Tutorial 2

1) Discuss **THREE (3)** data types used in Z.
   a) Built-in → $\mathbb{N}$,$\mathbb{N}_1$,$\mathbb{Z}$
   b) basic → given set, [NAME] [STUDID]
   c) Free → choice, ROLE::=manager|clerk|owner

2) Discuss **THREE (3)** types of decorations used together with identifiers in Z.

' - prime → update/changes
? - input
! - output

num1?
num1!
num1'

3) Evaluate the names for the set of book titles below against the convention for naming sets:
   (a) BOOKTITLE
   (b) BOOK TITLE
   (c) BookTitle
   (d) BOOK_TITLE
   (e) BOOKTITLES
   (f) BOOKTITLE2

   [BOOKTITLE]

4) Evaluate the variable names below:
   (a) numberOfPersons
   (b) NumberOfPersons
   (c) number Of Persons
   (d) number_of_persons
   (e) number2
   (f) 2number
   (g) Number2

5) We are looking at defining a video rental system. A video has a title and a subject by which it is classified. We do not need to know anything about the internal details of titles and subjects. Introduce titles and subjects as given sets/basic types.

   [TITLE] - the set of all available video title in the shop
   [SUBJECT] - the set of all classified subjects for the video

6) A hotel room system reserves rooms for guests from an arrival date to a departure date. Given the basic types below:

[HOTEL] - the set of all hotels
[RESERVATION] - the set of all reservations
[ROOM] - the set of all rooms
[GUEST] - the set of all guests

Declare variables to represent:

(a) A single hotel
hotel : HOTEL

(b) A finite set of rooms
rooms : $\mathbb{F}$ ROOM

(c) A single reservation
reserve : RESERVATION

(d) A set of guests
guests : $\mathbb{P}$ GUEST

7) Given [DUCK] as the set of all ducks in the lake, explain the difference between
x: DUCK and y: $\mathbb{P}$ DUCK
x is single duck, y is empty, one or more than one duck

8) An employee has an annual salary that is always a whole number of Ringgit Malaysia. Declare a variable to represent an employee's annual salary.
annualSalary : $\mathbb{N}_1$