what is format specfiers
Format specifiers in C are special sequences used within input/output functions like printf() and scanf() to indicate the type and format of data being processed. They begin with a percent sign (%) followed by a character that denotes the data type. [1, 2]
Here are some common format specifiers and their uses:

- %d or %i: For signed integers.
- %u: For unsigned integers.
- %f: For floating-point numbers (float).
- %lf: For double-precision floating-point numbers (double).
- %c: For single characters.
- %s: For strings (character arrays).
- %x or %X: For hexadecimal representation of integers (lowercase and uppercase, respectively).
- %o: For octal representation of integers.
- %p: For memory addresses (pointers).

Example:

```
#include <stdio.h>

int main() {
    int integerVar = 42;
    float floatVar = 3.14159;
    char charVar = 'A';
    char stringVar[] = "Hello, C!";

    printf("Integer: %d\n", integerVar);
    printf("Float: %.2f\n", floatVar); // .2f specifies 2 decimal places
    printf("Character: %c\n", charVar);
    printf("String: %s\n", stringVar);
    printf("Hexadecimal: %x\n", integerVar);
    printf("Octal: %o\n", integerVar);

    return 0;
}
```

Explanation of the example:

- %d is used to print the integer value of integerVar.
- %.2f is used to print the float value of floatVar, specifically formatted to two decimal places.
- %c is used to print the character stored in charVar.
- %s is used to print the string stored in stringVar.
- %x is used to print the hexadecimal representation of integerVar.
- %o is used to print the octal representation of integerVar.

Output of the example:

```
Integer: 42
Float: 3.14
Character: A
String: Hello, C!
Hexadecimal: 2a
Octal: 52
```