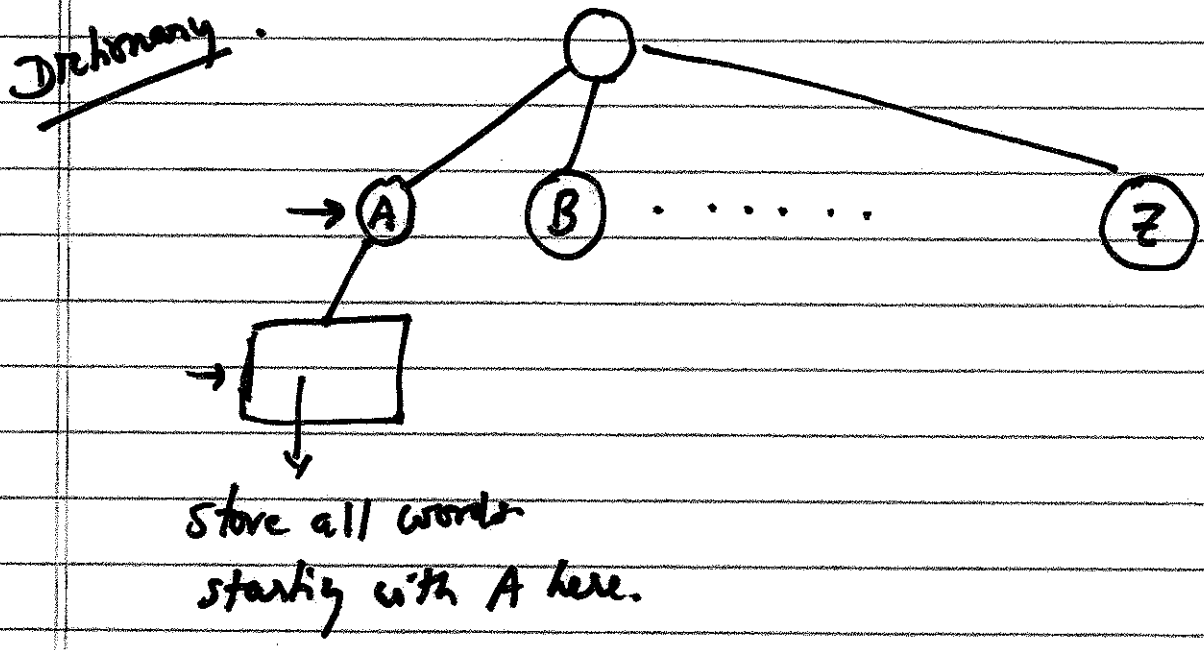
① Unix Short Guide. (collect from 66 / my office)

② Prog Assignment #1. online on BB.
Due 02/03 (submit using handin)



Euclid's Algo. to find Greatest Common Divisor of 2 numbers. a and b.

Step 1: If b equals zero, return a.

Step 2: Otherwise ~~find~~ compute c = a mod b.

Step 3: Set a = b [a ← b]
and b = c [b ← c]
Goto step 1.

Ex. $a = 49$
$b = 56$

$2 \bmod 3 = 2$
$3 \bmod 2 = 1$
$4 \bmod 5 = 4$
$5 \bmod 2 = 1$

Iteration 1:
- Step 1: $b \neq 0$.
- Step 2: $c = a \bmod b = 49 \bmod 56 = 49$
- Step 3: $a = 56$, $b = 49$

Iteration 2:
- Step 1: $b \neq 0$
- Step 2: $c = a \bmod b = 56 \bmod 49 = 7$
- Step 3: $a = 49$, $b = 7$

Iteration 3:
- Step 1: $b \neq 0$
- Step 2: $c = a \bmod b = 49 \bmod 7 = 0$
- Step 3: $a = 7$, $b = 0$

Iteration 4:
- Step 1: $(b == 0)$ return $\bullet$ 7

Pseudocode.: set count to zero.

- variable declarations.] ignored or not included.
- error handling

structure should be declared.

Eg. node /* minimum syntax */
data
link
end node (data type implied by usage)

- used to describe an Algorithm.
- components. → header, conditions. etc.
- Use intelligent variable names. (no need to declare!)
Ex. PageNumber, NumberofPages, ..

Deviation / Mean pseudocode.

Input file. 2, 4, 6, 7.

$\frac{2+4+6+7}{4} = \frac{19}{4} = 4.75$ ← printed first.

2	−2.75
4	−0.75
6	1.25
7	2.25

ADT: allows for structured programming.

Atomic Data: integer, char, float, ..
- can't be further decomposed.

Composite data: have subfields. (of diff. types)
Eg. structure,

Data type: - range of values it can take.
- operations permitted on type.

Data Structure:
- aggregation of atomic and composite data,
set of rules that hold the data together.

Eg. array (indices)

ADT: set of definitions that allows us to use the functions while hiding the implementation.

This process is also called. abstraction.

specify what an ADT can do. → How it is done is hidden.

Ex. List ADT - list of elements. operations: insert, delete, find etc.
- multiple ways to store this list
eg. linear list, matrix, tree, graph, ...