

Programming Java I



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Assignment 1

CHAPTER 1

Multiple Choice

1. Cpu
2. Bits
3. Address
4. Secondary Storage
5. A Stream Of Binary Numbers
6. Applet
7. Key Words
8. Operators
9. Punctuation
10. Programmer-Defined Names
11. Syntax
12. Variable
13. Source Code
14. Java Virtual Machine

Short Answer

1. Main memory, or RAM, is volatile, which means its contents are erased when power is removed from the computer. Secondary memory, such as a disk, does not lose its contents when power is removed from the computer.
2. RAM or Main memory is volatile
3. The operating system is used to manage system resources and give application software an environment in which it can run. It acts as an intermediary between the user, the



software and the computer hardware. Application software is the front-end software that users handle. Common applications, such as Microsoft Office, Google Chrome and Skype are generally installed by the user and are required to undertake particular tasks.

4. High-level language programs must be translated into machine language before they can be executed because machine language instructions are encoded as binary numbers that are meant to be used by a machine, not read or written by people. High-level languages use a syntax that is closer to human language.
5. Since we write in letters and our processors use ASCII code to turn it into binary, it would take us years if not decades to complete the work. higher level languages offer a simplified way to do what machine language would take ages to accomplish
6. A Java source file is a file (with the .class filename extension) containing Java bytecode that can be executed on the Java Virtual Machine (JVM).
7. Syntax error occurs when the code isn't formatted or typed correctly. whereas a logical error is a mistake in program's source code that results in unexpected or incorrect behavior
8. An algorithm is a set of well-defined steps for performing a task or solving a problem
9. A compiler is a program that translates source code into an executable form.
10. An application is a stand-alone program that runs on your computer
An applet refers to a small application that is designed to be transmitted over the Internet from a Web server, and then executed in a Web browser



CHAPTER 2

Multiple Choice

1. Semicolon
2. Literals
3. Braces { }
4. B and C
5. A, C, D.
6. Unary
7. Final
8. /*
9. //
10. */
11. nextLine
12. nextDouble
13. JOptionPane
14. Widening conversion
15. Cast
16. True
17. True
18. False
19. True
20. False
21. False

Short Answer

1. Multi-line style comment.
2. Single-line style comment.



3. Self-documenting program means that we get an understanding of what the program is doing just reading by its code.
4. Case sensitive means that the uppercase letters and the lowercase letters are totally different from each other.
5. The print and println method are members of the out object. The out object is the member of the System class. The System class is the part of the java API.
6. A variable tells the Java compiler the variable's name and the type of data it will hold. That the particular value will hold certain amount of memory to store values. A variable is the name of a location where the data is stored when a program executes.
7. A variable is not a name for the data itself but for a location in memory that can hold data. It should always choose names for you variables that give an indication of what they are used for. "x", gives no clue as to what the variable's purpose is.
8. Datatype is a set of values and every variable has a datatype which represents the type of data in that particular variable. e.g. for natural numbers and integers int datatype is used.
 - a. For decimal numbers, we use float datatype.
 - b. For single characters, we use char datatype.
 - c. For alphanumeric characters, we use string datatype.
 - d. Bool datatype is used to get answer yes or no, 0 or 1.
9. A variable with a datatype can be assigned a value and that is stored in this variable. It can be assigned at the time of initialization.
 - a. Initialization is the process to declare the variable with particular datatype.
10. The comment start with // is single line comment.
 - a. The comment start with /* is multi-line comment and it is end with */.
11. Programming style refers to the way a programmer uses spaces, indentations, blank lines, and punctuation characters to visually arrange a program's source code.

Programming style should be consistent because an inconsistent programming style can create confusion for a person reading the code.



- 12.** It is more readable and meaningful if we use PI than a simple value. If we use constant value then we do not need to search through the program for statements that uses the value.
- 13.** javadoc SalesAverage.java
- 14.** The result will be an int.



