



## Assignment # 01

- Subject : Software Verification and Validation
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- Degree : BS(SE)
- ID # 6947
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- **What is Z specification, why is it use for, also give example?**

**Ans: Introduction :**

Z is a formal specification language for computer systems which is based on set theory and predicate logic. There are several textbooks on Z in the library, in particular: • The Mathematics of Software Construction. A. Norcliffe & G. Slater. Ellis Horwood, 1991. • Z User Manual. M.A. McMorran & J.E. Nicholls. IBM Technical Report, 1989. • The Z Notation - A Reference Manual. J.M. Spivey. Prentice–Hall, 1989. • An Introduction to Formal Specification and Z. B. Potter, J. Sinclair & D. Till. Prentice–Hall, 1996. The basic unit of specification in Z is a schema. A Z schema consists of a name, a declaration of variables and a predicate.

: SchemaName x : X

Predicate

Here, variable x is declared to be of type X (see section 2.2). Note that the declaration part may declare more than one variable. The predicate part is a predicate (see section 2.3) whose free variables are those of the declaration plus any constants.

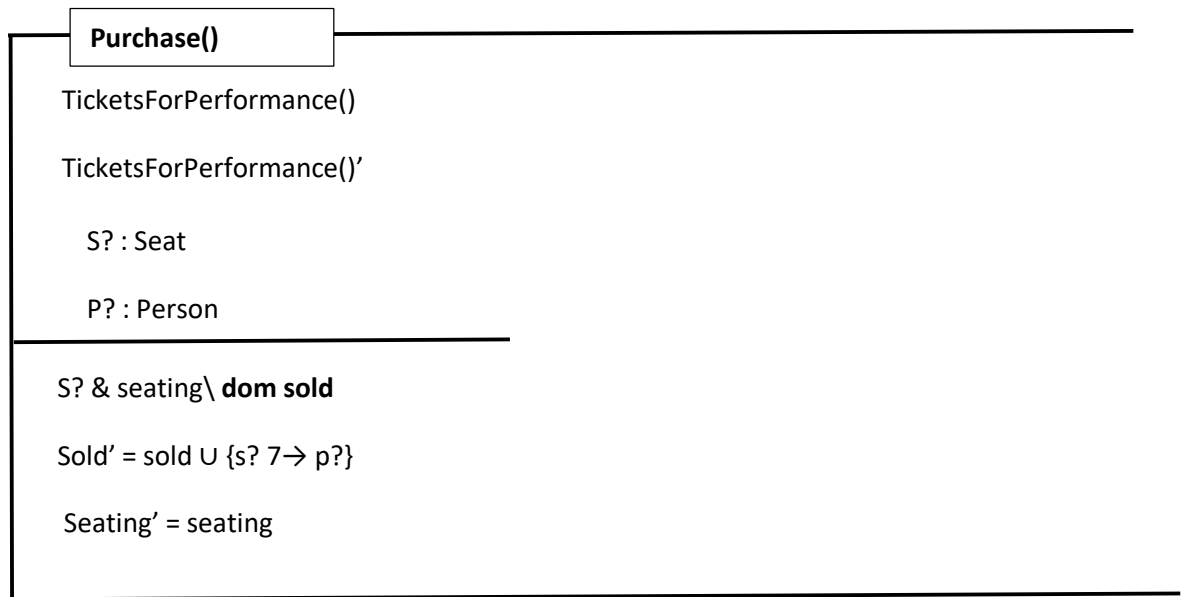
- **Why it is use for:**

The **Z notation** */'zɛd/* is a formal specification language used for describing and modelling computing

systems. It is targeted at the clear specification of computer programs and computer-based systems in general.

- **Example: 1**

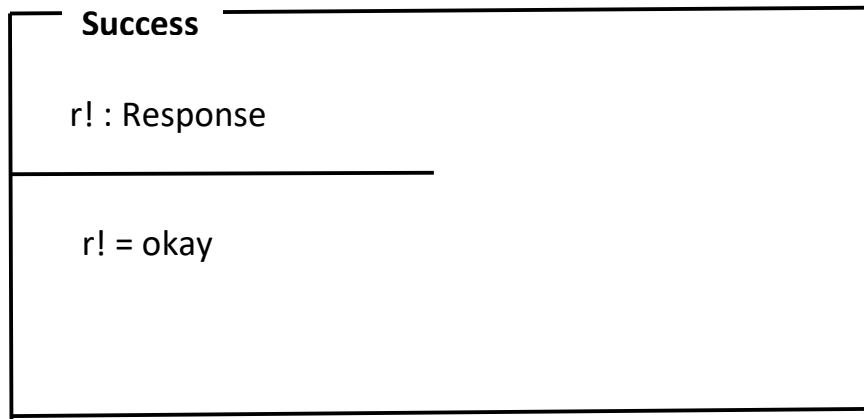
### Theater: Selling tickets



**(no output variables in this schema)**

- **Example: 2**

Response ::= okay | sorry



Then

Purchase0  $\wedge$  Success

**is a schema that reports successful ticket sale**

★ THE END ★