

Compilers

Lab 6

Piotr Błaszyński

29th March 2022

Tasks (explained later):

- add compilation of instructions for input and output of values,
 - grammar rules,
 - generating the result code,

Writing to the screen and retrieving data from the console in MIPS is accomplished using system calls with specific identifiers.

Example code that displays an integer to the screen:

```
li $v0, 1
li $a0, 42
syscall
```

Example code that retrieves an integer into a variable:

```
.data
x: .word 0
.text
    li $v0, 5
    syscall
    sw $v0, x
```

Example code that prints out a string of characters:

```
.data
str: .asciiz "Text to write out."
.text
    li $v0, 4
    la $a0, str
    syscall
```

In the $\$v0$ register, enter the identifier of the system call. A list of useful calls with registers where the result is or the value should be passed (call identifier, name, parameter or return value):

id	name	parameter or return value
1	print integer	$\$a0$ - integer number to be printed
2	print float	$\$f12$ - floating point number to be printed
4	print string	$\$a0$ - the address of a character string ending in zero (asciiz) to output
5	read integer	$\$v0$ - a integer number read from the keyboard
6	read float	$\$f0$ - a floating point number read from the keyboard