# Data Objects (Pg. 55) A data object + holds a value of a specified type. It is created by means of an Sject declaration \* Classification of Data Object 1) (oustant => constant rise time := 10 ms; 2) Nariable => variable sun integer range 0 to 100:=19: 3) Signal => signal gate delay: time:= 10 ns; 4) File => file glik-name: file-type-name [open mode] is string-empression \* Data Types (Pg. 59) @ Enumeration: Set of user defined values: type MUL is ("1," 0, 1," Z"); type MicroOP is (LOAD, STORE, ADD, SUB, MUL, DIV; subtype Brith OP is Micro-OP range ADD to DIV;

Data type (Pg. 59) \$\\ \text{\text{STD-V1.06.7C defined}} \\ \text{un stollogic\_116h} \text{ parkage.} 2) Integer Types

type 1NDEX is range 0 to 15;

type WORD LENGITH is range 31 downto 0; 3 Floating Point Types type Temp Data is range 0.0 to 100.0; 4) Physical Types

type CURRENT is trange 0 to 1E9

....:to MA = 1000 MA;

MA = 1000 MA;

Amp = 1000 MA;

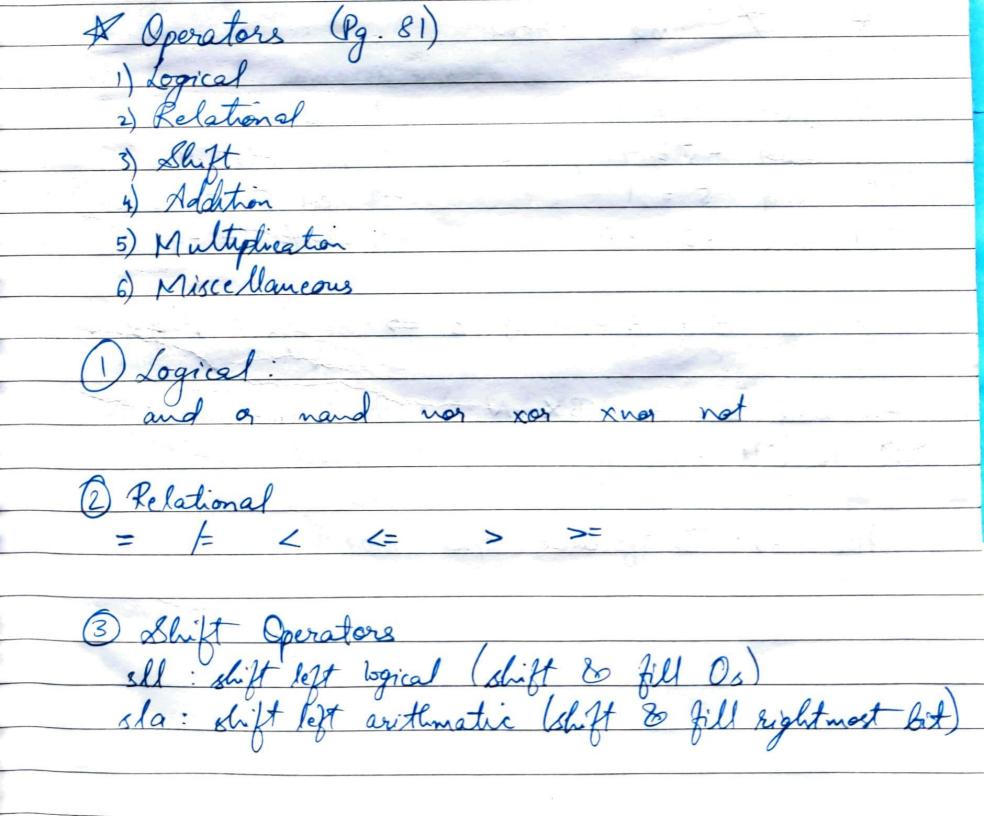
end mite;

subtype Fitter Current is CYRRENT range 10MA to 5mA. Il composite Types (Pg. 67) It represents a collection of values Array Type

It is a collection of values all belonging
to same a single type

Ex: type Address word is array (0 to 63) of bits;
type Data-word is array (7 downto 0) of stategic;
type ROM is array (0 to 125) of Data-word;

2) Record Types An object of a record type is composed of elements of same or different types - (Analogue to struct of 'C'.) type Pin-Type is range 0 to 10; type Module is size: integer range 20 to 200; delay: time; No ips: Pin Type; No ops: Pin Type; end record;



Similarly, & 82l & sta 9: 10011011" M2 is "01101100" "10011011" stra3 is "11110011" rol 4
nor 5 sla -2 sN -3 (4) Addition Operators Fx: -C' & A' & T is CAT" 5 Multiplication Operators 9 mod 5 = 4 9 rem 5 = 4 9 mod -5=-1 9 Herr (-5) = 4 -1 nem 5 =-4 9 wol 5 = 1 -9 mod -5 = -4 -9 new (-5) = -4 A rem B = A - (A/B) xB => use sign of 1st operand A mod B = A - BX N -. for some integer N Ans will have sign of 2nd operand \* Homework: Difference Hw mod & rem.