

DIT 409

KCA University

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Java programming assignment

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23/02403

1. Explain the difference between primitive and reference data types.
  - Primitive data type store the actual value directly making them store memory efficient whereas reference data types only store the memory.
2. Define the scope of a variable(hint : local and global).
  - A local variable is one that is declared inside a specific block of code, like within a function. Its only accessible within the block, whereas a global variable is declared outside of any block/ function.
3. Why is initialization of variable required.
  - Initialization is required because it sets aside memory space for the variable and assign an initial value to it.
4. Differentiate between static, instance and local variable.
  - A static variable is a variable that belongs to the class itself. An instance variable is a variable that belongs to instances of a class whereas a local is the one that is declared inside a block of code
5. Differentiate between widening casting and narrowing casting.
  - Widening cast occurs when converting a Data type with a smaller size to a Data type with a larger size whereas narrowing casting occurs when converting a Data type with a larger size to a smaller size.
6. The following table shows data type, its size, default value and the range. Filling in the missing values.
  - boolean: It's 1 bit in size, default values are true or false. Range is true or false.
  - char: It's 2 bytes in size, default value is \uffff ,with a range from '\u0000' to '\uffff'.
  - byte: It's 1 byte in size, default value is 0, with a range of \_128 to 127.

- short: It's 2 bytes in size, default value is 0, with a range from -32768 to 32767.
  - int: It's 4 bytes in size , default value is 0, with a range of -2,147,483, 648 to 2,147,483, 647
  - long: It's 8 bytes in size, default value is 0.0, with a range of 9,223,372,036,854,775,808 to 9,223,372,036,854,775,807
  - float: It's 4 bytes in size, default value is 0.0f, with a range of Approximately  $\pm 3.4E+38$
  - double: It's 8 bytes in size, default value is 0.0, with a range of Approximately  $\pm 1.8E+308$ .
7. Define class as used in oops This is the blueprint from which objects are created.
  8. Explain the importance of classes in java programming.
    - You can organize your code into logical units, making it easier to manage and maintain.
    - Class promote code reusability, encapsulation on which is a key concept in object oriented programming.
    - Class help in structuring your code in a way that models real world entities, making your program more organized and efficient.