Simulación Computacional: Presentación del curso

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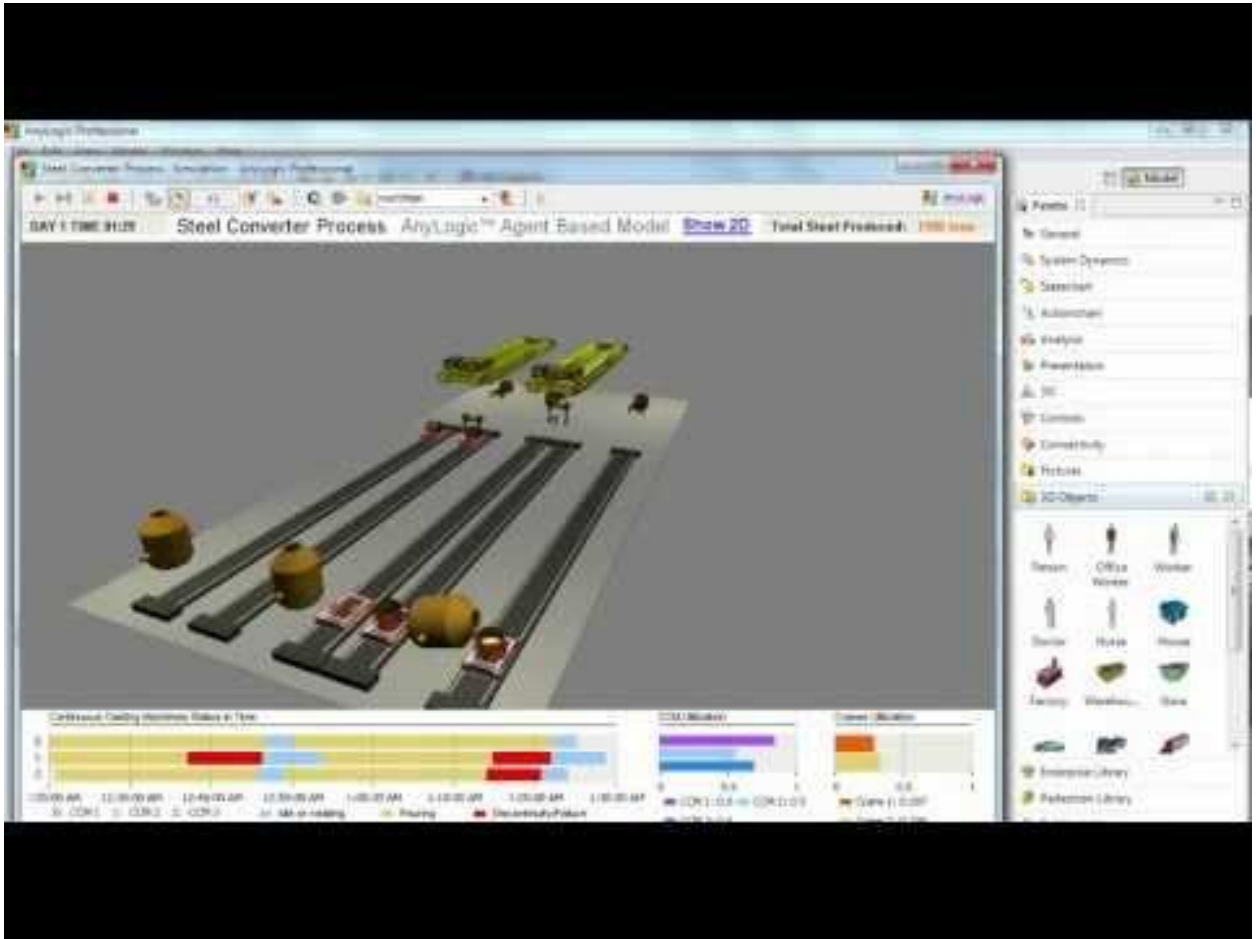
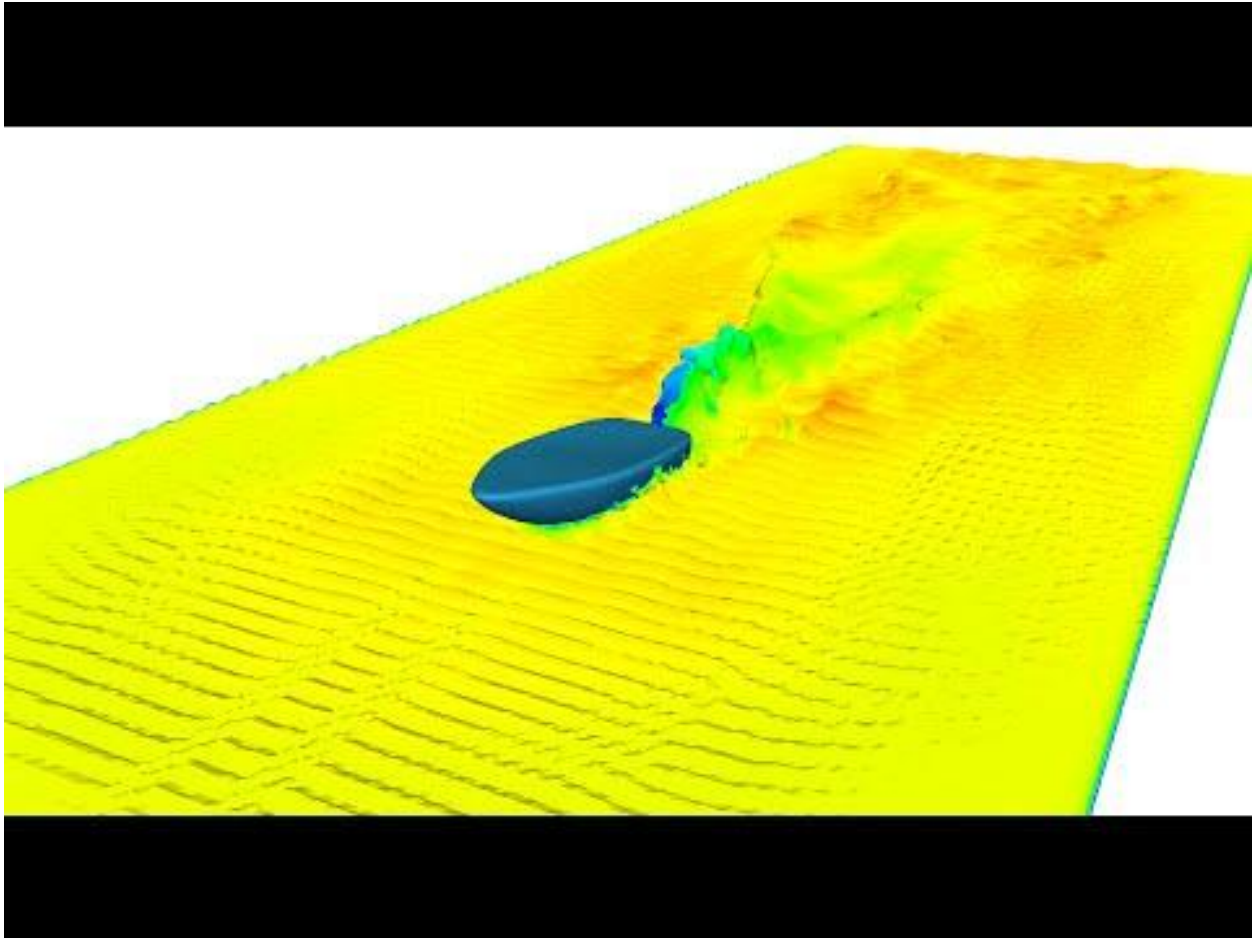
Pagina del curso:
https://sites.google.com/site/aacruzr/teaching/2016-ii/simulacion-computacional

