## Lecture 4-string in java

1. What is the correct statement about Strings in Java?

 A) Strings are mutable

 B) Strings are primitive data types

 C) Strings are immutable

 D) Strings can be modified directly

2. Which of the following correctly creates a new String object?

 A) String text = "Hello World!";

 B) String text = new String("Hello World!");

 C) Both A and B

 D) Neither A nor B

3. What is the output of the following code?

 ```java

 String text1 = "Hello World!";

 String text2 = "Hello World!";

 System.out.println(text1 == text2);

 ```

 A) true

 B) false

 C) Compilation error

 D) Runtime error

4. Which method is used to concatenate Strings in Java?

 A) append()

 B) concat()

 C) join()

 D) merge()

## String Methods and Operations

5. Which method returns the number of characters in a String?

 A) size()

 B) length()

 C) count()

 D) characters()

6. What does the charAt() method do?

 A) Returns the character at a specified index

 B) Checks if a character exists in the String

 C) Counts the occurrences of a character

 D) Removes a character from the String

7. Which method is used to split a String into an array of substrings?

 A) divide()

 B) cut()

 C) split()

 D) separate()

8. What does the indexOf() method return if the specified character is not found in the String?

 A) 0

 B) -1

 C) null

 D) Throws an exception

## Regular Expressions

9. What does the + symbol mean in a regular expression?

 A) Zero or more occurrences

 B) One or more occurrences

 C) Exactly one occurrence

 D) Zero or one occurrence

10. Which of the following regular expressions matches one or more spaces?

 A) " "

 B) " \*"

 C) " +"

 D) " ?"

11. What does the character class [a-f] match?

 A) Any lowercase letter

 B) Any uppercase letter

 C) Any letter between a and f, inclusive

 D) Any digit between a and f

12. Which regular expression negates a character set?

 A) [!a-z]

 B) [~a-z]

 C) [-a-z]

 D) [^a-z]

## String Manipulation and Algorithms

13. What is the purpose of the Flesch score?

 A) To measure text complexity

 B) To count the number of words in a text

 C) To identify grammatical errors

 D) To calculate the average word length

14. Which of the following is NOT considered in calculating the Flesch score?

 A) Number of words per sentence

 B) Number of syllables per word

 C) Number of punctuation marks

 D) Both A and B are considered

15. How can you iterate through each character in a String?

 A) Using a for-each loop with toCharArray()

 B) Using charAt() with a traditional for loop

 C) Using a while loop with substring()

 D) Both A and B

16. What is the purpose of the split() method in String manipulation?

 A) To join two strings

 B) To remove spaces from a string

 C) To divide a string into an array of substrings

 D) To replace characters in a string

## Java-specific Concepts

17. In Java, where are String literals stored?

 A) Stack

 B) Heap

 C) String Pool

 D) Method Area

18. What is the difference between == and equals() when comparing Strings?

 A) They are interchangeable for Strings

 B) == compares references, equals() compares content

 C) == compares content, equals() compares references

 D) There is no difference

19. Which of the following is true about String concatenation in Java?

 A) It always creates a new String object

 B) It modifies the original String

 C) It is more efficient than using StringBuilder

 D) It doesn't work with the + operator

20. What is the main advantage of using StringBuilder over String for manipulating strings?

 A) StringBuilder is immutable

 B) StringBuilder is more memory-efficient for multiple modifications

 C) StringBuilder has more built-in methods

 D) StringBuilder is thread-safe