Running SWHAP: the CMM and TAUM us case studies

• Developed in Pisa: fits well the SWHAP@Pisa project

- Developed in Pisa: fits well the SWHAP@Pisa project
- Dedicated (and still existing) hardware

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- A pioneeristic work

- Developed in Pisa: fits well the SWHAP@Pisa project
- Dedicated (and still existing) hardware
- A pioneeristic work
- Tons of related material (thanks to Leonello Tarabella)





Home art nowadays



An overview of Grossi's work

- Born in 1917 in Venice
- 1965: professor for the first electronic music course in Italy
- 1967: starts exploring computer music (first Olivetti, then CNUCE)
- 1970: first experiment on musical telematics
- 1975: deployment of TAU2/TAUmus system
- 1985: introduces the concept of Home Art

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- 1970: first experiment on musical telematics
- 1975: deployment of TAU2/TAUmus system
- 1985: introduces the concept of Home Art
- More info: <u>https://www.pietrogrossi.org</u>

• CMM: Customisable Memory Manager, what for?

- CMM: Customisable Memory Manager, what for?
- Managing memory: a hard task for a programmer!

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- CMM automatise the process of managing memory
- Inspired the Java garbage <u>collector</u>
- Developed at the University of Pisa by Prof. Giuseppe Attardi





• Three main categories:

Three main categories: Papers and sketches

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- Three main categories:
 - Papers and sketches
 - Source code

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- Three main categories:
 - Papers and sketches
 - Source code
 - Project specifications



Different kinds of Source Code Different kinds of Source Code • FORTRAN listings:

- TAU₂ was just an audio terminal: it didn't run code
- Code ran on the CNUCE's IBM 370
- These are (part of) the code of the TAUmus interpreter

Different kinds of Source Code • FORTRAN listings:

- TAU2 was just an audio terminal: it didn't run code
- Code ran on the CNUCE's IBM 370
- These are (part of) the code of the TAUmus interpreter
- TAUmus listings:
 - Hand-written, the actual code of music sessions
 - The interpreter was basically a terminal
 - The user could play music using the TAUmus commands

• Whole source code available

- Whole source code available
 - 8 versions
 - A compressed archive

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 - 8 versions
 - A compressed archive
- Scarce raw material

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 - The original archive
 - The accompagning email

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- Scarce raw material
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Le sam. 2 mars 2019 à 12:11, Giuseppe Attardi <attardi@di.unipi.it> a écrit :

CMM (Customizable Memory Management) è il conservative garbage collector per C++ che sviluppai per il progetto PoSSo (Polynomial System Solver).

Il solver aveva delle fasi in cui venivano creati tantissimi oggetti temporanei, che potevano essere cancellati in un botto solo alla fine della fase.

Segnalai CMM a Bill Joy nel 1994, quando mi disse che stava cercando un GC per un nuovo linguaggio che stavano sviluppando alla Sun Microsystems.

Gli consegnai una copia dell'articolo presentato a USENIX C++ 1994, che riportava un link ftp da cui scaricare il codice:

http://usenix.org/publications/library/proceedings/c++94/full_papers/attardi.ps

BTW, alla conferenza Bjarne Stroustrup fu colpito dal lavoro e mi disse che con il miglioramento delle tecniche di GC, stava ricredendosi sulla possibilità di introdurle nel C++.

Qualche tempo dopo incontrai Ted Goldstein, del dipartimento Sun Engineering, che mi ringraziò, dicendo che avevano utilizzato il codice nella loro implementazione del linguaggio Oak, il nome che gli aveva dato James Gosling, guardando fuori dalla finestra del suo studio. Poi dovettero rinominarlo Java, per questioni di copyright.

A quel tempo non usavamo sistemi di versionamento, ma ci eravamo fatti uno script noi per fare versioni.

Eccoti un link a un tar che contiene diverse versioni:

http://medialab.di.unipi.it/ftp/cmm.tgz

Enjoy

- Beppe

• TAUmus Workbench is the (virtual) place where the work actually started

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TAUmus Workbench

Any SWHAPPE workbench comes with a few predefined folders, to support the users in the process.

Folder raw makerials is for the original materials, as they have been found or submitted.

Folder browsable source is for a browsable version of the source code. Source files, with the right extension, have to be accessible through the Gibliub web interface, e.g., anthives should be decompressed, code should be transcribed if provided by images, etc.

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- TAUmus Workbench is the (virtual) place where the work actually started
- The directory structure is inherited from the SWHAP template

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- TAUmus Workbench is the (virtual) place where the work actually started
- The directory structure is inherited from the SWHAP template
- From here, we performed the process's steps

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TAUmus Depository

This is the depository for the acquisition of TAUmus, a software controlling TAU2, a music synthesizer of the '70s.

This repository contains the row materials and the browsable source of TAUmus.

Information on the acquitation process can be found in the Workbench.

The resulting development history can be found in the TAUrius repository

• First we created the Depository

• Here we have raw-material...

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- First we created the Depository
 - Here we have raw-material...
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- Then we (re)created the development history

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TAUmus

Code controlling TAU2, a music synthetizer of the 70's.

This repository contains a small excerpt of the TAUmus Development History.

The original finds are stored in the Depository containing the rew materials and the browsable source.

Information on the acquisition of this code can be found in the TAUmus-Workbench repository.

This repository was created with the support of the Software Heritage Acquisition Process Pisa Eractor.

- First we created the Depository
 - Here we have raw-material...
 - ...and browsable-source
- Then we (re)created the development history
 - The SourceCode branch contains the versioned code

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- First we created the Depository
 - Here we have raw-material...
 - ...and browsable-source
- Then we (re)created the development history
 - The SourceCode branch contains the versioned code
 - The development history can be seen by checking for releases

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- TAUMus: few code (FORTRAN listings and TAUMus scripts)
 - Both on paper!
 - Some extra work needed in order to digitally archive it
- CMM: the complete source code of the memory manager, archived by the creator and well versioned
 - The software is a complete and potentially running C++ program

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۵	Articolo_lab_tonologia.pdf	crop and rotate	
D	Bertini_Chimenti_Denoth.pdf	Added raw material from master branch	
D	Biografia_Grossi.pdf	Added raw material from master branch	
D	DCMP-manual.pdf	Added raw material from master branch	
D	DCMP_360-67.pdf	Added raw material from master branch	
D	Elenco_brani.pdf	Added raw material from master branch	
٥	Foto_Grossi_Tarabella.jpg	Added raw material from master branch	
D	Generazione_disposizioni.pdf	Added raw material from master branch	
Ľ	Home_art_Grossi.pdf	Added raw material from master branch	
C	Lucid_Taumus.pdf	Added raw material from master branch	
Ľ	Maggio_musicale.pdf	crop and rotate	
۵	Modalità_operative_taumus.pdf	crop and rotate	

- TAUMus: a huge amount of rawmaterial
 - Photo, sketches...
 - All of it tells the story of the software
- CMM: few rawmaterial
 - The story of the software is narrated by the software itself

TAUmus lives back!



Thanks to Massimo Magrini, Signal and Image Laboratory, CNR

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