Registro al curso:
https://goo.gl/forms/hj7WEn4eERSH3mPS2

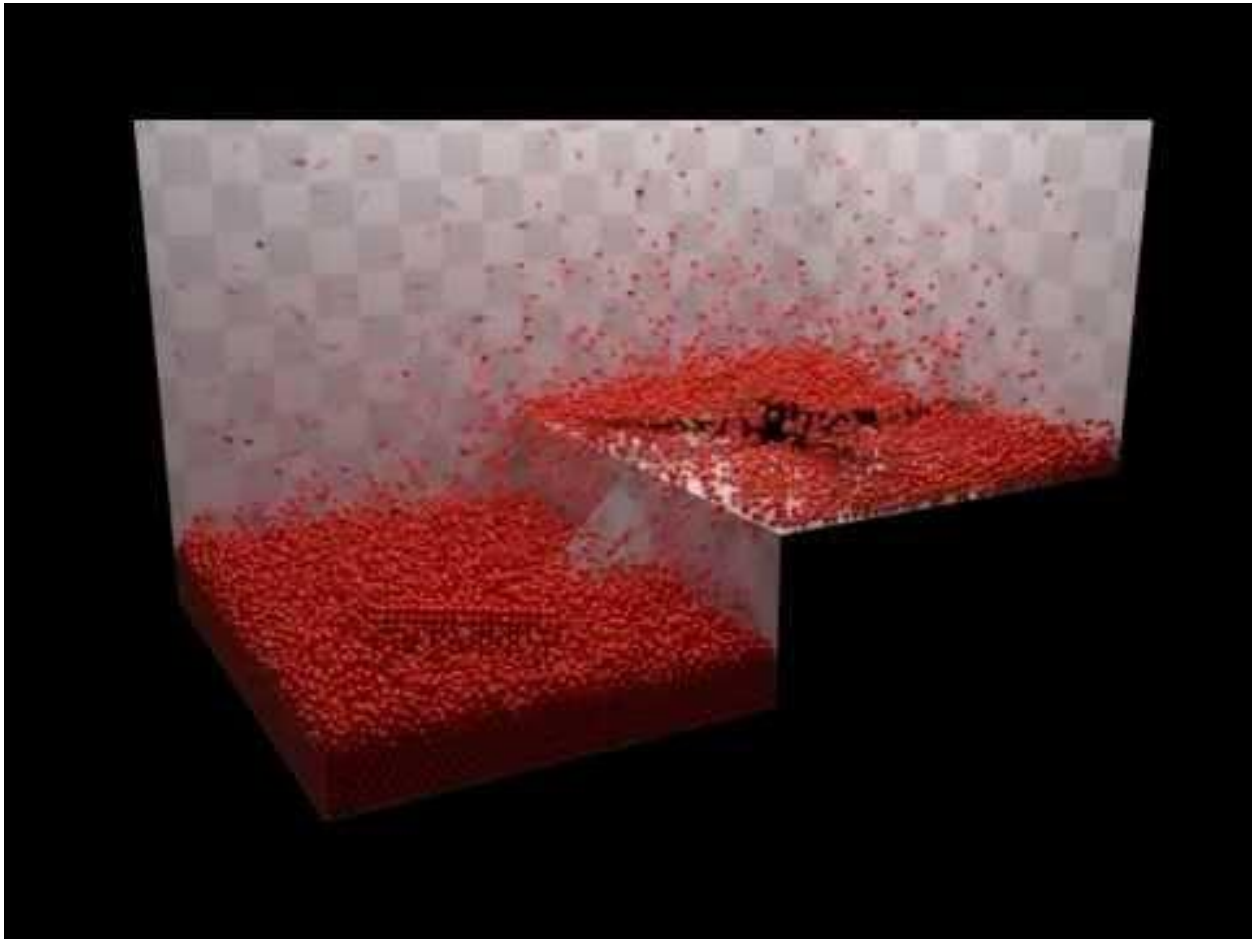
AnyLogic


Steel Converter Process
AnyLogic™ Agent Based Model
Show 2D

OpenFOAM



Blender & Softimage



HPC simulations for Science and Industry

Conocimientos previos

- Habilidades de programación (C/C++, Java, Python*)
- Modelamiento de sistemas
- Probabilidad y estadística
- Métodos numéricos
- Ecuaciones diferenciales
- Fisica
- Algebra lineal
- Cálculo diferencial e integral

Horario y lugar del curso

- Lunes (Sala E)
  - 8 am a 10 am
- Miercoles (Salón 314, por confirmar)
  - 8 am a 10 am

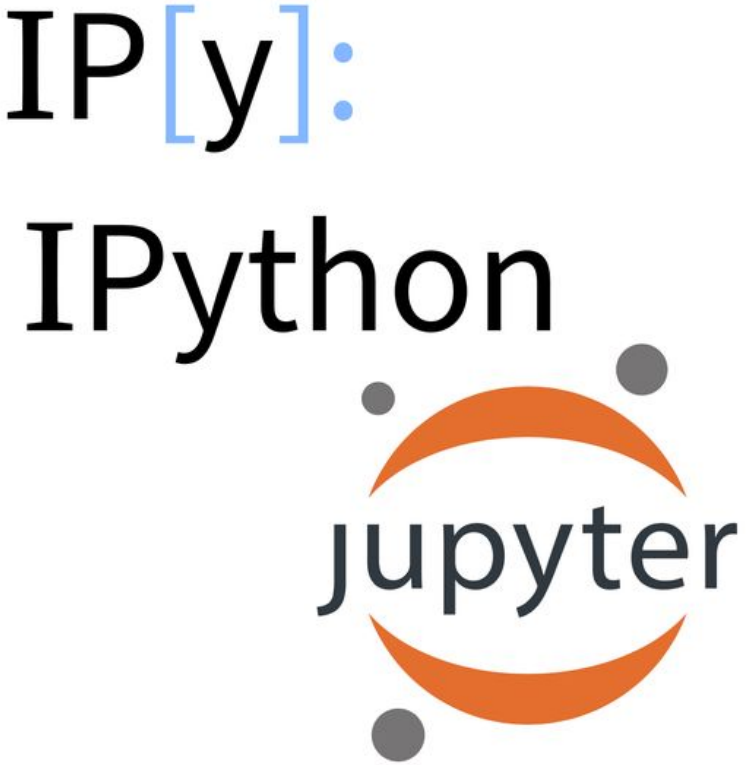
Tutorias o consultas

- Sala 1 de Profesores Edif. FCBI
- Laboratorio del Grupo de Investigación GITECX

Evaluación

- 1er corte 35%
  - Parcial 15%
  - Talleres 10%
  - Propuesta proyecto 5%
  - Quices 5% (Kahoot)
- 2do corte 35%
  - Parcial 15%
  - Talleres 10%
  - Exposición avance proyecto 5%
  - Quices 5% (Kahoot)
- 3er corte 30%
  - Examen final 10%
  - Proyecto 20% (2 personas)
    - Artículo y póster

Talleres



https://jupyter.org

Talleres

spectrogram - Iceweasel

localhost:8889/notebooks/spectrogram.ipynb

IP[y]: Notebook spectrogram Last Checkpoint: a few seconds ago (autosaved)

IPython (Python 3)

File Edit View Insert Cell Kernel Help

Code Cell Toolbar: None

Simple spectral analysis

An illustration of the Discrete Fourier Transform using windowing, to reveal the frequency content of a sound signal.