Assignment 2

CHAPTER 3

Multiple Choice and True/False

1. Decision Structure
2. Boolean Expression
3. Relational Operators
4. Logical Operators
5. Null Statement
6. Braces {}
7. Flag
8. 'A' Is Less Than 'B'
9. Nested If Statement
10. The Closest Previous If Clause That Doesn't Already Have Its Own Else Clause
11. &&
12. The Equals Method
13. Three
14. Default
15. System.Out.Printf
16. False
17. True
18. True
19. True
20. False



21. True

Short Answer

1. An activity is performed just when a specific condition is valid.
2. A lost semicolon can cause an if explanation to work mistakenly on the grounds that the if proclamation isn't finished without its restrictively executed articulation.
3. it is important to indent every one of the announcements inside an arrangement of supports with the goal that the compiler can realize what and when to be gathered. An opening props demonstrates that another procedure has made and shutting supports shows that the procedure is getting ended by then.
4. It thinks about if two references are to a similar protest
5. When the banner variable is set to false, it demonstrates the condition does not exist. At the point when the banner is set to genuine, it implies the condition exists. The banner variable ought to be valid.
6. There is a possibility that the program won't order since Java is searching for different elements that might be conceivable
7. The && administrator takes two boolean articulations as operands and makes a boolean articulation that is genuine just when both subexpressions are valid. It additionally performs cut off. In the event that the outflow of the left of the && administrator is false, the articulation on the correct side won't be checked.
8. The || administrator takes two boolean articulations as operands and makes a boolean articulation that is genuine when both of the subexpressions is valid.
9. The social administrators depicts the relationship where one side is more noteworthy.
10. Constructor of any class gets any executed just when a question of that class is being made either progressively utilizing new or locally. Constructor in Java is an



exceptional sort of strategy that is utilized to introduce the protest. Constructors are summoned at the season of protest creation.



CHAPTER 4

Multiple Choice and True/False

1. 5
2. 6
3. Postfix
4. Iteration
5. Loop Control Variable
6. Pretest
7. Posttest
8. Pretest
9. Infinite
10. Do-While
11. Initialization Expression
12. Accumulator
13. Sentinel
14. Printwriter
15. File And Scanner
16. Close The File
17. Printwriter
18. Scanner
19. True
20. False
21. False
22. False
23. False
24. True
25. True
26. False

Short Answer

1. In postfix mode the administrator is put after the operand. In prefix mode the administrator is set before the variable operand. Postfix mode makes the augmentation or decrement operation occur after the estimation of the variable is utilized as a part of the articulation. Prefix mode makes the addition or decrement happen first.



2. A pretest circle tests its condition before every emphasis. A posttest circle tests its condition after every cycle. A posttest circle will dependably execute in any event once.
3. A pretest circle tests its test articulation before every emphasis. A posttest circle tests its test articulation after every cycle.
4. Because the circle executes them just under the condition that its test articulation is valid.
5. The while circle is a pretest circle and the do-while circle is a posttest circle.
6. The while circle.
7. The do-while circle.
8. The for circle.
9. An gatherer is utilized to keep a running aggregate of numbers. In a circle, an esteem is generally added to the present estimation of the aggregator. On the off chance that it isn't legitimately introduced, it won't contain the right aggregate.
10. A circle that has no chance to get of ceasing. Here is an illustration:

```
int x = 1;
while (x > 0)
System.out.println("Hello");
```

11. There are numerous conceivable cases. A program that requests that the client enter a business' day by day deals for various days, and after that shows the aggregate deals is one illustration.
12. The circle ends after the client has entered a particular esteem.



Assignment 3

CHAPTER 5

Multiple Choice and True/False

1. Void
2. Header
3. Curly Braces
4. Method Modifiers, Method Return Type, Method Name, Parameter Declarations
5. Argument
6. Parameter
7. @Param
8. Return
9. @Return
10. False
11. True
12. False
13. False
14. False
15. True
16. True
17. False
18. False
19. False
20. True

Short Answer

1. A large complex problem is broken down into smaller manageable pieces. Each smaller piece of the problem is then solved.



