MACHINE
Company
SEES
String
SETS
COMPANY // the set of all possible company instances
VARIABLES
company, // the set of company instances currently instantiated in the system
company_name //B variable for the "name" attribute of a company
INVARIANT
$company \subseteq COMPANY \wedge$
$company\_name \in company \rightarrow STR$
//attributes and references are modelled as relations/functions
//the type of function (partial/total, injective, surjective, bijective) depends on multiplicities
INITIALISATION
$company := \emptyset \;||\; company\_name := \emptyset$
OPERATIONS

$company\_value \leftarrow$ **create_company**$(name\_value) \mathrel{\widehat{=}}$
PRE
$name\_value \in STR$
THEN
ANY *comp*
WHERE $comp \in COMPANY - company$
THEN $company := company \cup \{comp\} \;||$
company_name$(comp) := name\_value \;||$
$company\_value := comp$
END
END;

delete_company$(company\_value) \mathrel{\widehat{=}}$
PRE
$company\_value \in company$
THEN
$company := company - \{company\_value\} \;||$
$company\_name := \{company\_value\} \lhd company\_name$
END;

$name\_value \leftarrow$ **get_company_name**$(company\_value) \mathrel{\widehat{=}}$
PRE
$company\_value \in company$
THEN
$name\_value := company\_name(company\_value)$
END;

set_company_name$(company\_value, name\_value) \mathrel{\widehat{=}}$
PRE

$company\_value \in company \wedge$
$name\_value \in STR$
THEN
company_name$(company\_value) := name\_value$
END

END