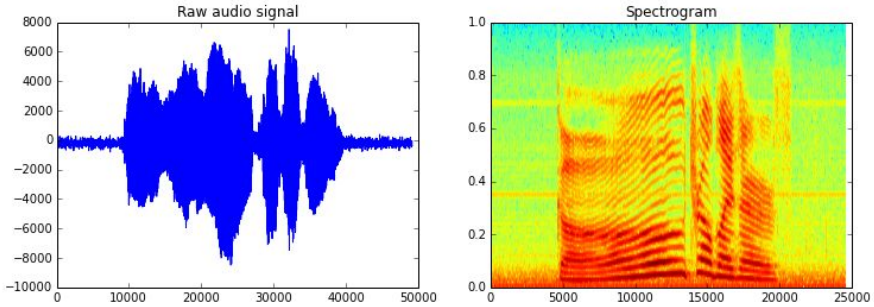
$$X_k = \sum_{n=0}^{N-1} x_n e^{-\frac{2\pi i}{N} kn} \qquad k = 0, \ldots, N-1$$

We begin by loading a datafile using SciPy's audio file support:

In [1]:
```
from scipy.io import wavfile
rate, x = wavfile.read('test_mono.wav')
```

And we can easily view its spectral structure using matplotlib's builtin `specgram` routine:

In [2]:
```
%matplotlib inline
from matplotlib import pyplot as plt
fig, (ax1, ax2) = plt.subplots(1, 2, figsize=(12, 4))
ax1.plot(x); ax1.set_title('Raw audio signal')
ax2.specgram(x); ax2.set_title('Spectrogram');
```



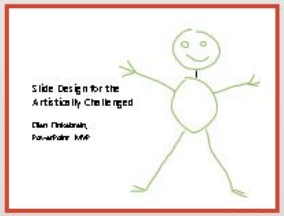
Talleres - Instalar

Anaconda

https://www.continuum.io/downloads

Exposiciones

- Pecha-Kucha (20x20) -> 6’40’’
    - La presentación debe constar de 20 diapositivas, y el ponente tiene que dedicar exactamente 20 segundos a cada una.
    - Total: 6 minutos y 40 segundos por presentación.



