

DO178-B

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# Cada-Name

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# I. Software Requirement

- The Cada-Name is a program written in ADA.
- Level E criticality

## Compiler:

- Gnat 2018 Compiler version (8.2.1)

## OS:

- Development platform:
  - 4.18.16-arch1-1-ARCH #1 SMP PREEMPT Sat Oct 20 22:06:45 UTC 2018 x86\_64 GNU/Linux
  - 4.15.0-43-generic #46-Ubuntu SMP Thu Dec 6 14:45:28 UTC 2018 x86\_64 x86\_64 GNU/Linux
- Release platform: stm32f429l-discovery embedded board

## IDE:

- GPS 2017 (20170515)
- Vim version (8.1.470)

## Software Requirement:

- The Cada-Name project is a memory game designed for STM32F429I embedded board

# II. Traceability Methodology

This part will be about the specs of the Cada-Name project.

The high-level requirements are described as “HLR.X” where X is the requirement number. In the other hand the low-level requirements will be labeled as such “LLR.X.Y” with X the number of the HLR and Y the low-level requirement.

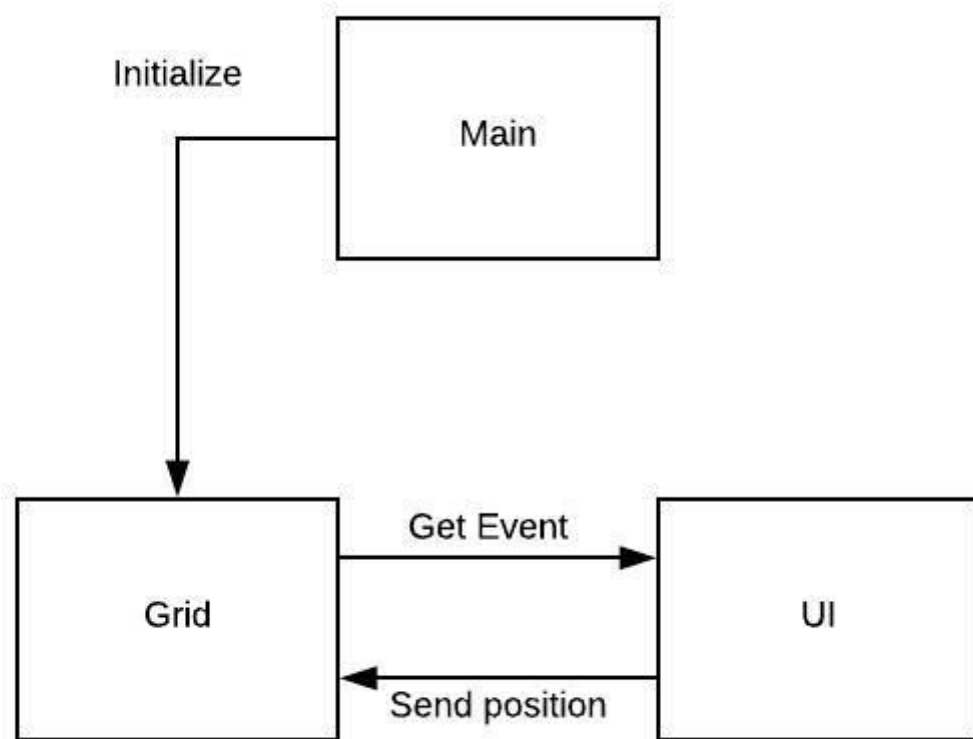
The project's file architecture is the following:

```
Makefile
prj.gpr
README.md
src/
|— grid.adb
|— grid.ads
|— main.adb
```

