

SOEN 331-U: Introduction to Formal Methods  
for Software Engineering  
Assignment on Object-Z specification

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# 1 Employee management

*EmployeeSalaries*

↑ (*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*

$\Delta(employeeSalary)$

$employee? : Employee$

$newSalary? : \mathbb{R}$

$newSalary? > 0.0$

$employee? \in dom\ employeeSalary$

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