1 00:20

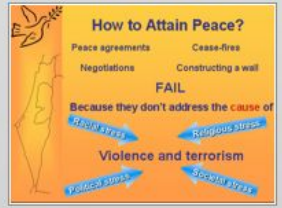
2 00:20

3 00:20

4 00:20

5 00:20

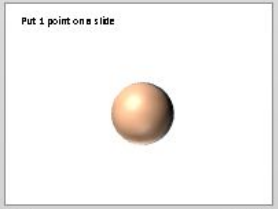
6 00:20



7 00:20

8 00:20

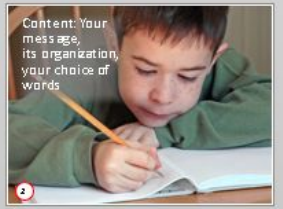
9 00:20



10 00:20

11 00:20

12 00:20

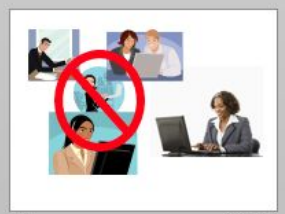


13 00:20

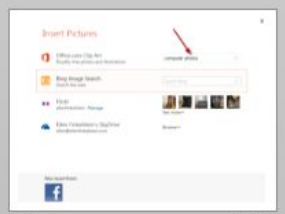
14 00:20

15 00:20

16 00:20



17 00:20



