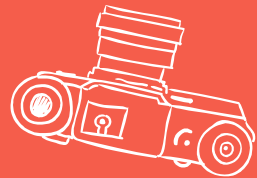


ENMA CORE



EVENTO SIMULADO

- ✖ Esse exemplo simula um sistema EDF com 3 Tasks. O sistema pertence a um supercomputador conhecido como Enma Core.
- ✖ As Tasks foram criadas para processar os dados de um novo hardware adicionado à sua estrutura.

| | Task 1 | Task 2 | Task 3 |
|-------|--------|--------|--------|
| a_i | 0 | 0 | 200 |
| c_i | 100 | 200 | 200 |
| d_i | 200 | 500 | 400 |

- ✖ Task 1 < Task 2 < Task 3



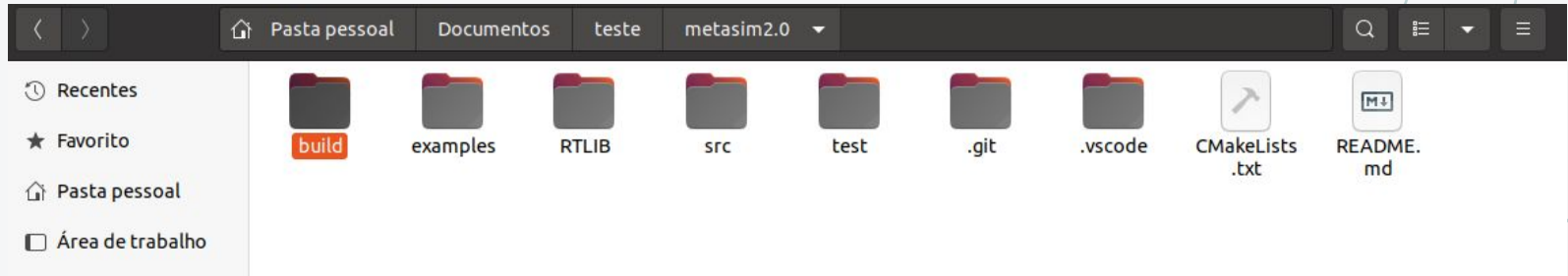
1.

INSTALAÇÃO

Instalação das bibliotecas Metasim e RTlib

METASIM

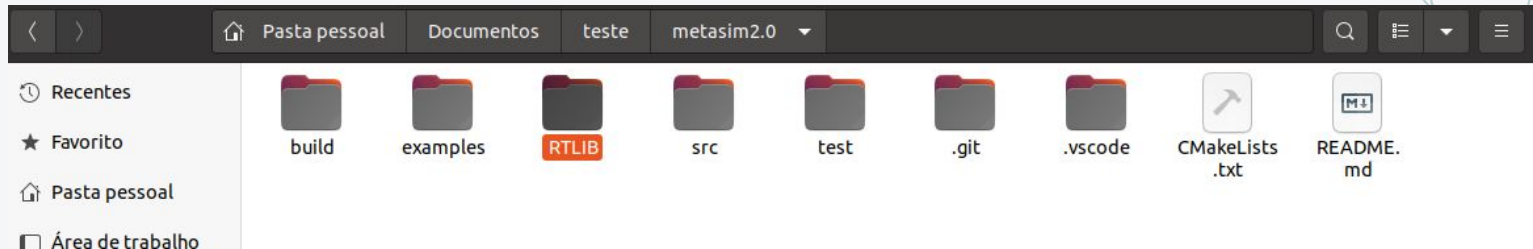
- ❌ `Git clone https://github.com/glipari/metasim2.0.git`
- ❌ `cd metasim2.0`
- ❌ `mkdir build`
- ❌ `cd build`
- ❌ `cmake ..`



RTLIB

- ❌ `Git clone https://github.com/ReTiS-Lab/RTLIB.git`
- ❌ `cd RTLIB`
- ❌ `mkdir build`
- ❌ `cd build`
- ❌ `cmake ..`

A pasta RTLIB deve está dentro de metasim2.0.





