

```

MACHINE
    Company
SEES
    String
SETS
    COMPANY
VARIABLES
    companies,
    companyName
INVARIANT
    companies  $\subseteq$  COMPANY  $\wedge$ 
    companyName  $\in$  companies  $\rightarrow$  STR
INITIALISATION
    companies, companyName :=  $\emptyset$ ,  $\emptyset$ 
OPERATIONS

    newCompany  $\leftarrow$  createCompany(nameValue) =
    PRE
        nameValue  $\in$  STR  $\wedge$ 
        nameValue  $\notin$  ran(companyName)
    THEN
        ANY comp
        WHERE
            comp  $\in$  COMPANY - companies
        THEN
            companies := companies  $\cup$  {comp} ||
            companyName(comp) := nameValue ||
            newCompany := comp
        END
    END;

    nameValue  $\leftarrow$  getCompanyName(companyValue) =
    PRE
        companyValue  $\in$  companies
    THEN
        nameValue := companyName(companyValue)
    END;

    setCompanyName(companyValue, nameValue) =
    PRE
        companyValue  $\in$  companies  $\wedge$ 
        nameValue  $\in$  STR  $\wedge$ 
        nameValue  $\notin$  ran(companyName)
    THEN
        companyName(companyValue) := nameValue
    END;

    removeCompany(companyValue) =
    PRE
        companyValue  $\in$  companies
    THEN
        companies := companies - {companyValue} ||
        companyName := {companyValue}  $\blacktriangleleft$  companyName
    END

END

```