# Pro-Wordle Project

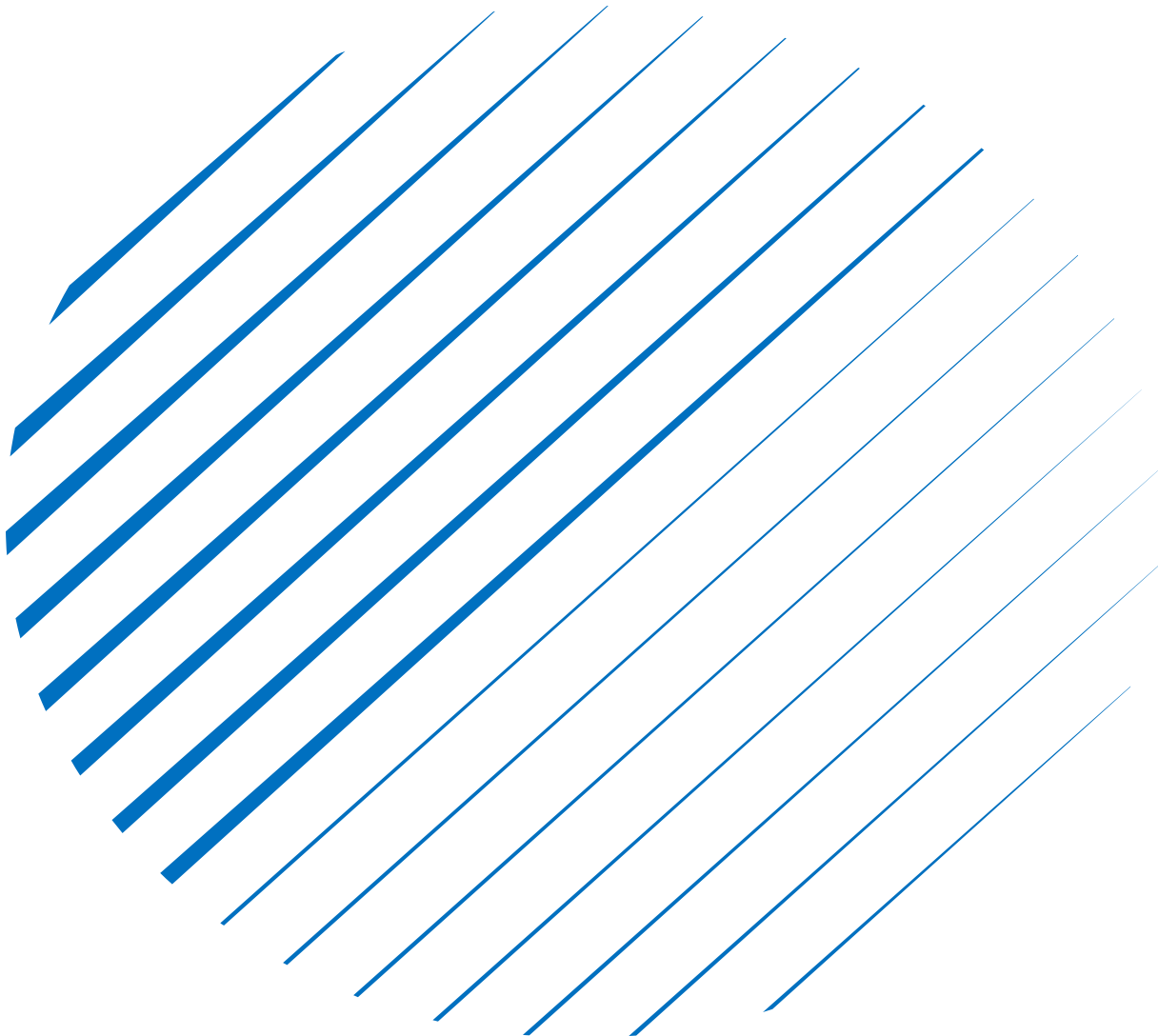## Team 111

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- **Description :**

  The project is simply a modified version of *wordle* game consisting of two phases, the KB Phase (Knowledge base) where the player enters words with their categories and then the Game Play Phase where the player tries to guess a chosen word with a limited number of guesses.

- **Implemented Predicates :**

  1. main ：  initiates the game to start building the knowledge base and then playing.

  2. build_kb : knowledge base phase where the user starts entering words with their corresponding categories until entering the word done.

  3. is_category(C) : succeeds if there is a match for a word entered by the user with <u>category C.</u>

  4. categories(L) : returns <u>a list  L</u> of all available categories of the words entered by the user.