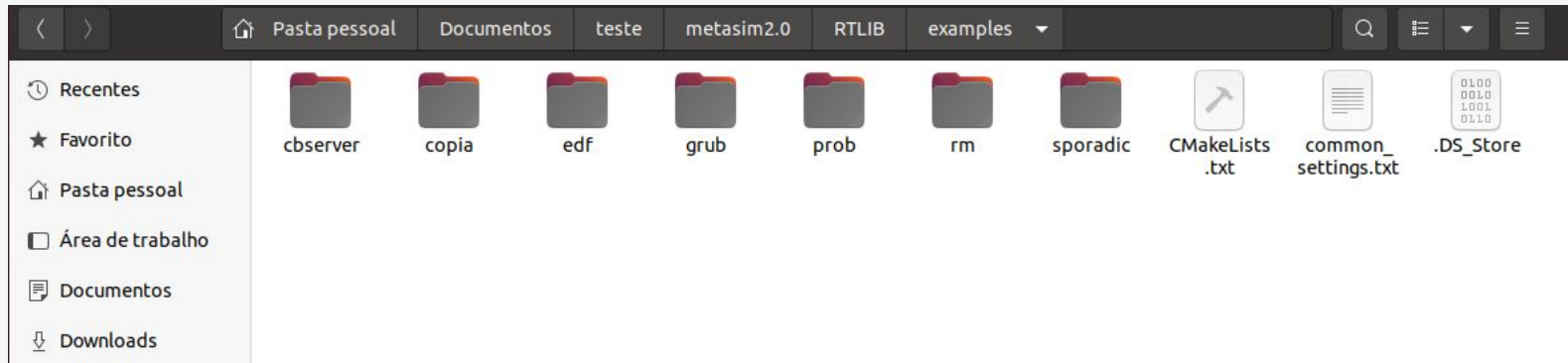
2.

CÓPIA DA PASTA

Criação de um novo exemplo

criação da pasta "COPIA"

- ✖ Na pasta "examples" em RTlib existem vários exemplos que podem ser reaproveitados para a criação de um novo projeto específico.