18 00:20

19 00:20

20 00:20

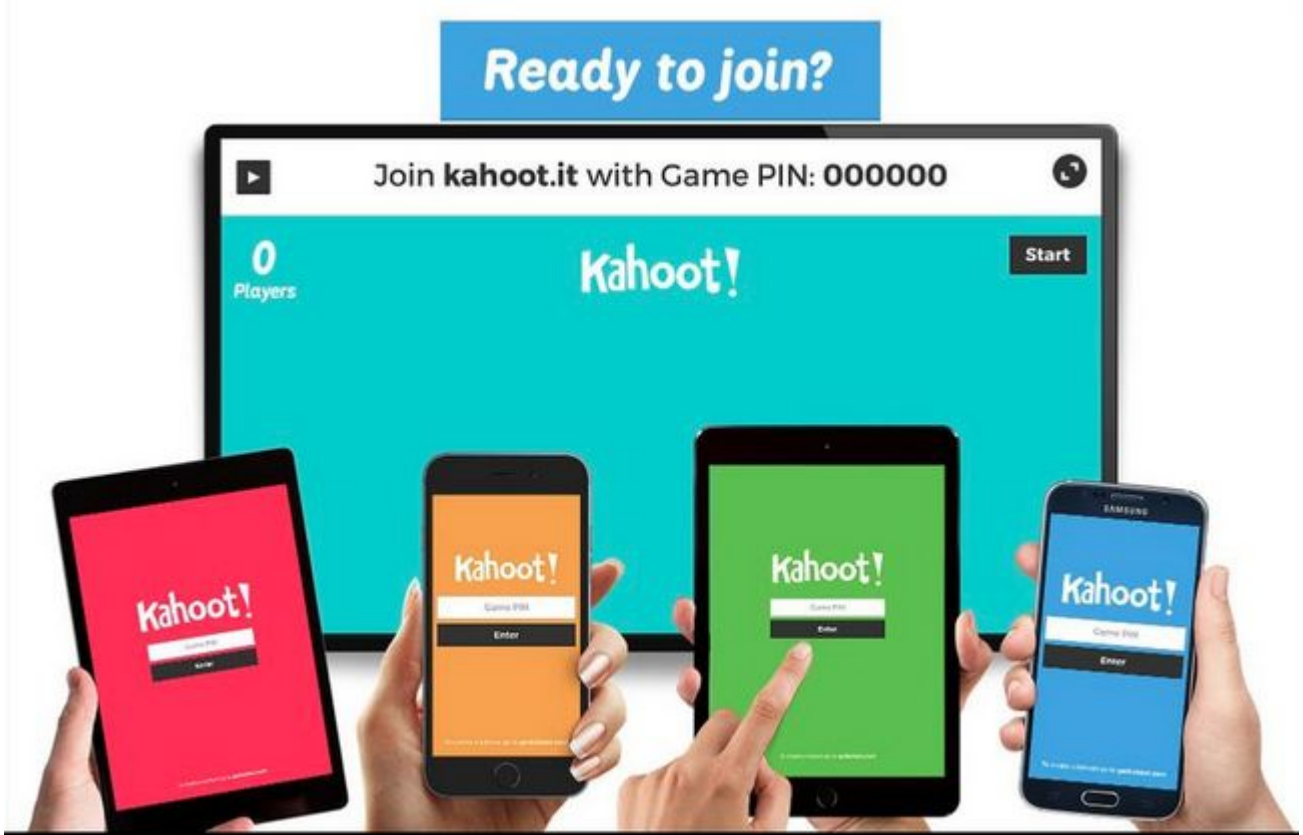
~~Quices~~ Juego

http://kahoot.it

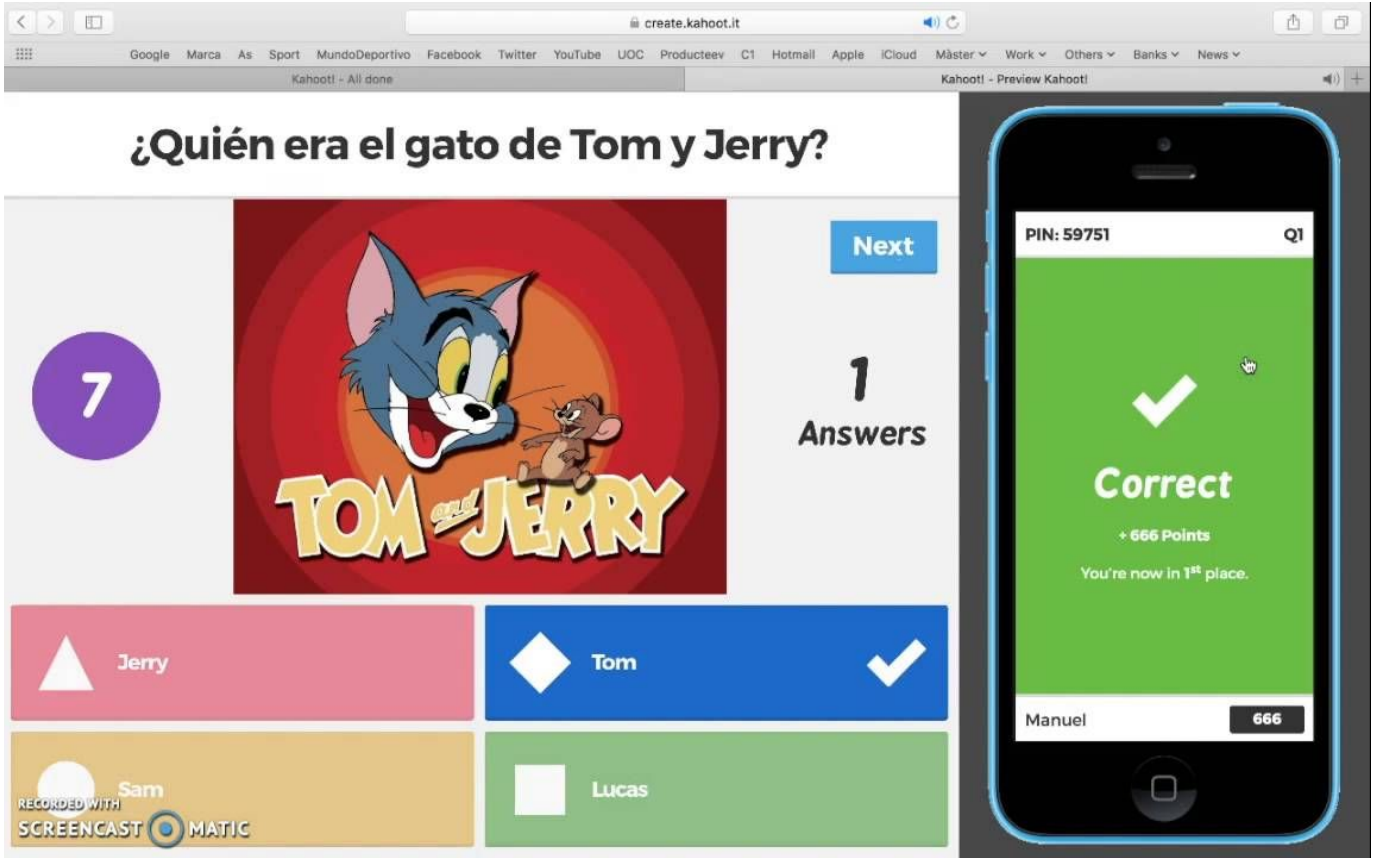
Quices


0
Players
Kahoot!
Play
1
On phone, tablet or laptop
2
kahoot.it
Visit kahoot.it
3
Enter
Enter game pin 573

Quices


Ready to join?
Join kahoot.it with Game PIN: 000000
0
Players
Kahoot!
Start
Kahoot!
Enter

