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

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<td>Classes and objects</td>
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<td>5-8</td>
<td>Association, Inheritance</td>
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<td>Aggregation, Collections</td>
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<td>Advanced use of Collections</td>
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<td>Arrays, maps. Algorithm design</td>
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<td>Parameters. Aliases and references</td>
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<td>Modelling systems</td>
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<td>User interface. MVC</td>
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CSI & CS2

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

- Prevention
  - to inform and avoid
- Automatic tools
  - to detect
- Academic Misconduct
  - results in
  - generates
- Penalizing
- Records

Flow: gives feedback
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 PROGRAMACIÓN

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?

- Yes: 15 (13%)
- No: 100 (87%)
Did you commit plagiarism in CS1/CS2?

Yes; 6; 5%

No; 109; 95%
Results

Did your teacher emphasized against plagiarism and promoted good practices?

- Yes, a lot: 57; 50%
- Yes, some: 46; 40%
- No: 12; 10%
Do you know about the use of antiplagiarism software in the course?

- Yes: 113; 98%
- No: 2; 2%
Do you know the “ Honour code”? 

Yes, I read it; 24; 21% 

No; 45; 39% 

Yes, but I did not read it; 46; 40%
Results

In your opinion, committing plagiarism is...

- Not ethical; 97; 84%
- Indifferent; 10; 9%
- No opinion; 8; 7%
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)
“The “defense” is useful to validate authorship of the tasks”. Your opinion is:

- Yes; 75; 65%
- No; 28; 24%
- I don't know; 12; 11%
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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