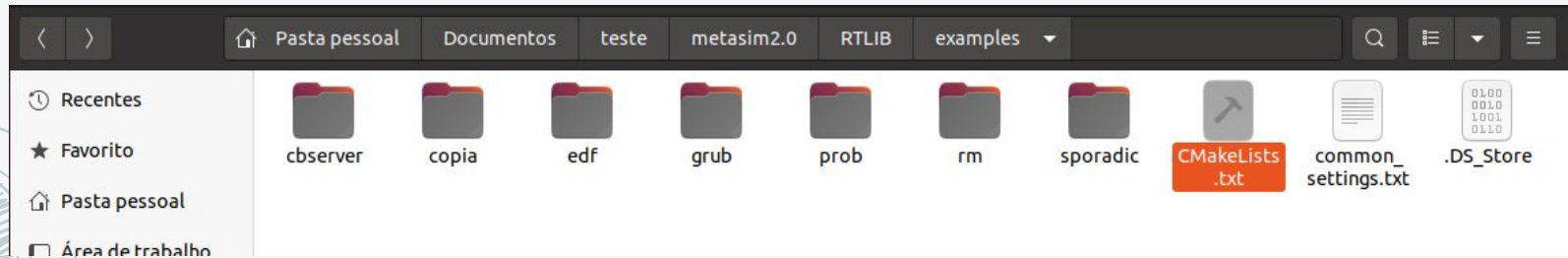


RECONHECIMENTO da pasta copia



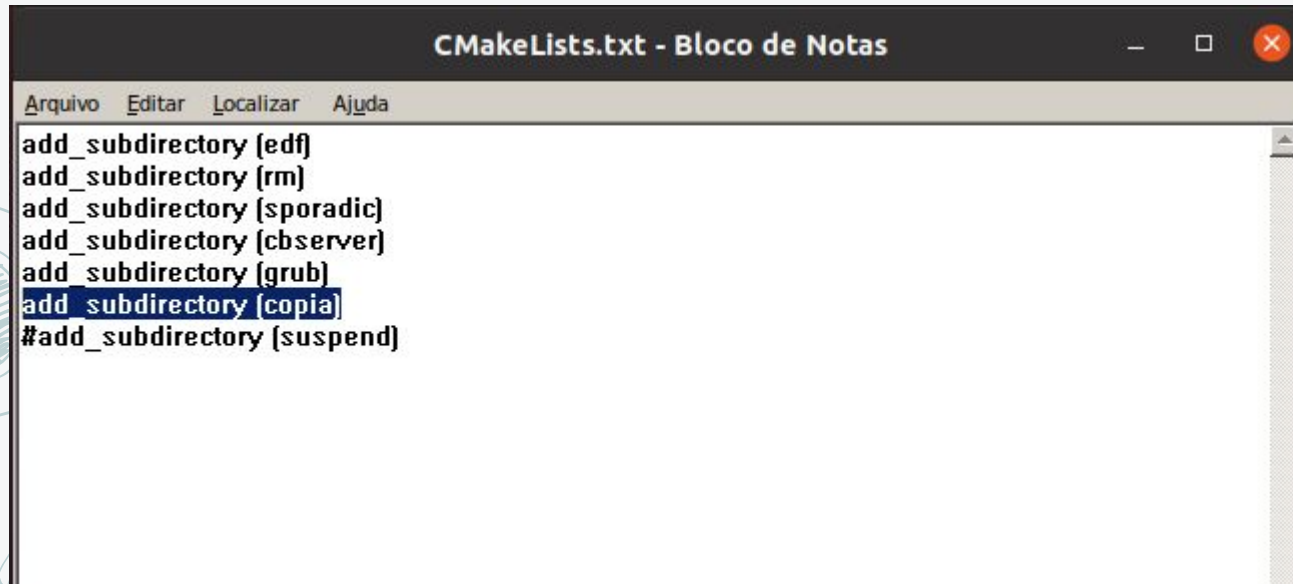
PROCEDIMENTOS

- ✖ Abra o arquivo “CMakeLists.txt” do “examples” de RTLIB.



PROCEDIMENTOS

- ✖ Dentro de “CMakeLists.txt” adicione o subdiretório “copia” para que ele possa ser compilado.



```
CMakeLists.txt - Bloco de Notas
Arquivo  Editar  Localizar  Ajuda
add_subdirectory(edf)
add_subdirectory(rm)
add_subdirectory(sporadic)
add_subdirectory(cbserver)
add_subdirectory(grub)
add_subdirectory(copia)
#add_subdirectory(suspend)
```

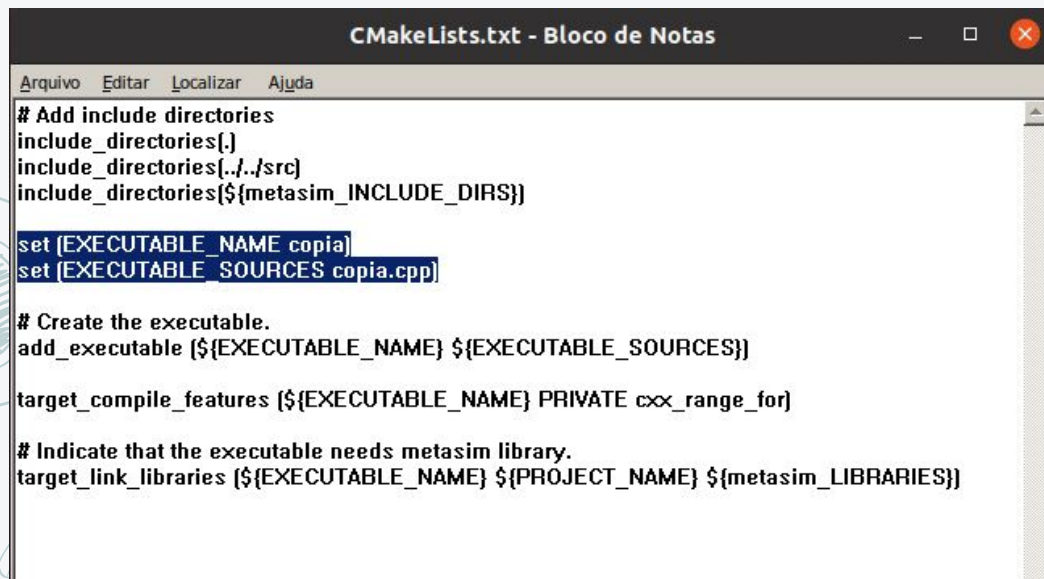
PROCEDIMENTOS

- ✖ Entre na pasta “examples” e vá na pasta “copia”. Em seguida, abra o “CMakeLists.txt”.



