

Team members:

- Coroceva Vlad
- Guliciuc Stefan

GitHub link: <https://github.com/vteccc/FLCD>

Selected Method: DRP

Class Diagram:

Grammar
<div>+ start: String</div> <div>+ productions: Map</div> <div>+ terminals: List</div> <div>+ nonTerminals: List</div> <div>+ file: String</div>
<div>readFromFile(): void</div> <div>validateProductions(): void</div> <div>validateStartingSymbols(): void</div> <div>nonTerminals(): List</div> <div>terminals(): List</div> <div>productions(): Map</div> <div>start(): String</div>

```
def readFromFile(self):  
    '''  
    As the name implies we read from a file  
    '''  
    with open(self.file, "r") as inputFile:  
        self.nonTerminals = inputFile.readline().strip().strip(" ")  
        self.terminals = inputFile.readline().strip().split(" ")  
        self.start = inputFile.readline().strip()  
        for line in inputFile.readlines():  
            self.productions[line.split(  
                "-")[0].strip()] = [val.strip().split(" ") for val in  
line.split("-")[1].strip().split("|")]
```

```
def validateStartingSymbol(self):  
    '''  
    :return: an exception is not in the list of nonTerminals  
    '''  
    if self.start not in self.nonTerminals:  
        raise Exception(f"Starting symbol {self.start} is not in the list of  
nonTerminals")
```

```
def validateProduction(self):  
    '''  
    :return: an exception if the Lhs is not in the list of nonTerminals or if  
rhs is not in the list of terminals or nonTerminals  
    '''  
    for nonterminal in self productions.keys():  
        if nonterminal not in self.nonTerminals:  
            raise Exception(  
                f"Lhs {nonterminal} is not in the list of nonTerminals")  
        for prod in self productions[nonterminal]:  
            for prod2 in prod:  
                if prod2 not in self.nonTerminals and prod2 not in  
self.terminals:  
                    raise Exception(  
                        f"{prod2} is not in the list of terminals or  
nonTerminals")
```