Exercise 8

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- Source code

Task

1. Write a program which calculate the value of factorial of integer values.
   In program implementation use for loop.
2. What is the greatest integer value for which your program work correctly?
   Explain your answer.

Program description

Program reads from the standard input integer value from which factorial will be calculated. Factorial is evaluated basing on the following c-language code.

```c
int factorial(int n) { int fac = 1; for (; n != 0; --n) { fac *= n; } return fac; }
```

The greatest integer value for which program works correctly is `2^31-1` which is equal to `2147483647`. This limitations is caused by following factors:

- MIPS has 32-bit registers,
- program uses signed integer which means that one bit is used for sign.