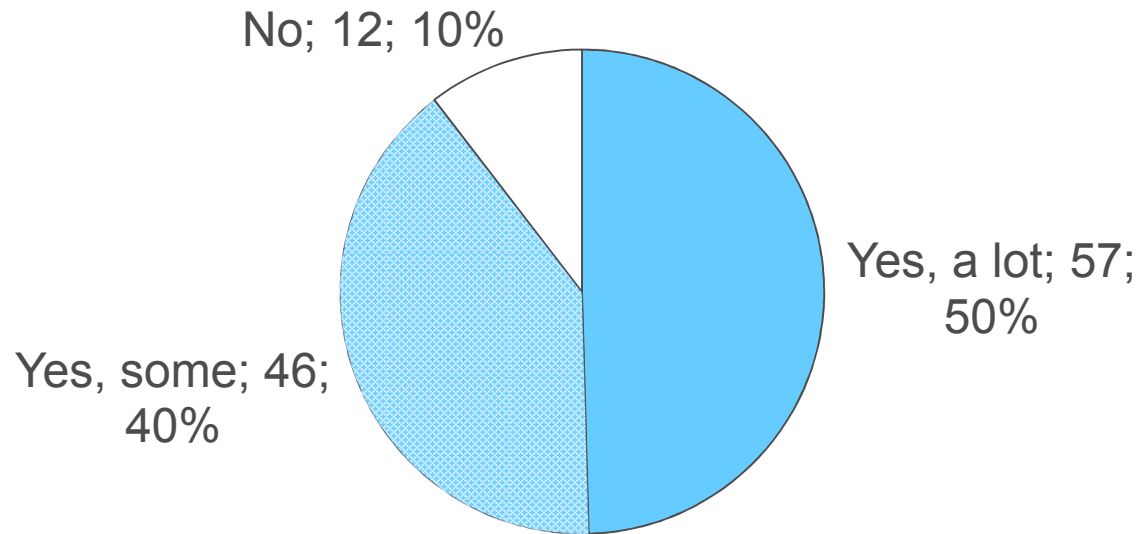
Yes; 6; 5%



No; 109; 95%

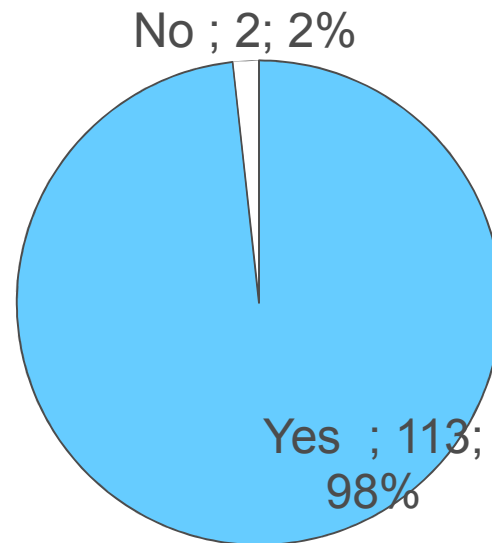
Results

Did your teacher emphasized against plagiarism and promoted good practices?



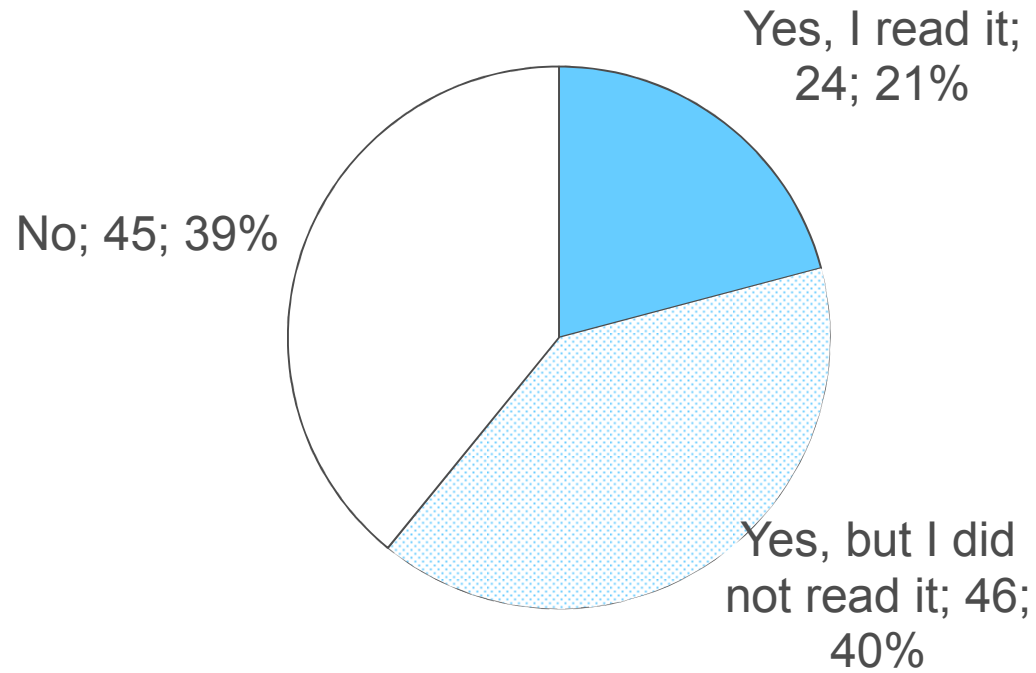
Results

Do you know about the use of antiplagiarism software in the course?



