

SOEN331: Introduction to Formal Methods
for Software Engineering

Assignment 2 on Object-Z specification

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1 Map

EmployeeSalaries

$\uparrow (AddEmployee, DeleteEmployee, ModifySalary)$

$employeeSalary : Employee \mapsto \mathbb{R}$

$\forall d : dom \ employeeSalary \bullet employeeSalary(d) > 0.0$

INIT

$employeeSalary = \emptyset$

AddEmployee

$\Delta(employeeSalary)$

$newEmployee? : Employee$

$salary? : \mathbb{R}$

$salary? > 0.0$

$newEmployee? \notin dom \ employeeSalary$

$employeeSalary' = employeeSalary \cup \{newEmployee \mapsto salary?\}$

DeleteEmployee

$\Delta(employeeSalary)$

$who? : Employee$

$who? \in dom \ employeeSalary$

$employeeSalary' = \{who\} \triangleleft employeeSalary$

ModifySalary

$\Delta(employeeSalary)$

$employee? : Employee$

$newSalary? : \mathbb{R}$

$newSalary? > 0.0$

$employee? \in dom \ employeeSalary$

$employeeSalary' = employeeSalary \oplus \{employee? \mapsto newSalary?\}$