Quices

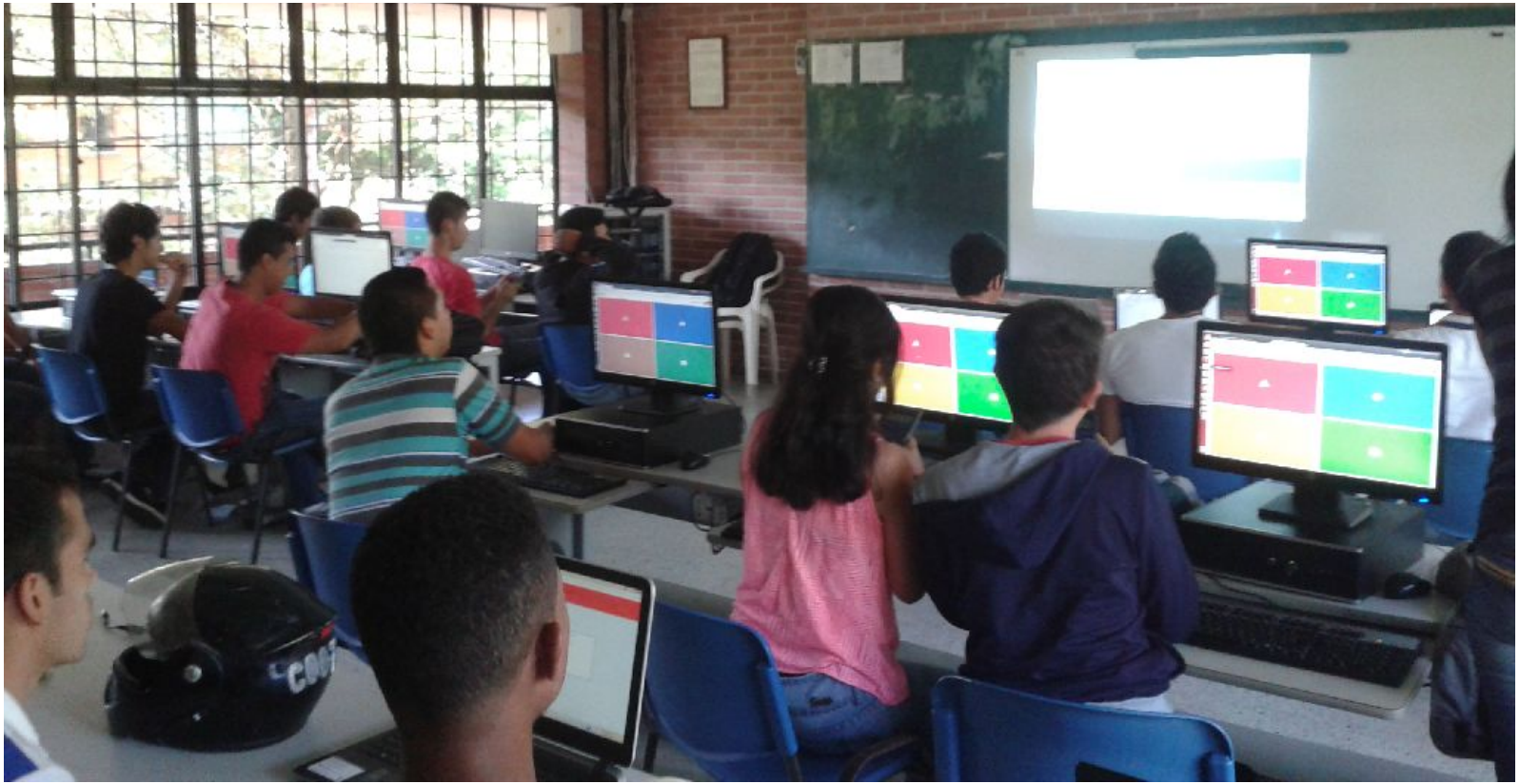

create.kahoot.it
Google Marca As Sport MundoDeportivo Facebook Twitter YouTube UOC Producteev C1 Hotmail Apple iCloud Màster Work Others Banks News
Kahoot! - All done
Kahoot! - Preview Kahoot!
¿Quién era el gato de Tom y Jerry?
Next
7
1
Answers
TOM AND JERRY
Jerry
Tom
Sam
Lucas
RECORDED WITH SCREENCAST MATIC
PIN: 59751
Q1
Correct
+ 666 Points
You're now in 1st place.
Manuel
666


Kahoot! - Created by me
Kahoot!
https://play.kahoot.it/#/question?quizId=d2fe3feb-9bc0-11e2-bafb-22000a203cd4
Q1 As of 2012, the top 3 largest urban areas in the world by population, are?
10
8
12
0
Re-show image
Tokyo, Jakarta, Seoul
Tokyo, São Paulo, Shanghai
Tokyo, Seoul, Jakarta
Tokyo, Shanghai, São Paulo
Urban environments
Q1
Wrong!
Tokyo, Jakarta, Seoul was correct.
You're now in 1st position.
Jamie
MacBook Pro

Quices


Scoreboard
Next
Nathan 28,008
Susan 15,225
Marcus 12,100
James 9,001
Hayley 7,658
End quiz
Up 10 places - Michelle is the highest climber!