PROCEDIMENTOS

- ✖ Dentro de “CMakeLists.txt” altere as seguintes linhas para que seja possível a geração dos executáveis.



```
CMakeLists.txt - Bloco de Notas
Arquivo  Editar  Localizar  Ajuda

# Add include directories
include_directories(.)
include_directories[..../src]
include_directories[${metasim_INCLUDE_DIRS}]

set (EXECUTABLE_NAME copia)
set (EXECUTABLE_SOURCES copia.cpp)

# Create the executable.
add_executable (${EXECUTABLE_NAME} ${EXECUTABLE_SOURCES})

target_compile_features (${EXECUTABLE_NAME} PRIVATE cxx_range_for)

# Indicate that the executable needs metasim library.
target_link_libraries (${EXECUTABLE_NAME} ${PROJECT_NAME} ${metasim_LIBRARIES})
```

PROCEDIMENTOS

- ✖ Dê o comando “make” para compilar o “copia.cpp”.

```
natalia@natalia-S14BW01:~/Documentos/teste/metasm2.0/RTLIB/build$ make
[ 65%] Built target rtlib
[ 68%] Built target edf
[ 70%] Built target rm
[ 73%] Built target sprunt_example1
[ 76%] Built target spsl
[ 78%] Built target cbs
[ 81%] Built target grub
[ 84%] Built target copia
[ 86%] Built target rtlib_test
[ 89%] Built target TestThresholds
[ 92%] Built target TestAVR
[ 94%] Built target TestMRT
[ 97%] Built target TestTask
[100%] Built target TestCBS
natalia@natalia-S14BW01:~/Documentos/teste/metasm2.0/RTLIB/build$
```

PROCEDIMENTOS

✖ Por fim, dê o comando “./copia” no caminho descrito.

```
natalia@natalia-S14BW01: ~/Documentos/teste/metasim2.0/RTLIB/build/e...
natalia@natalia-S14BW01:~$ cd Documentos/teste/metasim2.0/RTLIB/build/examples/copia
natalia@natalia-S14BW01:~/Documentos/teste/metasim2.0/RTLIB/build/examples/copia$ ls
CMakeFiles          copia          grafico.pst      trace.json
cmake_install.cmake debug.txt      Makefile         trace.txt
natalia@natalia-S14BW01:~/Documentos/teste/metasim2.0/RTLIB/build/examples/copia$ ./copia
Bem-vindos a nova versao do ENMA CORE =>
Inicializando escalonador e kernel...
Criando Task 1
Ajustando WCET da Task 1
Criando Task 2
Ajustando WCET da Task 2
Criando Task 3
Ajustando WCET da Task 3
Adicionando as configuracoes necessarias...
Adicionando tarefas ao kernel...
Simulando...
One single run

Run #0
Hardware configurado com sucesso!
```



3.

PROGRAMAÇÃO

Breve explicação sobre o código



Visual Studio Code

4.

