

**UCT31021 – PRACTICAL FOR ARTIFICIAL INTELLIGENCE**  
**DEPARTMENT OF ICT**  
**FACULTY OF TECHNOLOGY**  
**SOUTH EASTERN UNIVERSITY OF SRILANKA**

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**Labsheet: 02**

**Date:** 13<sup>th</sup> June 2023

**Title :** Arithmetic Operations & Logical Operations.

**Aim:**

- To familiar with arithmetic operations in PROLOG.
- To familiar with logical operators in PROLOG.

**Task 01:**

“is” is used to express an arithmetic operation.

Syntax: <variable> is <expression>

Ex: X is 2+6

1. Type the following into the Prolog consoler and check the output.
  - Temp is 10.
  - A is 2-15.
  - Area is 1.5\*2.5.
  - B is 100/4.
2. Write a console command to find the BMI value for 55 kg of weight and 1.65 m of height.
3. Write a rule to find the BMI.
4. Alter the previous command to find the BMI value for the user-specified values

**Task 02:**

1. Create a knowledge base to calculate the sum of the two decimal values.
2. Alter the knowledge base to read two integer values and display the multiplication of them.
3. Allow the user to insert the two values and the arithmetic operation to perform the calculation.

### Task 03: Logical operators

Following characters used to perform the logical operations.

>	Greater than
<	Less than
>=	Greater than equal to
=<	Less than equal to
==	Equal
!=	Not equal
not	Negative from of the expression

Define the following expression with suitable examples.

Note: Expr stands for expression.

1. between(+low, +High, Value)
2. plus(Int1, int2, int3)
3. Expr1 > Expr2
4. Expr1 < Expr2
5. Expr1 <= Expr2
6. Expr1 == Expr2
7. Expr1 != Expr2

### Task 04:

1. Define a rule to check whether the user is a child or an adult.

(Hint: The age lower than 18 is considered a child. Others are elders.)

- I. if the age is 20 years.
  - II. if the age is 17 years.
  - III. if the age is 18 years.
2. Alter the previous rule to collect the user age and perform the same.

**Practice Question:**

1. There are twelve months in a year. Each month end-up with a specific number of days.

The days are as follows,

- 31 Days – January, March, May, July, August, October, December
- 28 Days – February
- 30 Days – Remaining months

a) Define the facts for the scenario.

b) Design suitable rules to show the number of days for the user-specified month.

2. Calculate the density of each country.

Country	Population	Area
China	1000	10
India	85	4
USA	65	6
UK	80	12