Quices



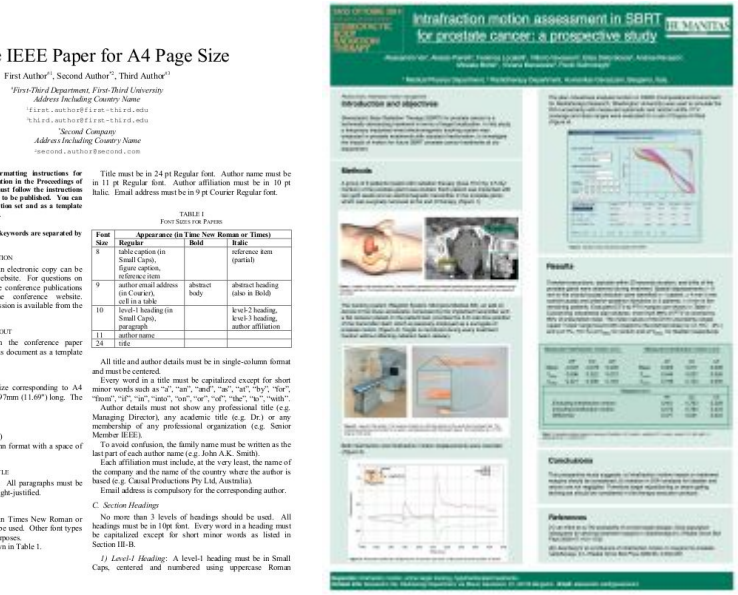
Exámenes

http://virtual2.unillanos.edu.co

Exámenes

Proyecto

- Propuesta proyecto 1er corte
  - LaTeX Formato IEEE o LNCS
  - Editores: Overleaf (en línea, https://www.overleaf.com/), LyX (https://www.lyx.org/)
- Exposición avance proyecto 2do corte
  - PechaKucha 20x20
- Artículo científico 3er corte
  - LaTeX Formato IEEE o LNCS, evaluación profesor del curso
- Socialización 3er corte
  - Modalidad Póster, evaluación por compañeros y profesores jurados
  - Premiación al mejor proyecto



Sample IEEE Paper for A4 Page Size

First Author[#1], Second Author[*2], Third Author[#3]

[#]First-Third Department, First-Third University
Address Including Country Name
[1]first.author@first-third.edu
[3]third.author@first-third.edu

[*]Second Company
Address Including Country Name
[*2]second.author@second.com

***Abstract*— This document gives formatting instructions for authors preparing papers for publication in the Proceedings of an IEEE conference. The authors must follow the instructions given in the document for the papers to be published. You can use this document as both an instruction set and as a template into which you can type your own text.**

***Keywords*— Put your keywords here, keywords are separated by comma.**

I. Introduction

This document is a template. An electronic copy can be downloaded from the conference website. For questions on paper guidelines, please contact the conference publications committee as indicated on the conference website. Information about final paper submission is available from the conference website.

II. Page Layout

An easy way to comply with the conference paper formatting requirements is to use this document as a template and simply type your text into it.

A. Page Layout

Your paper must use a page size corresponding to A4 which is 210mm (8.27") wide and 297mm (11.69") long. The margins must be set as follows:

- Top = 19mm (0.75")
- Bottom = 43mm (1.69")
- Left = Right = 14.32mm (0.56")

Your paper must be in two column format with a space of 4.22mm (0.17") between columns.

III. Page Style

All paragraphs must be indented. All paragraphs must be justified, i.e. both left-justified and right-justified.

A. Text Font of Entire Document

The entire document should be in Times New Roman or Times font. Type 3 fonts must not be used. Other font types may be used if needed for special purposes.
Recommended font sizes are shown in Table 1.

B. Title and Author Details

Title must be in 24 pt Regular font. Author name must be in 11 pt Regular font. Author affiliation must be in 10 pt Italic. Email address must be in 9 pt Courier Regular font.

TABLE I
Font Sizes for Papers

Font Size	Appearance (in Time New Roman or Times)		
	Regular	Bold	Italic
8	table caption (in Small Caps), figure caption, reference item		reference item (partial)
9	author email address (in Courier), cell in a table	abstract body	abstract heading (also in Bold)
10	level-1 heading (in Small Caps), paragraph		level-2 heading, level-3 heading, author affiliation
11	author name		
24	title		

All title and author details must be in single-column format and must be centered.

Every word in a title must be capitalized except for short minor words such as "a", "an", "and", "as", "at", "by", "for", "from", "if", "in", "into", "or", "of", "on", "the", "to", "with".

Author details must not show any professional title (e.g. Managing Director), any academic title (e.g. Dr.) or any membership of any professional organization (e.g. Senior Member IEEE).