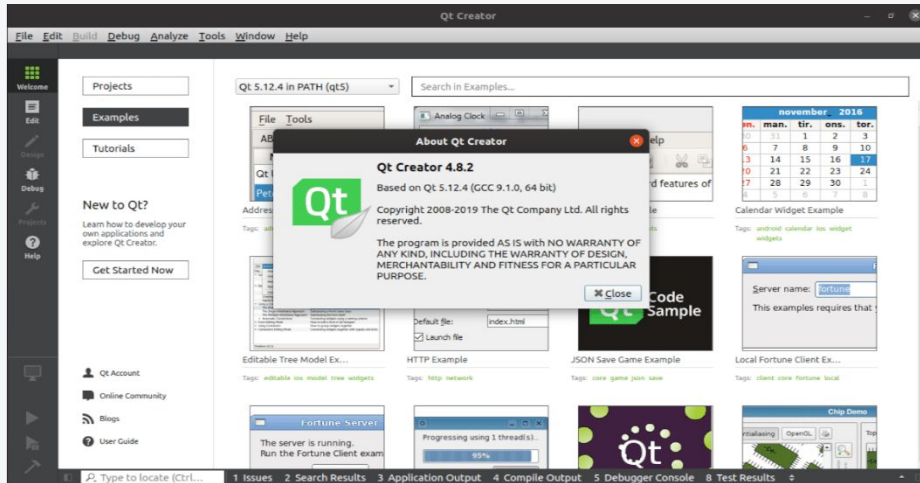
GRÁFICO COM O PLOTSCHED

Processo de plotagem da simulação EDF



QT SDK

- ❌ `sudo apt install g++`
- ❌ `sudo apt install qt5-default qtcreator qtbase5-examples qtbase5-doc-html`



PLOTSCHED

- ❌ git clone
https://github.com/
balsini/PlotSched.git
- ❌ cd Plotsched
- ❌ cd src
- ❌ make
- ❌ ./Plotsched

```
natalia@natalia-S14BW01: ~/Documentos/PlotSched/src
natalia@natalia-S14BW01:~/Documentos/PlotSched/src$ ls
customscene.cpp      main.o                moc_plot.o
customscene.h       /mainwindow.cpp        moc_predefs.h
customscene.o       /mainwindow.h          moc_tracefilelister.cpp
customtoolbar.cpp   /mainwindow.o          moc_tracefilelister.o
customtoolbar.h     /mainwindow.ui         plot.cpp
customtoolbar.o      Makefile              plotframe.cpp
event.cpp            moc_customscene.cpp   plotframe.h
event.h              moc_customscene.o     plotframe.o
event.o              moc_customtoolbar.cpp plot.h
eventsmanager.cpp    moc_customtoolbar.o   plot.o
eventsmanager.h      moc_event.cpp          PlotSched
eventsmanager.o      moc_event.o           PlotSched.pro
eventsparser.cpp     moc_eventsmanager.cpp rangeselector.cpp
eventsparser.h       moc_eventsmanager.o   rangeselector.h
eventviewer.cpp      moc_eventsparser.cpp  rangeselector.o
eventviewer.h        moc_eventsparser.o    tracefilelister.cpp
eventviewer.o        moc_mainwindow.cpp    tracefilelister.h
main.cpp             moc_mainwindow.o      tracefilelister.o
                    moc_plot.cpp          ui_mainwindow.h
natalia@natalia-S14BW01:~/Documentos/PlotSched/src$ ./Plotsched
```

