1. Project description
   1. **Topic**

A program to simulate a specific task of a MIPS compiler, which is opcode syntax checking (basic instructions only)

* 1. **Requirements**
* User enters a mips instruction.

Ex : beq $t1, $t2, label

* Check if input opcode exists.
* If input opcode exists, continue to check its operands’ validation behind.
* If input mips instruction is valid, print out the cycles in which it is executed.

1. Algorithms
   1. Main
      1. Register used

* $a0: input string, opcode cycles
* $a1: classified group of opcodes
* $a2: opcode
* $a3: string of operands
* $v0: flag
  + 1. If-else check
* Step 1: Read input string from user.
* Step 2: Split string into 2 parts: opcode and operands.
* Step 3: Use branch instructions to find a possible opcode in every classified group.
* Step 4: If opcode is not found, then go to the next branch to find (linear search).

If opcode is not found in every group, then print an invalid message to console.

* Step 5: If opcode is found, check the operands part by using global variables and valid functions defined in resource file.
* Step 6: If operands part is valid, print valid valid message console, followed by the cycle, found by using global variables and functions defined in resource and utils file.
  1. Utils