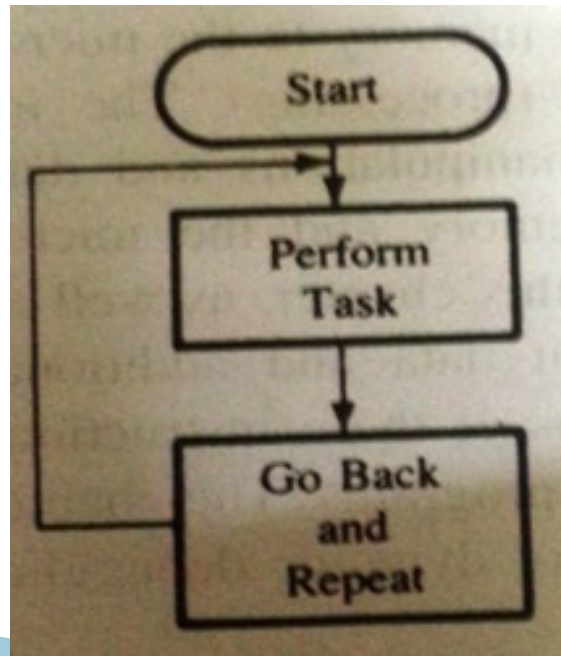


Unit 2

Lecture 7

Looping, counting and Indexing

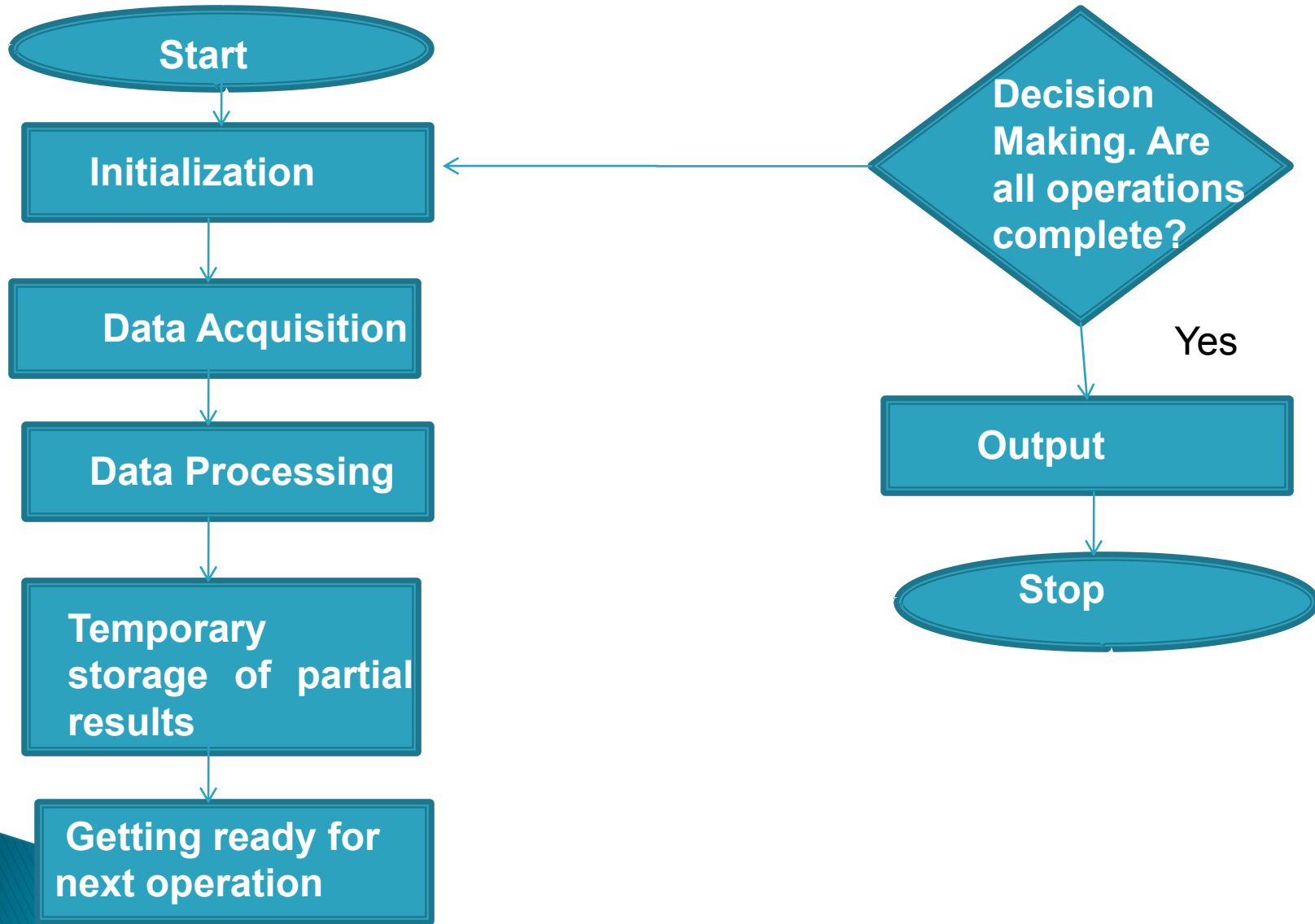
- ▶ Continuous loop–repeat task continuously
- ▶ Conditional loop–repeats a task until certain data conditions are met.
- ▶ **Flowchart of continuous loop**



Looping, counting and Indexing

- **Looping**–In this technique, the program is instructed to execute certain set of instructions repeatedly to execute a particular task number of times.
- **Counting**–This technique allows programmer to count how many times the instruction/set of instructions are executed.
- **Indexing**–This technique allows programmer to point or refer the data stored in sequential memory location one by one.

Generalized programming flowchart



Division of two 8-Bit Numbers

```
LDA 2000H ;divisor
MOV B,A
LDA 2001H ;dividend
MVI C, 00H
LOOP: CMP B
      JC BRANCH
      SUB B
      INR C
      JMP LOOP
BRANCH: STA 3000H ;remainder
        MOV A,C
        STA 3001H ;quotient
        HLT
```

ARRANGE DATA ARRAY IN ASCENDING ORDER

```
REPEAT:      MOV C,M
              DCR C
              MOV D,C
              LXI
              H,2001
LOOP:        MOV A,M
              INX H
              CMP M
              JC SKIP

              MOV B,M
              MOV M,A
              DCX H
              MOV M,B
              INX H
SKIP:        DCR D
              JNZ LOOP
              DCR C
              JNZ REPEAT
              HLT
```