2. A void method, which does not return a value, uses the key word void as its return type in the method header. A value-returning method will use int, double, boolean, or any other valid data type in its header.
3. An argument is a value that is passed into a method when the method is called. A parameter variable is a variable that is declared in the method header, and receives the value of an argument when the method is called.
4. They are declared inside the parentheses in the method header. This is often referred to as a parameter list.
5. When an argument is passed to a method, only a copy of the argument is passed. The method cannot access the actual argument.
6. A method's local variables exist only while the method is executing. This is known as the lifetime of a local variable. When the method begins, its local variables and its parameter variables are created in memory, and when the method ends, the local variables and parameter variables are destroyed. This means that any value stored in a local variable is lost between calls to the method in which the variable is declared



Assignment 4

CHAPTER 6

Multiple Choice and True/False

1. Class
2. Blueprint
3. Architect
4. Field
5. New
6. Accessor
7. Mutator
8. Stale
9. Constructor
10. Shadows
11. default constructor
12. their parameter lists
13. binding
14. both b and c
15. true
16. true
17. false
18. false
19. false

Short Answer

1. A class is an accumulation of programming articulations that indicate the characteristics and techniques that a specific kind of question may have. You should



think about a class as a "diagram" that depicts a question. A case of a class is a real protest that exists in memory.

2. Classes are undifferentiated from the outline.
3. An accessor technique is a strategy that gets an incentive from a class' field yet does not transform it. A mutator technique is a strategy that stores an incentive in a field or in some other way changes the estimation of a field.
4. When a question's fields are avoided outside code, the fields are shielded from unplanned defilement. It is smart thought to make the greater part of a class' fields private and to give access to those fields through techniques.
5. Methods that are individuals from a similar class.
6. It makes a question (an example of a class) in memory.
7. It looks in the present envelope or registry for the document Customer.class. In the event that that document does not exist, the compiler looks for the record Customer.java and assembles it. This makes the document Customer.class, which influences the Customer to class accessible. A similar method is taken after when the compiler scans for the Account class.
8. Because they execute when a protest is made.
9. If you don't compose a constructor for a class, Java naturally gives one.
10. A no-arg constructor.



11. By their marks, which incorporates the strategy name and the information sorts of the technique parameters, in the request that they show up.

CHAPTER 7

Multiple Choice and True/False

1. Size Declaration
2. Subscript
3. 0
4. 1 Less Than The Number Of Elements
5. When The Program Runs
6. Length
7. Sequential Search
8. Binary Search
9. $N/2$
10. Braces
11. Add
12. Remove
13. Size
14. True
15. False
16. True
17. True
18. True
19. True
20. True
21. False
22. True



23. True

Short Answer

1. The size declarator is used in a definition of an array to indicate the number of elements the array will have. A subscript is used to access a specific element in an array.
2. 10 elements
Subscript of the 1st element is zero
Subscript of the last element is 9
The array used 40 bytes of memory
3. Because, with the array alone the function has no way of determining the number of elements it has.
4. `int values[5] = { 4, 7, 6, 8, 2 };`
`cout << values[4] << endl; 2`
`cout << (values[2] + values[3]) << endl; 14`
`cout << ++values[1] << endl; 8`
5. By providing an initialization list. The array is sized to hold the number of values in the list.
6. `int numbers[5] = { 1, 2, 3 };`
What value is stored in `numbers[2]`? 3
What value is stored in `numbers[4]`? 0, its value is not initialized
7. Because an array name without brackets and a subscript represents the array's beginning memory address. The statement shown attempts to assign the address of



array2 to array1, which is not permitted.

8. `double sales[8][10];`

How many rows does the array have? 8 Rows

How many columns does the array have? 10 columns

How many elements does the array have? 80 elements

`Sales[7][9] = 53.1;` stores double in the last column of the last row in the array

