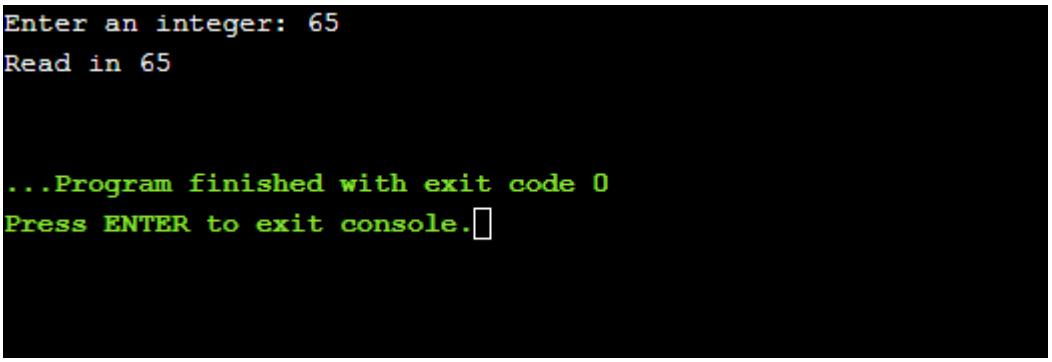
1. **Read from a terminal using scanf function and print using printf function.**

```
#include <stdio.h>

int main()
{
int x;
int args;

printf("Enter an integer: ");
if (( args = scanf("%d", &x)) == 0) {
printf("Error: not an integer\n");
} else {
printf("Read in %d\n", x);
}
return 0;
}
```

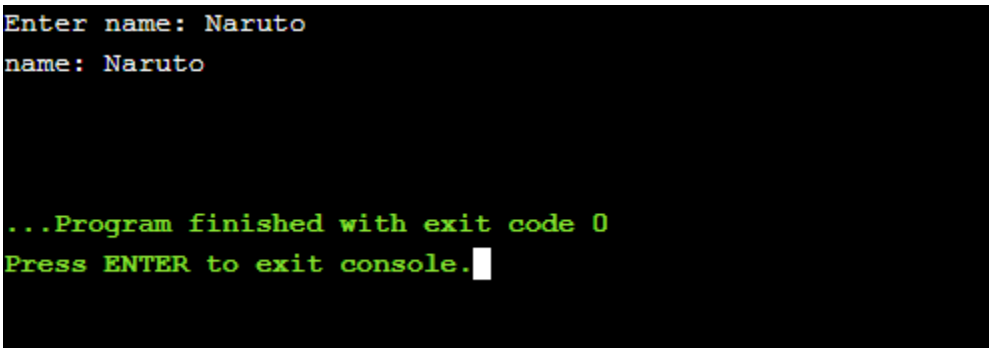
Output:



2. **Read a lines of text from a terminal using fgets function and print using puts function.**

```
#include<stdio.h>
int main(){
char name[20];
printf("Enter name: ");
fgets(name,sizeof(name),stdin);
printf("name: ");
puts(name);
return 0;
}
```

Output:



3. **Convert**

a. Upper case to Lower case
b. Lower case to Upper case
c. Toggle case
d. Sentence case

a) upper case to lower case:

```
#include <stdio.h>
#include <string.h>
int main(){
char s[100];
int i;

printf("Enter a string : ");
gets(s);

for (i = 0; s[i]!='\0'; i++) {
if(s[i] >= 'A' && s[i] <= 'Z') {
s[i] = s[i] + 32;
}
}

printf("\nString in Lower Case = %s", s);
return 0;
}
```

Output:

```
Enter a string : ENTER THE ZONE

String in Lower Case = enter the zone

...Program finished with exit code 0
Press ENTER to exit console.
```

b) lower case to upper case:

```
#include <stdio.h>
#include <string.h>
int main() {
char s[100];
int i;
printf("Enter a string : ");
gets(s);

for (i = 0; s[i]!='\0'; i++) {
if(s[i] >= 'a' && s[i] <= 'z') {
s[i] = s[i] - 32;
}
}
printf("\nString in Upper Case = %s", s);
return 0;
}
```

