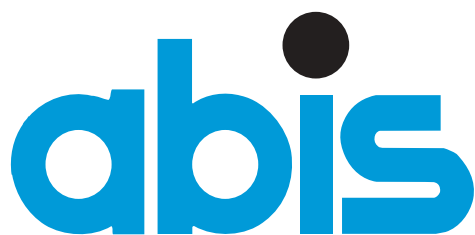


# Self-test Programming Fundamentals

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# INTRODUCTION TO THE SELF-TEST PROGRAMMING FUNDAMENTALS

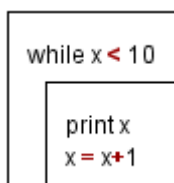
This test consists of multiple-choice questions. With some questions, the correct answer contains several alternatives (as indicated). Write down your answer(s) and compare with the given solutions.

# QUESTIONS SELF-TEST PROGRAMMING FUNDAMENTALS

1. Which of the following are object oriented languages? *[3 answers]*
  - ☐ [a] Java
  - ☐ [b] COBOL
  - ☐ [c] C#
  - ☐ [d] C++
  - ☐ [e] C
2. In programming, a series of logically ordered steps that lead to a required result is called
  - ☐ (a) a compiler
  - ☐ (b) a program
  - ☐ (c) a data structure
  - ☐ (d) an algorithm
3. What kind of languages are COBOL, Java, C# and Basic?
  - ☐ (a) 1GL
  - ☐ (b) 2GL
  - ☐ (c) 3GL
  - ☐ (d) 4GL
4. Which is a typical language for programming inside Web pages?
  - ☐ (a) JavaScript
  - ☐ (b) HTML
  - ☐ (c) COBOL
  - ☐ (d) XML
5. Which of the following converts source code into machine code at each runtime?
  - ☐ (a) linker
  - ☐ (b) compiler
  - ☐ (c) interpreter
  - ☐ (d) object encoder

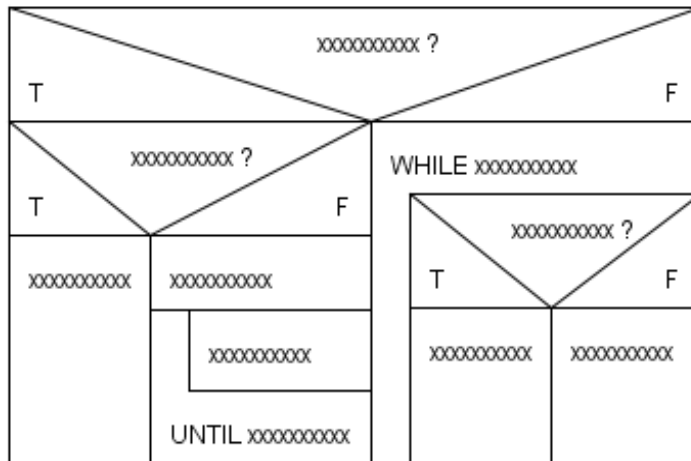
6. Which of the following commonly happens to variables (in most languages)? *[3 answers]*
- ☐ [a] declaration
  - ☐ [b] assignment
  - ☐ [c] expansion
  - ☐ [d] initialization
  - ☐ [e] derivation
7. Assuming that + and \* are arithmetic operators (addition and multiplication), to what does the expression  $2 + 4 * 5 + 1$  evaluate?
- ☐ (a) 36
  - ☐ (b) 31
  - ☐ (c) 26
  - ☐ (d) 23
8. Assuming that = and / are the assignment and division operators, what will be the outcome of the following code in most programming languages:
- ```
x = 3
y = 7
z = x / (y-7)
```
- ☐ (a) runtime error
  - ☐ (b) syntax error
  - ☐ (c) logic error
  - ☐ (d) compiler error
9. Today is Tuesday. It is raining.  
Which of the following is True? *[2 answers]*
- ☐ [a] Raining OR Tuesday
  - ☐ [b] Raining XOR Tuesday
  - ☐ [c] Raining AND Tuesday
  - ☐ [d] NOT (Raining OR Tuesday)

10. Which is a typical kind of variable for keeping an ordered set of values in memory, that can be referenced as e.g.  $A[3]$ ,  $A[n+1]$  etc. ?
- ☐ (a) file
  - ☐ (b) array
  - ☐ (c) string
  - ☐ (d) container
11. AND, OR and NOT are logical operators. What data type is expected for their operands?
- ☐ (a) integer
  - ☐ (b) boolean
  - ☐ (c) decimal
  - ☐ (d) character
12. In many programming languages, 'otherwise' and 'else' are part of which building block?
- ☐ (a) loop
  - ☐ (b) counter
  - ☐ (c) selection
  - ☐ (d) list structure
13. What building block does the following Nassi-Shneiderman diagram represent?



