


Informatics for Musicology (IPM) 2024/25


Jupyter Notebooks

Teacher: [JN Oliveira](#)

Department of IT at U. Minho, in collaboration with  ENSICO

PL Class from 01-Oct : Laboratory practice in Jupyter Notebook

Summary : First contact with programming in Haskell. Text processing: operations with words, phrases, letters and texts. Sequences. Experience with predefined functions:

⚠ ****Important****: execute the cell below (position the cursor in the cell and press the  button on the command bar above or the **shift + enter** keys)

In [1]:

```
: opt no - lint
: m Data . Ratio
: m Data . Char
: m Date . List
```

Words

2.1 - Evaluate the expressions in the following cell:

In [3]:

```
nub "aniline"
```

```
"indigo"
```



```
In [9]: name = "Miguel Cavalo"
```

2.3 - What will we obtain if we evaluate the expression `words nome` ? Do this in the next cell and draw conclusions.

```
In [10]: name
```

```
"Miguel Cavalo"
```

2.4 - And what will we get if we evaluate the expression `unwords (words nome)` ? Do this in the next cell and draw conclusions.

```
In [17]: unwords ( words name )
```

```
"Miguel Cavalo"
```

2.5 - Evaluate the expressions in the following cell:

```
In [15]: reverse ( words name )
```

```
["Horse","Miguel"]
```

```
In [16]: words ( reverse name )
```

```
["olavaC","leugiM"]
```

What is the difference between the two results? Write this answer below replacing `(resposta)` .

- **A:** `()` .
-

2.6 - Evaluate the expression in the next cell - what was the effect obtained?


```
In [ ]: drop 1 ( words name )
drop 2 ( words name )
drop 3 ( words name )
drop 4 ( words name )
```

2.11 - Using `words`, `take`, `unwords` etc., write expressions in the next cell that obtain the two first names and the two surnames of `nome`, that is, "Joana Maria" and "Antunes Silva".

```
In [ ]: unwords ( take 2 ( words nome ) )
unwords ( drop 2 ( words nome ) )
```

2.12 - As was done above with `efeito`, complete (replacing `undefined`) the definitions in the following cell in order to obtain the names and surnames of any name `n`:

```
In [ ]: names n = undefined
surnames n = undefined
```

Try it `nomes` with `apelidos` your own name or any other name.

```
In [ ]:
```

Texts

The following cell lists the names of all students in this class:

```
In [ ]: class = [
  "Ana Bárbara Francisco Gabriel" ,
  "Dinis Cunha Andrade" ,
  "Inês Beatriz Martins Neves" ,
  "João Jorge Soares Moreira" ,
  "João Henrique Mestre Conceição Inácio" ,
  "João Miguel Pereira de Oliveira" ,
  "Matilde Sampaio Teixeira " ,
  "Mohammad Najib Angar"
]
```

2.13 - Calculate the number of students in the class in the next cell.

```
In [ ]:
```

2.14 - Evaluate the expression in the next cell - what effect is obtained?

```
In [ ]: sort class
```

2.15 - Evaluate the expression in the next cell and interpret the result obtained.

```
In [ ]: unlines class
```

2.16 - Evaluate the expressions in the following cell and interpret the results obtained.

```
In [ ]: length class
length ( unlines class )
lines ( unlines class )
```

cheat sheet

Complete the table below with what you learned from previous exercises:

Designation	Meaning	Detailed description
length	length	gives the number of letters in a word or, in the general case, the length of a sequence
(++)	junction	(complete with description)
reverse	inversion	(complete with description)
nub	removal of duplicates	(complete with description)
words	words in a sentence	(complete with description)
unwords	reverse of the previous	(complete with description)
sort	ordering	(complete with description)
(==)	equality	(complete with description)
lines	lines of text	(complete with description)
unlines	reverse of the previous	(complete with description)
take	get prefix	(complete with description)
drop	get suffix	(complete with description)

In []: