# Lab exercise 2

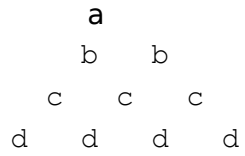
**1. Write a program that asks the user to type in two integer values at the terminal. Test these two numbers to determine if the first is evenly divisible by the second, and then display an appropriate message at the terminal.**

**2. Write a program that acts as a simple “printing” calculator. The program should allow the user to type in expressions of the form**
number operator
**The following operators should be recognized by the program:**
+ - * / S E
**The S operator tells the program to set the “accumulator” to the typed-in number. The E operator tells the program that execution is to end. The arithmetic operations are performed on the contents of the accumulator with the number that was keyed in acting as the second operand. The following is a “sample run” showing how the program should operate:**

```
Begin Calculations
1 0 S          Set Accumulator to 10
= 10.000000    Contents of Accumulator
2 / Divide by 2
= 5.000000     Contents of Accumulator
55 -           Subtract 55
= -50.000000
100.25 S       Set Accumulator to 100.25
= 100.250000
4 *            Multiply by 4
= 401.000000
0 E            End of program
= 401.000000
End of Calculations.
```

**Make certain that the program detects division by zero and also checks for unknown operators.**

**3.You are expected to use control statements to build a program to draw triangles that take user input as the size. For example, if the input is 4, there should be two kinds of triangles in the output, which are as follows:**



Notice that the size means the number of rows in each triangle. There is ***one space*** between the characters in each row.

It is **strongly** recommended that you approach this in five stages:

i. Read in and echo the input (i.e. print out the number of rows)

ii. Develop ideas using a sheet of graph paper to draw your output

iii. Think about the relationship between the number of rows and the number of characters in each row.

iv. Think about the relationship between the number of rows and the characters used in each row (for the second triangle, only use lowercase).

v. This program can take any number of size as the input (suppose it's less than 26).