

Exercises

(1) (Text answer) Consider the following program for computing factorial numbers:

```
/* Factorial function definition */
int fact(int n)
{
    int i; /* counter variable */
    int f; /* factorial */

    /* pre-condition */
    assert (n >= 0);

    /* post-condition */
    f = 1;
    for(i = 1; i <= n; i = i + 1)
    {
        f = i * f;
    }
    return f;
}
```

Provide your answers to the following questions in a plain text file:

(a) How many arithmetic operations (+, −, *, /) are required to compute `fact(5)`?

For each time we repeat the forloop, we use one + and *, so if the factorial is 5, we use 5 + and * signs to calculate it. - and / aren't used in this.

(b) How many arithmetic operations (+, −, *, /) are required to compute `fact(n)` for any positive integer n ?

For this we can use same logic as above, so if we do the forloop n times, we got n number of + and * uses.

2. Check github.

3. Check github.