

## Documentation of Project Implementation for IPP 2020/2021

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### Interpret.php

Script is written in one file with use of both classes and global values. First script parses arguments with library `argparse`, then it parses the XML code with library `ElementTree` and it parses input if there is input from file. If there is no input from file it gets parsed in `READ` class. Then it checks if the XML code is rightly formatted and it parses the XML code in class `Instruction`. After that is done it starts interpreting code with class `Interpret`. In `Interpret` we decide what instruction class will be called from dictionary `inst_dict` based on it's opcode which is saved in `self.inst.name`.

### Instruction classes

Based on what instruction class has been called there will be called another class that does semantic and syntactic checks for the arguments, for example `CHECK_NONE`, `CHECK_LABEL`, `CHECK_VAR`, etc. If there is no error we continue with interpreting the instruction. Other checks are done in each instruction class, but it may call some methods, for example `isEmpty`, `stack_isEmpty`, `split_if_at`, etc.

### Labels

I have solved labels with creating dictionary for each label and creating list that functions as stack for LF dictionaries which may be pushed onto it. Then I use command `exec` if I want to access the list from argument in class.

### Stacks

I have solved stacks with using lists as there are list functions that work just like stack ones. So if some function is called it pushes the position in code to the `call_stack` and then it pops it in function `return`. For labels I have used dictionary instead of list cause it makes it easier to use.