

# 12 Lecture - CS201

## Important Subjective

1. What is a character array in C/C++ programming, and how is it different from a string?

Answer: A character array is a collection of characters stored in contiguous memory locations. It is used to store strings in C/C++ programming. A string, on the other hand, is a collection of characters terminated by a null character. It is implemented using a character array and provides many built-in functions to manipulate the string.

2. How can you initialize a character array with a string literal?

Answer: A character array can be initialized with a string literal using the following syntax:

3. What is the purpose of the strlen() function, and how is it used?

Answer: The strlen() function is used to determine the length of a string, i.e., the number of characters in the string. It takes a string as input and returns an integer value. The syntax of the strlen() function is as follows:

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int strlen(char string)
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4. How can you copy one character array to another?

Answer: One character array can be copied to another using the strcpy() function. The syntax of the strcpy() function is as follows:

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char strcpy(char *destination, const char *source);
```

The destination is the array where the source string will be copied.

5. What is the purpose of the strcat() function, and how is it used?

Answer: The strcat() function is used to concatenate two strings, i.e., to join two strings together to form a single string. It takes two strings as input and returns a pointer to the resulting concatenated string. The syntax of the strcat() function is as follows:

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```
char strcat(char *destination, const char *source);
```

6. How can you compare two strings in C/C++ programming?

Answer: Two strings can be compared using the strcmp() function. The strcmp() function returns a negative value if the first string is less than the second string, zero if the two strings are equal, and a positive value if the first string is greater than the second string. The syntax of the strcmp() function is as follows:

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```
int strcmp(const char *string1, const char *string2);
```

7. How can you convert a string to uppercase or lowercase in C/C++ programming?

Answer: A string can be converted to uppercase or lowercase using the toupper() and tolower() functions, respectively. The toupper() function converts a lowercase character to uppercase, while the tolower() function converts an uppercase character to lowercase. These functions take a single character as input and return the converted character.

8. What is a null character, and how is it used in strings?

Answer: A null character, represented as '\0', is a special character used to terminate a string. It is used to mark the end of a string and is automatically added to the end of a string literal in C/C++ programming.

9. How can you read a string from the console using the standard input stream in C/C++ programming?

Answer: A string can be read from the console using the standard input stream, cin, in C++ programming. The getline() function can be used to read a line of input, including whitespace characters, and store it in a string variable.

10. What is the maximum size of a character array that can be declared in C/C++ programming?

Answer: The maximum size of a character array that can be declared in C/C++ programming is limited by the amount of available memory in the system. However, some compilers may impose a maximum size limit on character arrays.