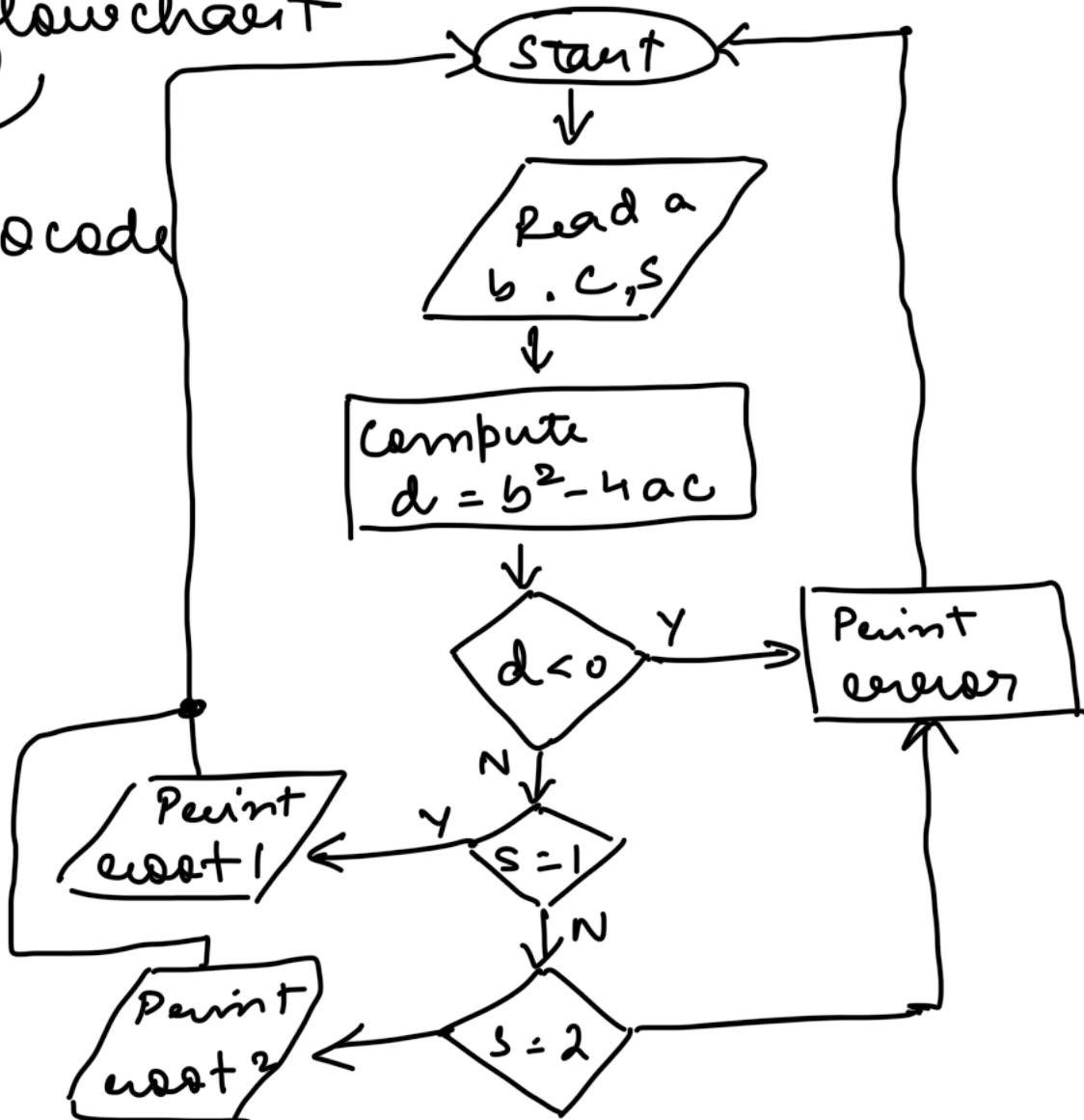


## C - Week - 4

### L1 Structured Programming

Eg. of flowchart

Pseudocode



- Control - Order of Operations
- Capture the flow of alg.
- Branching → hardware
- Th. of structured prog.
  - ↳ seq., selec<sup>n</sup>, iterat<sup>n</sup>
  - ↳ avoid misuse of branching
- Programming constructs
  - sequence - ability to group statements

together, blocks, subroutines, func<sup>n</sup>,  
scope

- Selection - conditional executions of blocks, if / else, switch / case
- Iteration - repeated execution, for, while, etc.

## L4.2 Intro. to Control Flow in C

- simple branches - if (expr) statement  
if (expr) statement else statement
- repeat a seq. - while (expr)  
statement
- repeat a specific - for(-; -; -)  
no. of times  
(iterations)  
statement
- Multiplexer / decoder / - switch ...  
lookup  
case
- General Guidelines -
  1. use for loop to iterate : known or predictable no.

↓  
Extended ifs

2. use while loop for more complex conditions
3. nested if | else → consider switch | case statement.
4. conc. on readability & clarity.
5. always prefer clarity over conciseness.

#### L4.3 Eg. Control Flow

```
float a;  
scanf("%f", &a)  
printf("%f", a)
```

#### L4.4 Eg. Loops

- intro . to do-while loop
  - ↳ loops atleast once and then checks for conditions , still while is always preferred over do - while loop.

- multi declare^n

for(i=0, j=1; j<N; i++, j+=2)

this is possible in C but avoid such constructs.

- remember to use break statements in switch ... case, otherwise code becomes buggy.