Section Pair – 2023 Standard

<u>Proposal</u>

This file describes the standard for a "Section Pair" file. The purpose of such a file is to persist key-value like information and logically combine and provide those within sections.

For the time of this writing no satisfying open-source libraries exist providing such functionalities with a similar standard and simultaneously come with a compliance-friendly license, as well as in form of a qualitative code basis.

The proposal would be to add a parser and required models to "ls-std-io" module of "Lynar Studios – C++ - Standard Library".

<u>Section Pair File</u>

A section pair file is a simple text file with a file extension either being ".sp" or ".txt". The following listing is an example of such a file:

```
# section-pair document

[general]

name=Tom
age=33
birthday=1990.01.25

[about]

star-sign=cancer
favorite-color=blue
hobbies:
  Netflix
  Gaming
```
_____
listing 1.1

The following table shows some explanations in regards to the various areas of "listing 1.1":

Line	Explanation
# section-pair document	this is the mandatory opening tag for a section pair file
[general]	this is a section with the id "general" – every pair defined within this section is associated to it
name=Tom	this is a pair, where "name" is the key within the section "general" and value is "Tom"
age=33	this is a pair, where "age" is the key within the section "general" and value is "33"
birthday=1990.01.25	this is a pair, where "birthday" is the key within the section "general" and value is "1990.01.25"
[about]	this is a section with the id "about" – every pair defined within this section is associated to it
star-sign=cancer	this is a pair, where "star-sign" is the key within the section "about" and value is "cancer"
favorite-color=blue	this is a pair, where "favorite-color" is the key within the section "about" and value is "blue"
hobbies:	this is a pair, where "hobbies" is the key within the section "about" and value is a list
Netflix	this is an element within the list of key "hobbies" – note, that this value needs to have two leading spaces
Gaming	this is an element within the list of key "hobbies" – note, that this value needs to have two leading spaces

<u>Structure</u>

The following table shows an excerpt of section pair based classes to illustrate the basis structure of a section pair file:

Model Name	Description
SectionPairDocument (class)	this model class represents a whole section pair file (like in listing 1.1) – it contains a list of **SectionPairSection** instances rules: • a document needs to have a document tag with the following format at the beginning: 　◦ # section-pair document{LINE_BREAK} • {LINE_BREAK} is representative for either \n (UNIX) or \r\n (Windows) • a document must contain at least one section
SectionPairSection (class)	this model class represents a section within a section pair file (like "[general]" in listing 1.1) – it contains a list of **SectionPairRow** rules: • a section needs to have section tag declaration in the following format: 　◦ {LINE_BREAK}[{ID}]{LINE_BREAK}{LINE_BREAK} • {LINE_BREAK} is representative for either \n (UNIX) or \r\n (Windows) • {ID} must have the following format (regular expression): 　◦ [a-z]([a-z0-9-]){1,31} • a section must contain at least one row
SectionPairRow (class)	this model class represents a row within a **SectionPairSection** (like "name=Tom" inside "general" section in listing 1.1) – it contains an instance of **SectionPairRowValue** rules: • each row must be of either type "list value" or "single value" • a "single value" row must have the following format:

- - {ID}={VALUE}{LINE_BREAK}
- a "list value" row must have the following format:
  - {ID}:{LINE_BREAK} {VALUE}{LINE_BREAK} ...
- {LINE_BREAK} is representative for either \n (UNIX) or \r\n (Windows)
- {ID} must have the following format (regular expression):
  - [a-z]([a-z0-9-]){1,63}

- {VALUE} must have the following format (regular expression):
  - [a-zA-Z0-9\-_#!?\[\]\{\}\(\)\$€§<>+:;., *\/"]{1,512}
- both, "single value" rows and "list value" rows must have at least one value assigned
- there is no logical limitation for value amounts for "list value" row

SectionPairRowValue (class)

this is an abstract class and represents either a "single value" row (**SectionPairRowSingleValue**) or a "list value" (**SectionPairRowListValue**)

thus, when using an instance of this class it should be down-casted two either one of those