

STRING MANIPULATION :

1. What is the difference between the string methods `find()` and `index()` in Python? (2 marks)

To answer this question, the student should explain the difference in functionality between the string methods `find()` and `index()` in Python. `find()` returns the index of the first occurrence of the specified substring in the string, or -1 if the substring is not found. `index()` also returns the index of the first occurrence of the specified substring in the string, but raises a `ValueError` if the substring is not found.

2. How can you check if a given string is a palindrome in Python? (2 marks)

To answer this question, the student should provide an algorithm or code snippet that checks if a given string is a palindrome in Python. One way to do this is to reverse the string and compare it to the original. If they are equal, the string is a palindrome.

3. How can you convert a string to uppercase or lowercase in Python? (2 marks)

To answer this question, the student should explain how to convert a string to uppercase or lowercase in Python. One way to do this is by using the string methods `upper()` and `lower()`. For example, `string.upper()` returns the string in uppercase and `string.lower()` returns the string in lowercase.

4. How can you remove whitespace characters from a string in Python? (2 marks)

To answer this question, the student should explain how to remove whitespace characters from a string in Python. One way to do this is by using the string method `strip()` which removes any whitespace characters from the beginning and end of the string. Another way is using `replace()` method by replacing whitespaces with empty string.

5. How can you split a string into a list of substrings using a specified delimiter in Python? (2 marks)

To answer this question, the student should provide an example of how to split a string into a list of substrings using a specified delimiter in Python. One way to do this is by using the string method `split()`. For example, `string.split(delimiter)` returns a list of substrings that are separated by the specified delimiter.

6. How can you join a list of strings into a single string using a specified delimiter in Python? (2 marks)

To answer this question, the student should provide an example of how to join a list of strings into a single string using a specified delimiter in Python. One way to do this is by using the string method `join()`. For example, `delimiter.join(list_of_strings)` returns a single string with the elements of the list joined by the specified delimiter.

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7. How can you check if a given substring is present in a string in Python? (2 marks)

To answer this question, the student should explain how to check if a given substring is present in a string in Python. One way to do this is by using the `in` keyword. For example, `substring in string` returns `True` if the substring is present in the string and `False` otherwise. Another way is by using `find()` method.

8. How can you replace all occurrences of a substring in a string with a new string in Python? (2 marks)

To answer this question, the student should provide an example of how to replace all occurrences of a substring in a string with a new string in Python. One way to do this is by using the string method `replace()`. For example, `string.replace(old_substring, new_substring)` returns a new string with all occurrences of the old substring replaced by the new substring.

9. How can you remove all special characters from a string in Python? (2 marks)

To answer this question, the student should provide an example of how to remove all special characters from a string in Python. One way to do this is by using a regular expression to match and remove all non-alphanumeric characters. Another way is to use `isalnum()` method to check each character and remove it if it is not alphanumeric.

10. How can you count the number of occurrences of a substring in a string in Python? (2 marks)

To answer this question, the student should provide an example of how to count the number of occurrences of a substring in a string in Python. One way to do this is by using the string method `count()`. For example, `string.count(substring)` returns the number of occurrences of the substring in the string.

STRING MANIPULATION :

solutions

1. What is the difference between the string methods `find()` and `index()` in Python?
The `find()` method returns the index of the first occurrence of the specified substring in the string, or -1 if the substring is not found. The `index()` method also returns the index of the first occurrence of the specified substring in the string, but raises a `ValueError` if the substring is not found.

2. How can you check if a given string is a palindrome in Python?

```
def is_palindrome(string):  
    return string == string[::-1]
```

3. How can you convert a string to uppercase or lowercase in Python?

```
string = "Hello World!"  
string_upper = string.upper() # "HELLO WORLD!"  
string_lower = string.lower() # "hello world!"
```

4. How can you remove whitespace characters from a string in Python?

```
string = "  Hello World!  "  
string_strip = string.strip() # "Hello World!"  
string_replace = string.replace(" ", "") # "HelloWorld!"
```

5. How can you split a string into a list of substrings using a specified delimiter in Python?

```
string = "Hello, World!"  
string_list = string.split(",") # ['Hello', ' World!']
```

6. How can you join a list of strings into a single string using a specified delimiter in Python?

```
string_list = ['Hello', ' World!']  
string = ",".join(string_list) # "Hello, World!"
```

7. How can you check if a given substring is present in a string in Python?

```
string = "Hello World!"  
substring = "World"  
if substring in string:  
    print("substring is present in string")  
else:  
    print("substring is not present in string")
```

8. How can you replace all occurrences of a substring in a string with a new string in Python?

```
string = "Hello World! Hello World!"  
new_string = string.replace("Hello", "Goodbye") # "Goodbye World! Goodbye World!"
```

9. How can you remove all special characters from a string in Python?

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```
import re
string = "Hello World!@#"
string = re.sub(r'^[A-Za-z0-9]+', '', string) # "HelloWorld"
```

10. How can you count the number of occurrences of a substring in a string in Python?

```
string = "Hello World! Hello World!"
substring = "Hello"
count = string.count(substring) # 2
```

Please note that the above answers are provided according to the instructions provided, but they may not be the only way to accomplish the task, as there are multiple ways to solve a problem in programming.