**ReadMe for LP-1**

**How to run Level 1 to 4:**

Files for Level 1 to 4 are in folder cs6301->g45.

Create a new project in eclipse and copy all the files in folder cs6301->g45.

* **Level-1 and Level-2:**

It consists of java files:

LP1L1\_driver.java

Num.java

Change the x and y number value as per your choice in LP1L1\_driver.java

Change base value in Num.java as per your choice

Run LP1L1\_driver.java

* **Example-1:**

It will give output for x=100 and y=50 and base=10 as:

x: 100

y: 50

Addition: 150

Subtract: 50

Product: 5000

Level-1 Power: 10000000000

Divide: 2

Mod: 0

Square root : 10

Level-2 Power : 10000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000

* **Example-2:**

It will give output for x=9 and y=0 and base=10 as:

x: 9

y: 0

Addition: 9

Subtract: 9

Product: 0

Level-1 Power: 59049

Divide Exception: java.lang.ArithmeticException: Divide by 0 is not allowed!

Take nonzero divisor

Mod Exception: java.lang.IllegalArgumentException: Mod is allowed only if a is nonnegative and b > 0

Take a to be nonnegative and b > 0

Square root : 3

Level-2 Power : 1

* **Level-3:**

It consists of files LP1L3.java

Run LP1L3.java

It will output "Enter your expressions:"

Now enter the expressions and press enter twice

* **Example-1:**

a = 999 ;

b = 8 ;

c = a b ^ ;

d = a b + ;

;

**Output:**

999

8

992027944069944027992001

1007

10: 7 0 0 1

* **Example-2:**

Enter your expressions:

x = 98765432123456789012456789012646378589165127456376 ;

y = 56698364876147630847612984618476284587653095761286 ;

z = 9876543212345678901 ;

e = 85849037612648764376549098612765874365348765673543 ;

f = 566983648761476308476145 ;

c = x y - ;

d = c z / ;

g = e f % ;

;

**Output:**

98765432123456789012456789012646378589165127456376

56698364876147630847612984618476284587653095761286

9876543212345678901

85849037612648764376549098612765874365348765673543

566983648761476308476145

42067067247309158164843804394170094001512031695090

4259290557725229672777304701870

342342737580166640522218

10: 8 1 2 2 2 5 0 4 6 6 6 1 0 8 5 7 3 7 2 4 3 2 4 3

* **Level-4:**

It consists of files:

LP1L4.java

IncorrectInputFormatException.java

OperatorPrecedence.java

Tokenizer.java

Run LP1L4.java

* **Example:**

x = 10 ;

p = 1 ;

8 p = p \* x ;

10 x = x - 1 ;

15 x ? 8 ;

p ;

;

**Output:**

3628800

10: 0 0 8 8 2 6 3

* **Example:**

1 x = 98765432109876543210987654321098765432109876543210 ;

2 y = 10 ;

3 p = 1 ;

5 p = p \* x ;

6 y = y - 1 ;

7 y ? 5 ;

p ;

;

**Output:**

88318092714754613943968670238501940971401725530661007242162426723757793533014514149425314041471082583234278752746228481752203148399363485960053777526890061272997987443715444513826122720929500421367647121266951360333641806557699965476113495250206261817690324484674105393706009503180908769581575574888166186965111622754454606641034934785710007470269162331454571091737743739945252018321001115692537102124819367630535360182432522038593177436594146822740310001228783999096650649267716669405112010000000000

10: 0 0 0 0 0 0 0 0 0 0 1 0 2 1 1 5 0 4 9 6 6 6 1 7 7 6 2 9 4 6 0 5 6 6 9 0 9 9 9 3 8 7 8 2 2 1 0 0 0 1 3 0 4 7 2 2 8 6 4 1 4 9 5 6 3 4 7 7 1 3 9 5 8 3 0 2 2 5 2 3 4 2 8 1 0 6 3 5 3 5 0 3 6 7 6 3 9 1 8 4 2 1 2 0 1 7 3 5 2 9 6 5 1 1 1 0 0 1 2 3 8 1 0 2 5 2 5 4 9 9 3 7 3 4 7 7 3 7 1 9 0 1 7 5 4 5 4 1 3 3 2 6 1 9 6 2 0 7 4 7 0 0 0 1 7 5 8 7 4 3 9 4 3 0 1 4 6 6 0 6 4 5 4 4 5 7 2 2 6 1 1 1 5 6 9 6 8 1 6 6 1 8 8 8 4 7 5 5 7 5 1 8 5 9 6 7 8 0 9 0 8 1 3 0 5 9 0 0 6 0 7 3 9 3 5 0 1 4 7 6 4 8 4 4 2 3 0 9 6 7 1 8 1 6 2 6 0 2 0 5 2 5 9 4 3 1 1 6 7 4 5 6 9 9 9 6 7 5 5 6 0 8 1 4 6 3 3 3 0 6 3 1 5 9 6 6 2 1 2 1 7 4 6 7 6 3 1 2 4 0 0 5 9 2 9 0 2 7 2 2 1 6 2 8 3 1 5 4 4 4 5 1 7 3 4 4 7 8 9 7 9 9 2 7 2 1 6 0 0 9 8 6 2 5 7 7 7 3 5 0 0 6 9 5 8 4 3 6 3 9 9 3 8 4 1 3 0 2 2 5 7 1 8 4 8 2 2 6 4 7 2 5 7 8 7 2 4 3 2 3 8 5 2 8 0 1 7 4 1 4 0 4 1 3 5 2 4 9 4 1 4 1 5 4 1 0 3 3 5 3 9 7 7 5 7 3 2 7 6 2 4 2 6 1 2 4 2 7 0 0 1 6 6 0 3 5 5 2 7 1 0 4 1 7 9 0 4 9 1 0 5 8 3 2 0 7 6 8 6 9 3 4 9 3 1 6 4 5 7 4 1 7 2 9 0 8 1 3 8 8