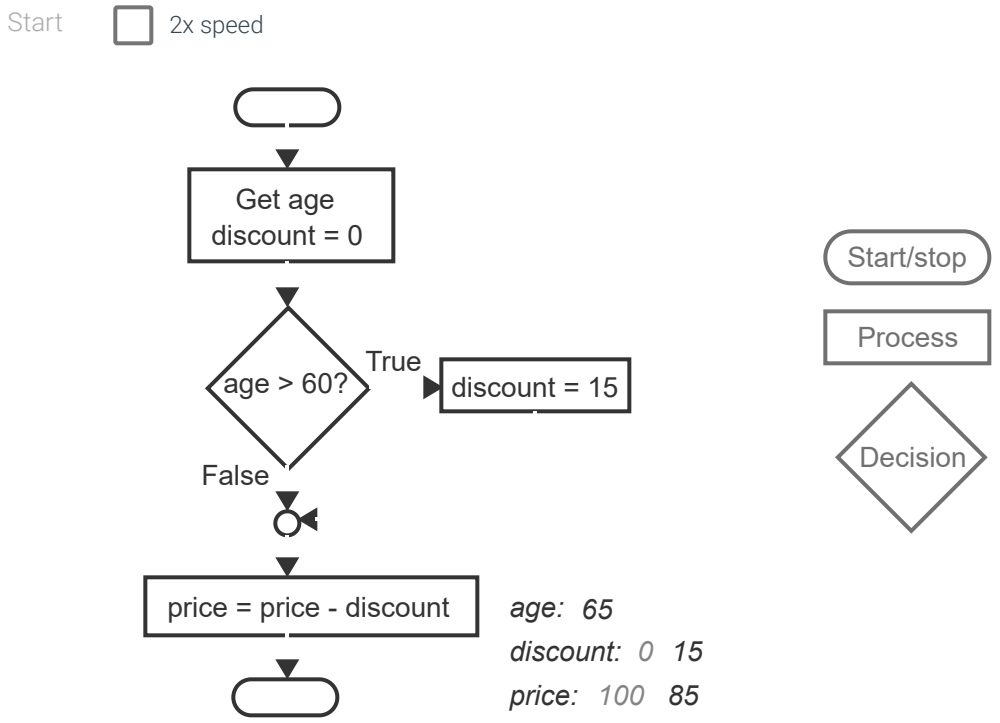
6.1 Flowcharts and assembly programming

Flowchart basics

A ***flowchart*** is a graphical depiction of a program. A flowchart typically uses an oval to indicate a program's start and end, a processing, and a diamond for a decision.

PARTICIPATION ACTIVITY 6.1.1: A flowchart graphically depicts a program.



PARTICIPATION ACTIVITY 6.1.2: Flowchart basics.

Refer to the flowchart above.

1) The top oval is the program's starting point.
   - ○ True
   - ○ False

2) The first processing box sets discount = _____ .
   - ○ 0
   - ○ 15

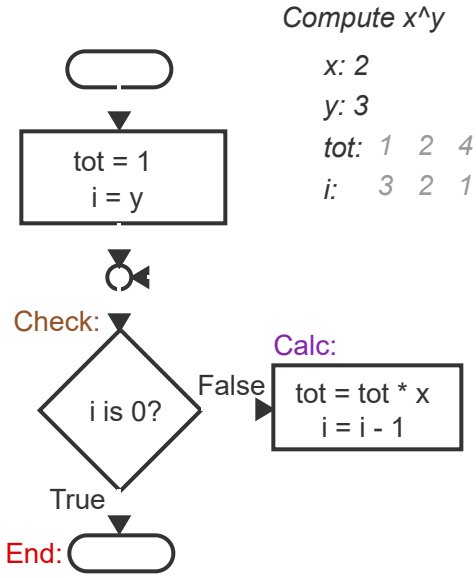
3) If age is 25, the last processing box will compute price = price - _____ .
   - ○ 0
   - ○ 15

Flowcharting before programming

Some assembly-language programmers begin by creating a flowchart, and then implement the flowchart as an assembly p
the assembly program uses ***assembly pseudocode***: informal code that is easy to read, and can be straightforwardly conver
particular assembly language.

PARTICIPATION ACTIVITY 6.1.3: Creating a flowchart first, then implementing the flowchart as an assembly program (pseudocode).

Start 2x speed




```
        tot = 1
        i = y
Check:  branch if i is 0 to End
Calc:   tot = tot * x
        i = i - 1
        jump to Check
End:
```

PARTICIPATION ACTIVITY 6.1.4: Implementing a flowchart as an assembly program.

Refer to the flowchart above.

1) The decision box is labeled: ____ .

Check Show answer

2) At the decision box, if i is greater than 0, the assembly program goes to label: ____ .

Check Show answer

3) At the decision box, if i is 0, the assembly program goes to label: _____ .

Check Show answer

4) For y = 3, how many times will the "jump" instruction execute?

Check Show answer

Provide feedback on this section