

Multiple-choice questions:

1. What is a variable in programming?

- A) A type of programming language
- B) A container that stores data**
- C) A function that executes code
- D) A method for debugging

2. Which of the following is NOT a type of variable mentioned in the document?

- A) Int
- B) Boolean
- C) Array**
- D) String

3. What is the purpose of variables in programming?

- A) To store static data
- B) To handle input, output, and data manipulation**
- C) To create user interfaces
- D) To compile code

4. Which variable type is used for true/false values?

- A) Int
- B) Boolean**
- C) Float
- D) Character

5. What is an example of using a variable in a program?

- A) Creating a loop
- B) Defining a function
- C) Using 'Your name is ' + name**
- D) Declaring a constant

Open-ended questions:

1. What is a variable in programming and why is it essential?

A variable in programming is a container that stores data used in programs. It is essential for handling input, output, and data manipulation, allowing programs to operate dynamically based on user input and other data.

2. List and describe the different types of variables.

Int, which represents whole numbers without decimals; Boolean, which holds true/false values for logic control; Float/Double, which are decimal numbers with varying precision; String, which is a sequence of characters for text data; and Character, which represents a single character, such as key inputs.

3. Explain the importance of variables in programming.

Variables are important in programming because they store dynamic data and user input, enable computation and logic decisions, and allow for reusability and flexibility in code. This makes it easier to write efficient and adaptable programs.

4. Provide an example of how variables can be used in programming.

An example of how variables can be used in programming is the expression 'Your name is ' + name, which creates personalized output by concatenating a string with the value stored in the variable 'name'. Variables can also be used in arithmetic operations and condition checks.