  5. available_length(L) : succeeds if there is a word in the KB with the <u>length L</u> by splitting the words into lists and getting their length.

  6. pick_word(W,L,C) : picks a word of <u>length L</u> and <u>category C.</u>

**7.** correct_letters(L1,L2,CL) : succeeds if CL is the list containing the letters found in both <u>lists L1 and L2.</u>

**8.** correct_positions(L1,L2,PL) : succeeds if PL is the list containing the letters found in <u>lists L1 and L2</u> and in the same positions.

**9.** play : game play phase has <u>three main predicates</u> *(Play1/1, play2/2,play3/3)* and starts by reviewing the available categories to the user to choose a catergory and then a length so that the program picks a word for the player to start guessing.

**10.** play1(X) : First predicate of the game play phase that succeeds when <u>X is a valid category</u> other than that it will keep recalling itself recursively.

**11.** play2(X,Z) : Second predicate of the game play phase that succeeds when <u>Z is a valid length of a word of catergory X</u> other than that it will keep recalling itself recursively.

**12.** play3(X,Z,Acc) : Third predicate of the game play phase in which the player continues to guess words that should be <u>of length Z</u> and each time the correct letters and letters in correct positions are displayed and he continues to guess until he gets <u>the correct word which is X</u> and wins or the number of remaining guesses represented by the <u>accumilator Acc</u> ends and he losses.

- **Examples of the code :**
    1. **Example 1** (Winning situation)

```
1 ?- main.
Welcome to Pro-Wordle!
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Please enter a word and its category on separate lines:
|: titanic.
|: films.
Please enter a word and its category on separate lines:
|: avatar.
|: films.
Please enter a word and its category on separate lines:
|: ted.
|: films.
Please enter a word and its category on separate lines:
|: mona.
|: names.
Please enter a word and its category on separate lines:
|: farag.
|: names.
Please enter a word and its category on separate lines:
|: hospital.
|: places.
```

Please enter a word and its category on separate lines:
|: school.
|: places.
Please enter a word and its category on separate lines:
|: done.

Done building the words database...

The available categories are: [films,names,places]
Choose a category:
|: films.
Choose a length:
|: 3.
Game started. You have 4 guesses.

Enter a word composed of 3 Letters
|: spy.
Correct letters are: []
Correct letters in correct positions are: []
Remaining Gusses are : 3

Enter a word composed of 3 Letters
|: her.
Correct letters are: [e]
Correct letters in correct positions are: [e]
Remaining Gusses are : 2

Enter a word composed of 3 Letters
|: fed.
Correct letters are: [d,e]
Correct letters in correct positions are: [e,d]
Remaining Gusses are : 1

Enter a word composed of 3 Letters
|: ted.
You Won!
**true .**

## 2. **Example 2** **(Losing situation)**

SWI-Prolog (Multi-threaded, version 7.2.3)

File   Edit   Settings   Run   Debug   Help

```
1 ?- main.
Welcome to Pro-Wordle!
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Please enter a word and its category on separate lines:
|: lion.
|: animals.
Please enter a word and its category on separate lines:
|: frog.
|: animals.
Please enter a word and its category on separate lines:
|: apple.
|: companies.
Please enter a word and its category on separate lines:
|: samsung.
|: companies.
Please enter a word and its category on separate lines:
|: spain.
|: countries.
Please enter a word and its category on separate lines:
|: egypt.
|: countries.
```

Please enter a word and its category on separate lines:
|: france.
|: countries.
Please enter a word and its category on separate lines:
|: done.

Done building the words database...

The available categories are: [animals,companies,countries]
Choose a category:
|: countries.
Choose a length:
|: 4
|: .
There are no words of this length.
Choose a length:
|: 5.
Game started. You have 6 guesses.

Enter a word composed of 5 Letters
|: egypt.
Correct letters are: [p]
Correct letters in correct positions are: []
Remaining Gusses are : 5

Enter a word composed of 5 Letters
|: niger.
Correct letters are: [i,n]
Correct letters in correct positions are: []
Remaining Gusses are : 4

Enter a word composed of 5 Letters
|: japan.
Correct letters are: [a,n,p]
Correct letters in correct positions are: [n]
Remaining Gusses are : 3

Enter a word composed of 5 Letters
|: nepal.
Correct letters are: [a,n,p]
Correct letters in correct positions are: []
Remaining Gusses are : 2


Enter a word composed of 5 Letters
|: italy.
Correct letters are: [a,i]
Correct letters in correct positions are: [a]
Remaining Gusses are : 1


Enter a word composed of 5 Letters
|: india.
You Lost!