To avoid confusion, the family name must be written as the last part of each author name (e.g. John A.K. Smith).

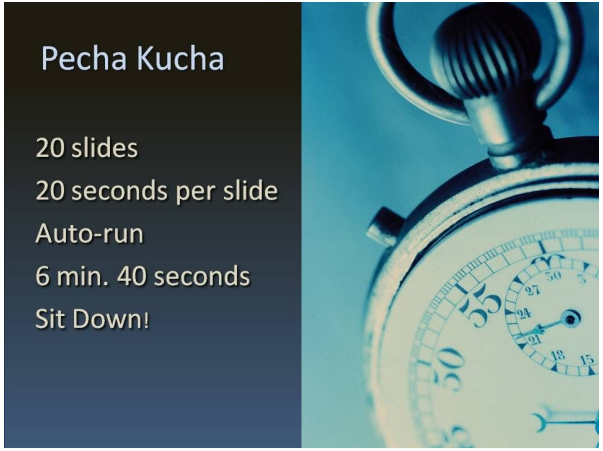
Each affiliation must include, at the very least, the name of the company and the name of the country where the author is based (e.g. Causal Productions Pty Ltd, Australia).

Email address is compulsory for the corresponding author.

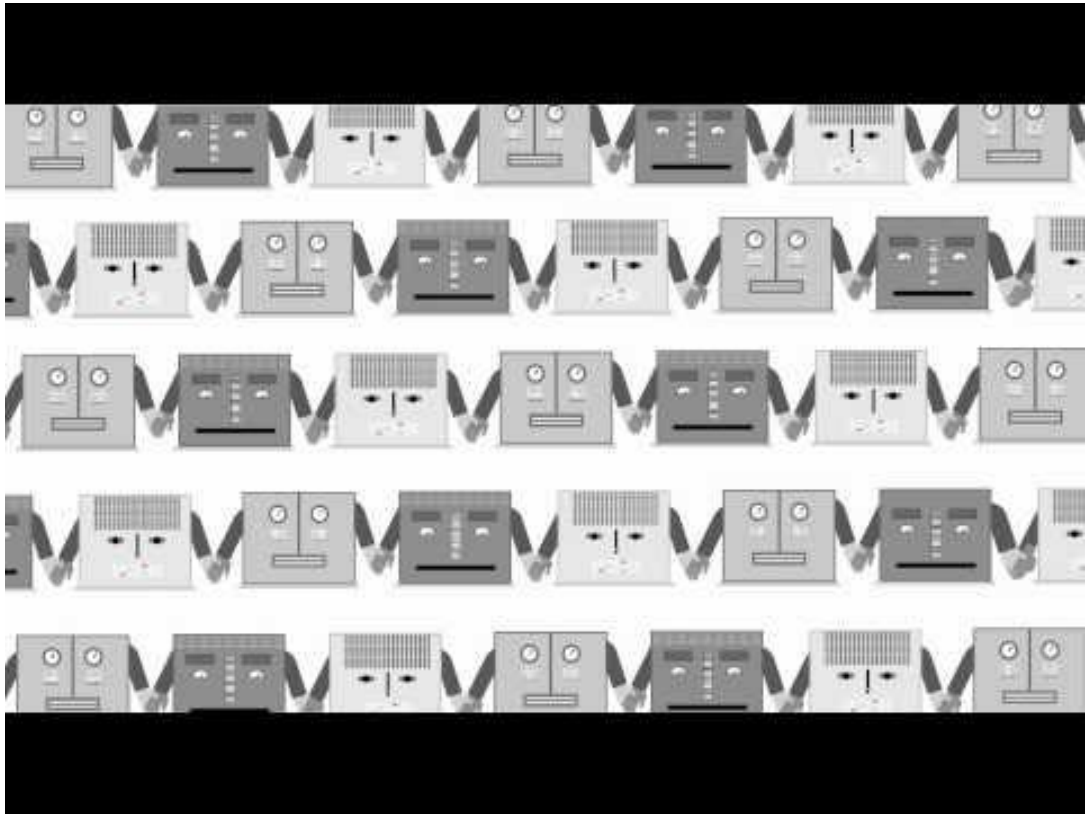
C. Section Headings

No more than 3 levels of headings should be used. All headings must be in 10pt font. Every word in a heading must be capitalized except for short minor words as listed in Section III-B.

1) Level-1 Heading: A level-1 heading must be in Small Caps, centered and numbered using uppercase Roman



Lectura complementaria



Bibliografía

- RIOS, David, RIOS, Sixto, MARTÍN, Jacinto. Simulación, Métodos y aplicaciones. Editorial Alfaomega, 2000
- BANKS, Jerry, CARSON III, John S, NELSON, Barry. Discrete-Event System Simulation. 2da ed. Prentice-Hall, 1996.
- AVERILL M, Law, KELTON, W. David. Simulation Modeling and Analysis. 3ra ed. Editorial Mc. Graw-Hill; 2000.
- COSS, Raul. Simulación: un enfoque práctico. Editorial Limusa, 1993.
- KELTON David, SADOWSKI Randall, STURROCK David . Simulation with Arena. McGraw-Hill Higher Education, 2003.

Registro al curso

https://goo.gl/forms/hj7WEn4eERSH3mPS2