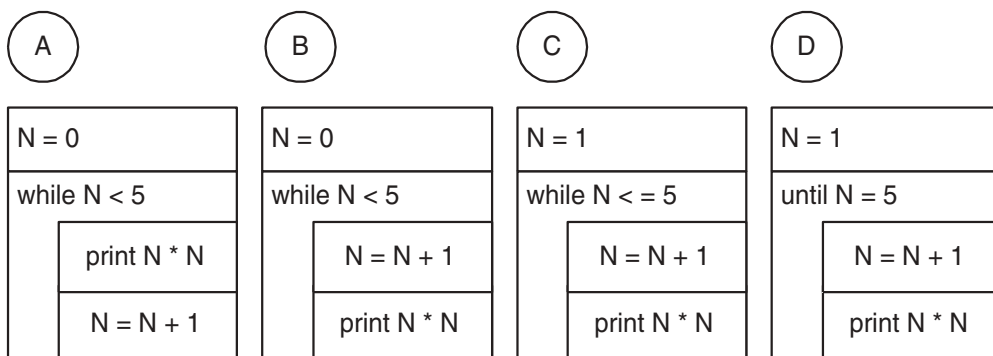
- ☐ (a) sequence
- ☐ (b) selection
- ☐ (c) iteration
- ☐ (d) function

14. Structurally the following is a typical example of ...



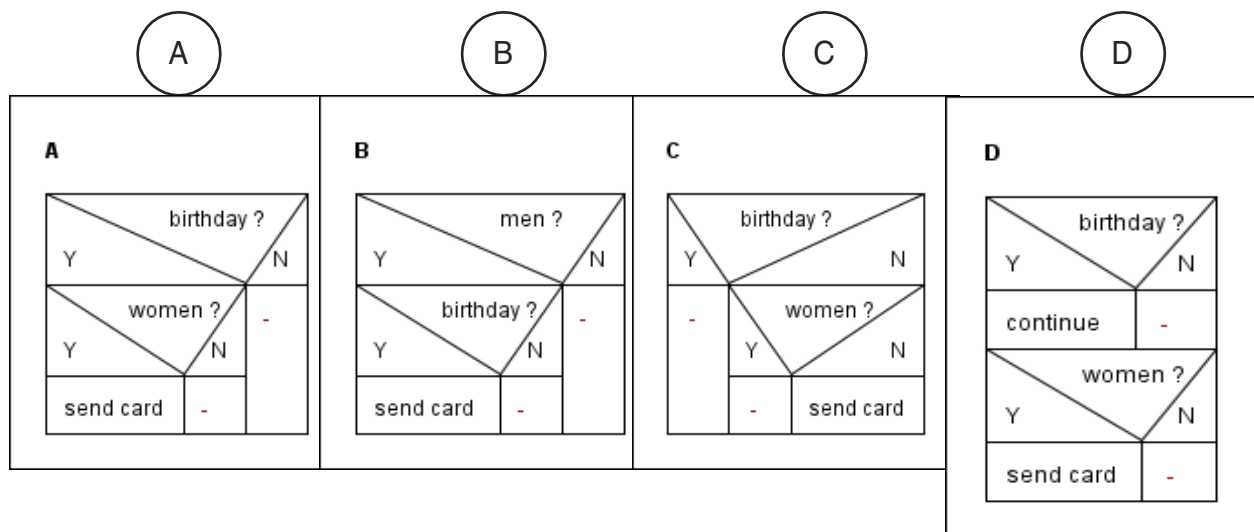
- ☐ (a) tracing
- ☐ (b) recursion
- ☐ (c) hatching
- ☐ (d) nesting

15. Which is a working solution for producing the following output: 1 4 9 16 25 ?

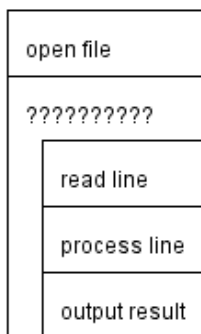


- ☐ (a) A
- ☐ (b) B
- ☐ (c) C
- ☐ (d) D

16. Assume a random population. You want to send a birthday card to all women that have a birthday next week. Which is a correct and probably most efficient algorithm?



- ☐ (a) A  
☐ (b) B  
☐ (c) C  
☐ (d) D
17. The following is a typical pattern for reading and processing data from a sequential file. What is hidden behind the question marks? *[2 possible answers, independent from each other]*



- ☐ [a] while not EOF  
☐ [b] if count = end  
☐ [c] until EOF  
☐ [d] count until end

18. (In most programming languages), which statement would be used in the definition of a function, to indicate the resulting value when this function is called?
- ☐ (a) result = x
  - ☐ (b) reply x
  - ☐ (c) send x
  - ☐ (d) return x
19. 'Tracing', 'stepping' and 'breakpoint' are typical terms belonging to which programming development aspect?
- ☐ (a) debugging
  - ☐ (b) compilation
  - ☐ (c) version control
  - ☐ (d) project planning
20. Which term describes the mechanism of a function calling itself ?
- ☐ (a) encapsulation
  - ☐ (b) inheritance
  - ☐ (c) recursion
  - ☐ (d) polymorphism



# EVALUATION.

Here are the correct answers to all questions:

1. a c d
2. d
3. c
4. a
5. c
6. a b d
7. d
8. a
9. a c
10. b
11. b
12. c
13. c
14. d
15. b
16. a
17. a c
18. d
19. a
20. c

Give 1 point per correctly answered question, also for questions with multiple correct answers.

If your score is more than 80%, you do not have to follow the course [Programming fundamentals](#).

When you have a score between 50% and 80%, following the course [Programming fundamentals](#) can improve your knowledge.

When your score is less than 50%, we strongly suggest you follow the course [Programming fundamentals](#).