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| **Étiquette** | **Assembleur** | | **Commentaire** | **Adresse** | **Machine** |
| main: | addi | $a0, $0, 6 | # définir n=6 pour factorial(n) | 00 | 20040006 |
|  | jal | factorial | # appel de factorial(n) | 04 | 0c100003 |
|  | j | end\_prog | # sauter a la fin du programmme | 08 | 08100015 |
| factorial: | addi | $t0, $a0, 0 | # initialiser temporaire $t0 = n | 0C | 20880000 |
|  | addi | $t1, $t0, -2 | # initialiser compteur outer\_loop : i = n - 2 | 10 | 2109FFFE |
|  | addi | $t3, $0, 1 | # initialiser constante = 1 | 14 | 200B0001 |
|  | addi | $t5, $t0, 0 | # initialiser somme intermédiaire a n | 18 | 210D0000 |
| outer\_loop: | addi | $t4, $t1, 0 | # initialiser compteur inner\_loop: j = i | 1C | 212C0000 |
|  | slt | $t2, $t1, $t3 | # i < 1? | 20 | 012B502A |
|  | addi | $at, $0, 1 | # $at = 1 | 24 | 20010001 |
|  | beq | $at, $t2, end\_fact | # si oui, sauter end\_fact | 28 | 102A0008 |
| inner\_loop: | sltu | $t6, $t4, $t3 | # j < 1? | 2C | 018B702B |
|  | beq | $t6, $t3, not\_first\_fact | # si oui sauter a not\_first\_fact | 30 | 11CB0003 |
|  | add | $t0, $t5, $t0 | # sommer les termes intermédiaires j fois | 34 | 01A84020 |
|  | addi | $t4, $t4, -1 | # j -= 1 | 38 | 218CFFFF |
|  | j | inner\_loop | # loop over j | 3C | 0810000b |
| not\_first\_fact: | addi | $t5, $t0, 0 | # réinitialiser la somme intermédiaire | 40 | 210D0000 |
|  | addi | $t1, $t1, -1 | # i -= 1 | 44 | 2129FFFF |
|  | j | outer\_loop | # loop over i | 48 | 08100007 |
| end\_fact: | addi | $v0, $t0, 0 | # sauver le résultat dans $v0 | 4C | 21020000 |
|  | jr | $ra | # retour | 50 | 03E00008 |
| end\_prog: | andi | $t6, $t6, 1 | # - use andi : $t6 = 1 | 54 | 31CE0001 |
|  | ori | $t6, $t6, 0 | # - use ori : $t6 = 1 | 58 | 35CE0000 |
|  | sll | $t6, $t6, 16 | # - use sll : $t6 = 0x10000 | 5C | 000E7400 |
|  | lui | $t7, 2 | # - use lui : $t7 = 0x20000 | 60 | 3C0F0002 |
|  | beq | $t6, $t7, erratum | # erreur si $t6 == $t7, sauter a erratum | 64 | 11CF0003 |
|  | lui | $at, 0x1001 | # $at = 0x10010000 | 68 | 3C011001 |
|  | sw | $v0, 0x10($at) | # sauver fact(6) a l'adresse 0x0010 | 6C | AC020010 |
|  | j | the\_end | # sauter a la fin | 70 | 0810001f |
| erratum: | lui | $at, 0x1001 | # $at = 0x10010000 | 74 | 3C011001 |
|  | sw | $t6, 0x10($at) | # sauver $t6 a l'adresse 0x0010 | 78 | AC0E0010 |
| the\_end: | nop |  | # fin du programme | 7C | 00000000 |