README

How to Run My Progam

```
$ javac MathExpr.java
$ javac TestMathExpr.java
$ java TestMathExpr inputA.txt output.txt
$ cmp output.txt outputA.txt
## you may need to type tr -d '\r' <outputS.txt> new.txt then change outputA.txt
to new.txt
## if you use the UNIX system
```

Decelartion of Valid And Invalid

In my program, The invalid situation I've handle include:

```
# Type Invalid
1. type something that unknow (such as: cat, dog, hello, etc)
2. incorrectly use of space (such as: 0.  3, 3. 2)
3. incorrectly use of '.' (such as: .021)
4. incorectly use of '(' or ')' ( such as sin((20) )

# Math Invalid
1. denominator is 0  (such as 0.0/0.0)
2. the number is sqrt() is nagetive (such as sqrt(-1) )
3. didn't use operator or miss a operator  (such as: 2.5 4.0 )
```

Basic Logic of My Program

- First Scan the string and divide them into operators and numbers , create a array store them

  (**If the input of the string is not valid, then it will return a signal and the main function will return invalid**)
- Then use the array before to do the second scan, this time change the infinx expression to suffix expression by **using stack**, store them into a new array.
- Then scan the previous array, **using stack** to compute them.

Main Functions

```
public static boolean isOper(String str)

public static boolean isNum(char ch)

public static int getPriority(String str)

public static String[] ToArray(String str)

public static String[] ToPoster(String[] arr)

public static int[] Compute(String[] arr)
```

Some Demo output srceenshot

outputB.txt

```
-1
22
-2
4
-30
-31
67
0
invalid
invalid
```