C Language Tutorial

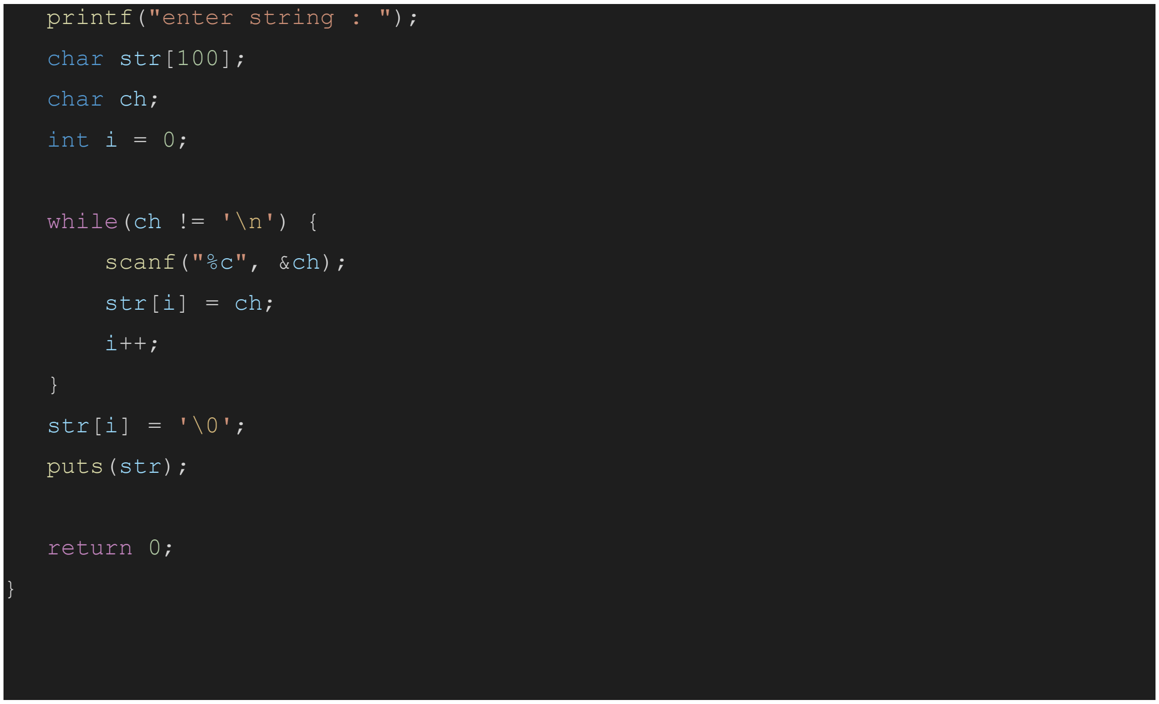
(Basic to Advanced)

Topics to be covered :
Installation + Setup
Chapter 1 - Variables, Data types + Input/Output
Chapter 2 - Instructions & Operators
Chapter 3 - Conditional Statements
Chapter 4 - Loop Control Statements
Chapter 5 - Functions & Recursion
Chapter 6 - Pointers
Chapter 7 - Arrays
Chapter 8 - Strings
Chapter 9 - Structures
Chapter 10 - File I/O
Chapter 11 - Dynamic Memory Allocation

Strings
(Chapter 8)