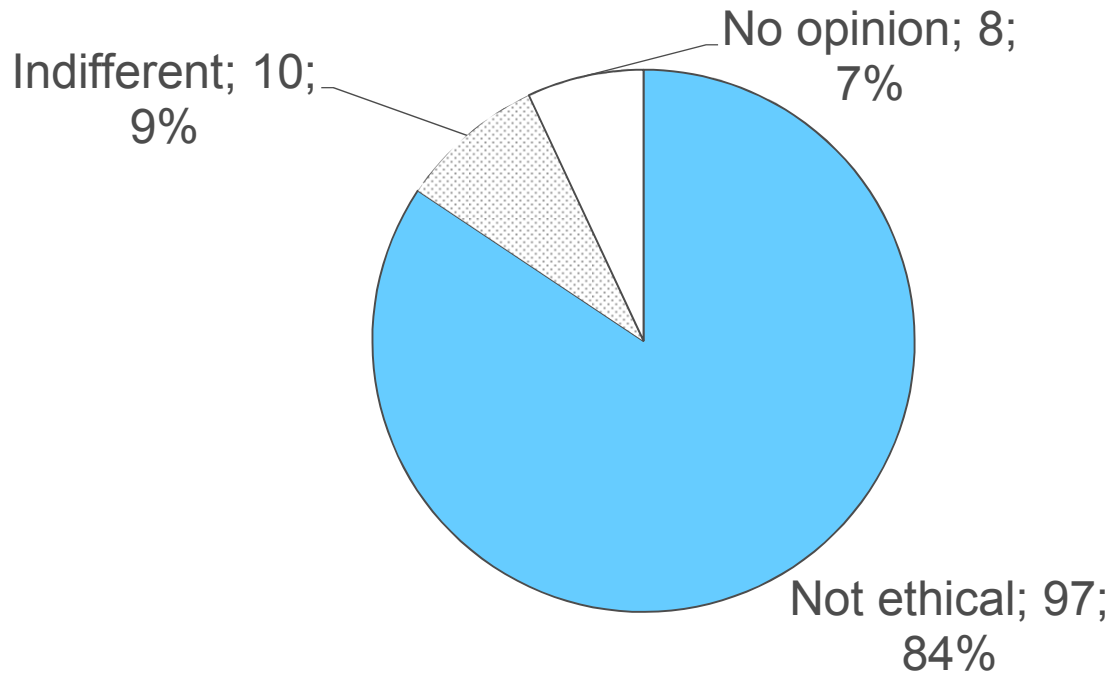
Results

Do you know the “Honour code”?



Results

In your opinion, committing plagiarism is...



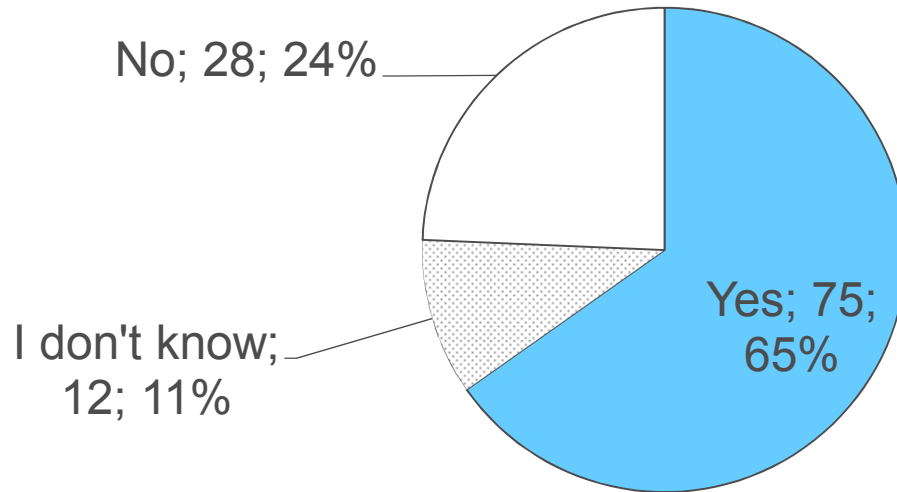
Reasons

In your opinion, main reasons to commit plagiarism are:

- Time problems (67)
- Task difficulty (64)
- Task overloading (58)
- Missing motivation (51)
- Team problems (16)

Results

“The “defense” is useful to validate authorship of the tasks”. Your opinion is:



Conclusions and future work

- Integral proposal against academic misconduct in CS1 and CS2
- Includes: prevention, automatic tools, defenses, penalization and records
- Future:
 - why some students expressed “not useful”/“do not know” ?
 - More activities

Questions?

Thanks!

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