INTERFACE DO PLOTSCHED

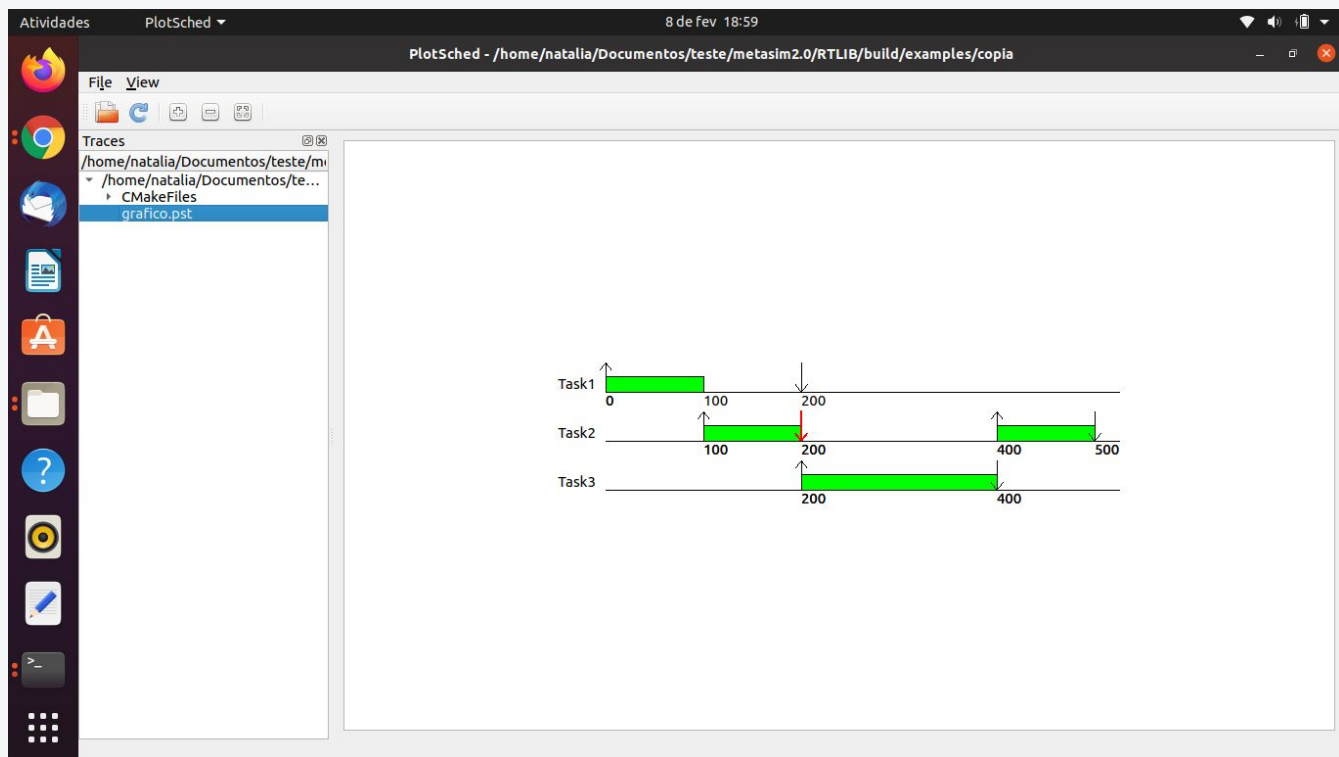


GRÁFICO DE "CÓPIA"



CÓDIGO PST

- ✗ I = instância
- ✗ S = início
- ✗ E = fim

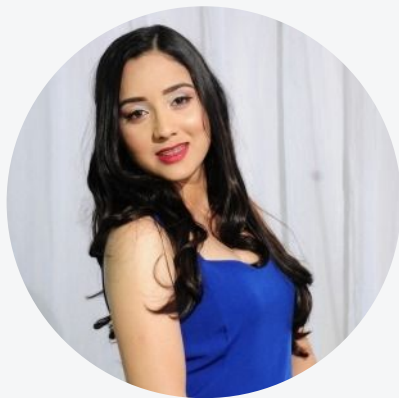


| Arquivo | Editar | Localizar | Ajuda | |
|---------|--------|-----------|----------|---|
| 0 | Task1 | 0 | CREATION | I |
| 100 | Task1 | 0 | CREATION | |
| 200 | Task1 | 0 | DEADLINE | I |
| 100 | Task2 | 0 | CREATION | I |
| 200 | Task2 | 0 | MISS | I |
| 400 | Task2 | 0 | CREATION | I |
| 500 | Task2 | 0 | DEADLINE | I |
| 200 | Task3 | 0 | CREATION | I |
| 400 | Task3 | 0 | CREATION | |
| 400 | Task3 | 0 | DEADLINE | I |
| 500 | Task3 | 0 | CREATION | |
| 0 | Task1 | 0 | RUNNING | S |
| 100 | Task1 | 0 | RUNNING | E |
| 100 | Task2 | 0 | RUNNING | S |
| 200 | Task2 | 0 | RUNNING | E |
| 400 | Task2 | 0 | RUNNING | S |
| 500 | Task2 | 0 | RUNNING | E |
| 200 | Task3 | 0 | RUNNING | S |
| 400 | Task3 | 0 | RUNNING | E |

EQUIPE



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Matos**



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Guimarães**



**Rafael da Silva
Gonçalves**



**Robert Vinícius
Oliveira Gonçalves**



FIM