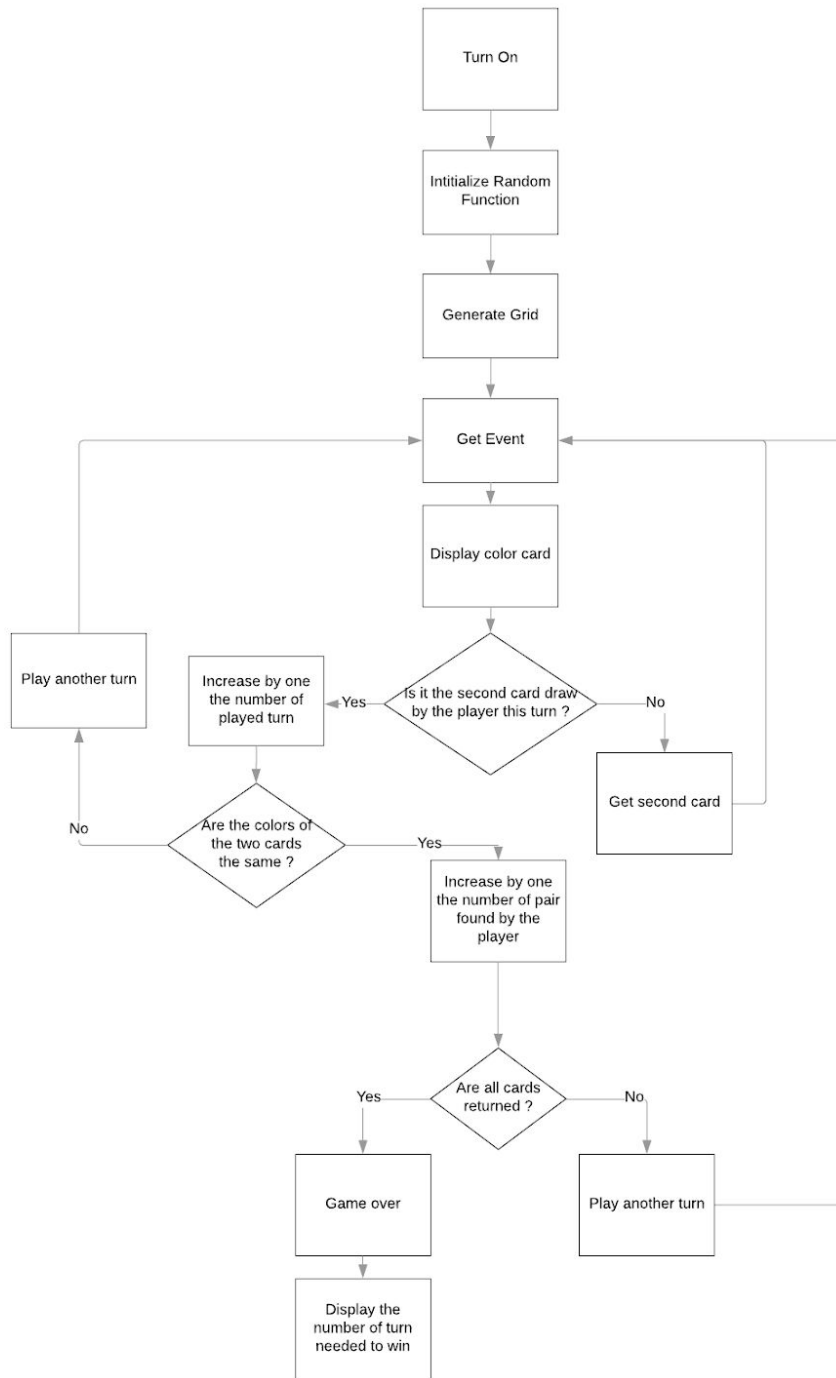
|— printer.adb  
|— printer.ads  
|— verf.adb  
|— verf.ads

### III. Software Architecture

#### 1. Generalized Architecture



#### 2. Execution Flow



## IV. High Level Requirements

Requirement	Description
HLR.1	The number of cards is 16
HLR.2	There is only 1 player
HLR.3	The game is over when every card has been revealed
HLR.4	At the end, the number of turn need by the player to win is displayed
HLR.5	There is only 2 cards with the exact same color
HLR.6	A player can reveal two cards during a turn
HLR.7	If the two revealed cards are not the same they are hidden back
HLR.8	To reveal a card, the player must press the screen at the position of the card
HLR.9	After the generation of the grid, the cards do not move

## V. Low Level Requirements

Requirement	Description
LLR.1.1	Split the screen into a 4x4 card
LLR.3.1	Keep track of the revealed cards
LLR.3.2	Stop the game when every card has been revealed
LLR.4.1	Keep track of the number of turn
LLR.5.1	For each color used in the grid, assign only two cards with it
LLR.5.2	Assign a color to a card that has not already a color
LLR.7.1	Display the default color at the position of the cards if they are not the same
LLR.8.1	Divise the position in the screen by the number of card to determine which is wanted to be reveal

