# Exercises

6. Revise the program in which the factorial function is defined such that instead of fact the following postfix operator is used:

```
op _! : Nat -> Nat .
```

7. Revise the program in which the odd-even divide & conquer factorial function is defined such that instead of oedc-fact and cond the following postfix and mix-fix operators are used:

```
op _! : Nat -> Nat .
op if_then {_} else {_} : Bool Nat Nat -> Nat .
```

# Exercises

8. Investigate why it takes times to compute Ackerman function with even small natural numbers, such as $\mathrm{ack}(5,5)$ and $\mathrm{ack}(10,10)$.

9. Find the definition of Takeuchi function, describe it in CafeOBJ and run it with some natural numbers. Investigate why it takes time to compute Takeuchi function with even small natural numbers.

10. Write the programs found in the lecture note in another functional programming language, such as Standard ML, and run them with its processor, such as SML#.