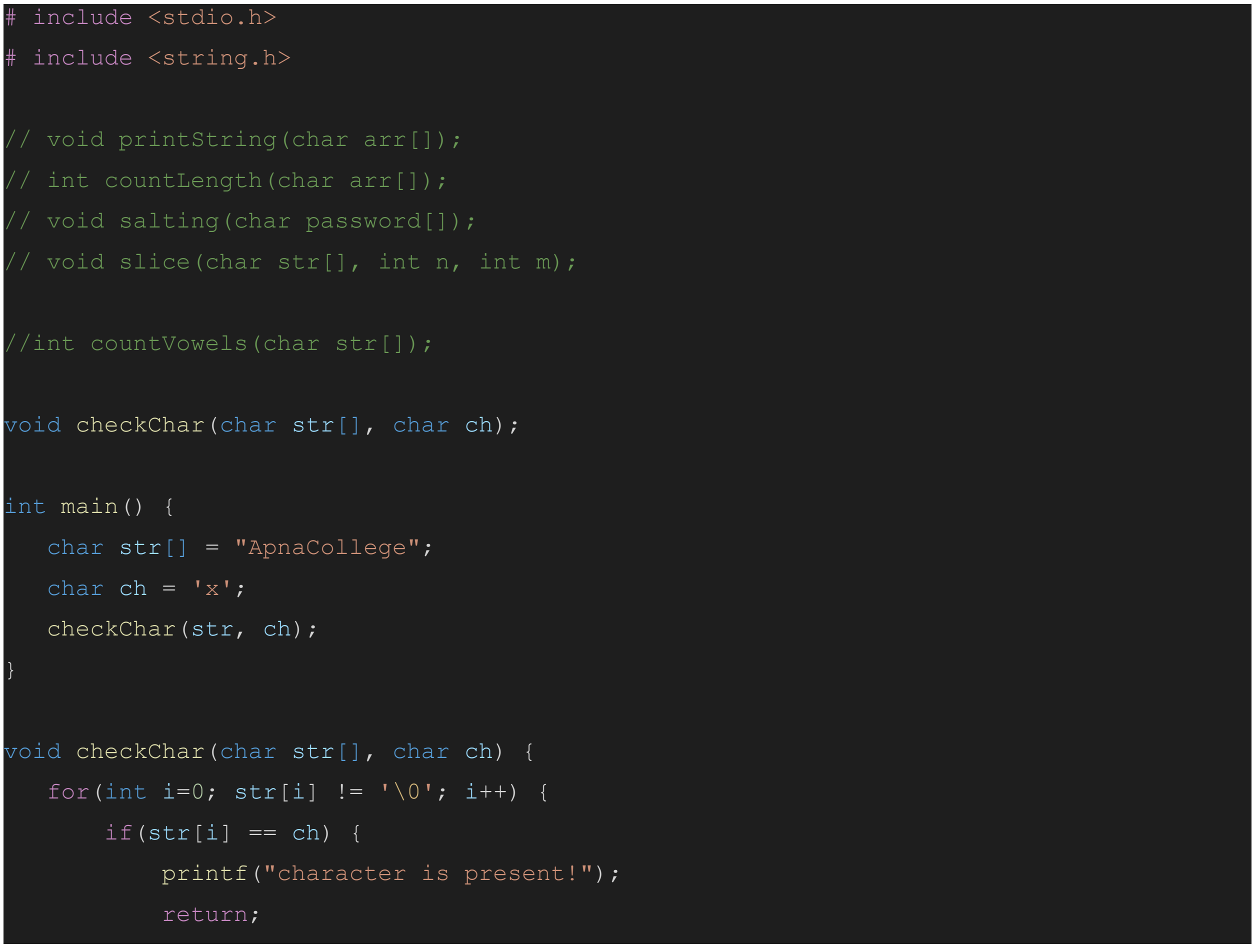
1. Strings

```c
# include <stdio.h>
# include <string.h>


int main() {
   //declaration
   char name[] = "Shradha Khapra";
   char course[] = {'a','p', 'n', 'a', ' ', 'c', 'o', 'l', 'l', 'e', 'g', 'e', '\0'};

   //printing string
   for(int i=0; name[i] != '\0'; i++) {
      printf("%c", name[i]);
   }
   printf("\n");

   //printing string with pointer
   for(char *ptr=name; *ptr != '\0'; ptr++) {
      printf("%c", *ptr);
}
printf("\n");

//printing using format specifier
printf("%s\n", name);

//input a string
char firstName[40];
printf("enter first name : ");
scanf("%s", firstName);
printf("you first name is %s\n", firstName);
 char fullName[40];
printf("enter full name : ");
scanf("%s", fullName);
printf("you first name is %s\n", fullName);

// gets & puts
char fullName[40];
printf("enter full name : ");
fgets(fullName, 40, stdin);
puts(fullName);

//Library Functions
char name[] = "Shradha";
int length = strlen(name);
printf("the length of name : %d\n", length);

char oldVal[] = "oldValue";
char newVal[50];
strcpy(newVal, oldVal);
puts(newVal);

char firstStr[50] = "Hello ";
char secStr[] = "World";
strcat(firstStr, secStr);
puts(firstStr);

char str1[] = "Apple";
char str2[] = "Banana";
printf("%d\n", strcmp(str1, str2));

//enter String using %c
```



```
    printf("enter string : ");
    char str[100];
    char ch;
    int i = 0;

    while(ch != '\n') {
        scanf("%c", &ch);
        str[i] = ch;
        i++;
    }
    str[i] = '\0';
    puts(str);

    return 0;
}
```

> Some more Qs



```
# include <stdio.h>
# include <string.h>

// void printString(char arr[]);
// int countLength(char arr[]);
// void salting(char password[]);
// void slice(char str[], int n, int m);

//int countVowels(char str[]);

void checkChar(char str[], char ch);

int main() {
   char str[] = "ApnaCollege";
   char ch = 'x';
   checkChar(str, ch);
}

void checkChar(char str[], char ch) {
   for(int i=0; str[i] != '\0'; i++) {
       if(str[i] == ch) {
           printf("character is present!");
           return;
       }
   }
    printf("character is NOT present:(");
}




// int countVowels(char str[]) {
//     int count = 0;

//     for(int i=0; str[i] != '\0'; i++) {
//         if(str[i] == 'a' || str[i] == 'e' || str[i] == 'i' ||
//            str[i] == 'o' || str[i] == 'u') {
//                count++;
//            }
//     }
//     return count;
// }




// void slice(char str[], int n, int m) { // n & m are valid value
//     char newStr[100];
//     int j = 0;
//     for(int i=n; i<=m; i++, j++) {
//         newStr[j] = str[i];
//     }
//     newStr[j] = '\0';
//     puts(newStr);
// }



// void salting(char password[]) {
//     char salt[] = "123";
//     char newPass[200];

//     strcpy(newPass, password); // newPass = "test"
//     strcat(newPass, salt); // newPass = "test" + "123";
//     puts(newPass);
// }


// int countLength(char arr[]) {
//     int count = 0;
//     for(int i=0; arr[i]!='\0'; i++) {
//         count++;
//     }
//     return count-1;
// }

// void printString(char arr[]) {
//     for(int i=0; arr[i] != '\0' ;i++) {
//         printf("%c", arr[i]);
//     }
//     printf("\n");
// }
```