Output:

```
Enter a string : enter

String in Upper Case = ENTER

...Program finished with exit code 0
Press ENTER to exit console.
```

c) toggle case:

```
#include <stdio.h>
#include <string.h>
int main(){
char Str[100];
int i;
printf("Enter any string: ");
gets(Str);
for (i = 0; Str[i]!='\0'; i++){
```

```
if(Str[i] >= 'a' && Str[i] <= 'z'){
Str[i] = Str[i] - 32;
}
else if(Str[i] >= 'A' && Str[i] <= 'Z'){
Str[i] = Str[i] + 32;
}
}

printf("\n The Given String after toggle case = %s", Str);

return 0;
}
```

Output:

```
Enter any string: EnTer

 The Given String after toggle case = eNtER

...Program finished with exit code 0
Press ENTER to exit console.
```

d) sentence case:

```
#include <stdio.h>
#include <ctype.h>
int main(){
char str[100];
printf("Enter a string : ");
gets(str);
str[0] = toupper(str[0]);
printf("The string is: %s.",str);
return 0;
}
```

Output:

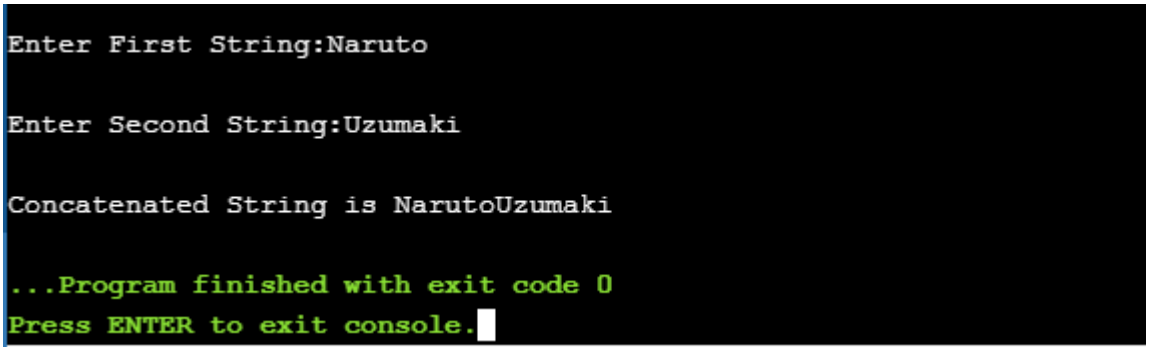
```
Enter a string : kakashi Hatake
The string is: Kakashi Hatake.

...Program finished with exit code 0
Press ENTER to exit console.
```

4. **Perform String Concatenation (With and Without String Handling Functions).**

a) Without using string handling function:

```
#include<stdio.h>

int main()
{
char str1[25],str2[25];
int i=0,j=0;
printf("\nEnter First String:");
gets(str1);
printf("\nEnter Second String:");
gets(str2);
while(str1[i]!='\0')
i++;
while(str2[j]!='\0')
{
str1[i]=str2[j];
j++;
i++;
}
str1[i]='\0';
printf("\nConcatenated String is %s",str1);
return 0;
}
```

Output:



b) With using string function:

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

int main()
{
char a[100], b[100];

printf("Enter the first string\n");
gets(a);

printf("Enter the second string\n");
gets(b);

strcat(a,b);

printf("String obtained on concatenation is %s\n",a);

return 0;

}
```

Output:

```
Enter the first string
Uchia
Enter the second string
Madara
String obtained on concatenation is UchiaMadara


...Program finished with exit code 0
Press ENTER to exit console.
```

5. **Perform String Reversal (With and Without String Handling Functions).**

a) using string handling function:

```
#include <stdio.h>
#include <string.h>
int main()
{
char s[100];

printf("Enter a string to reverse\n");
gets(s);

strrev(s);

printf("Reverse of the string: %s\n", s);

return 0;
}
```

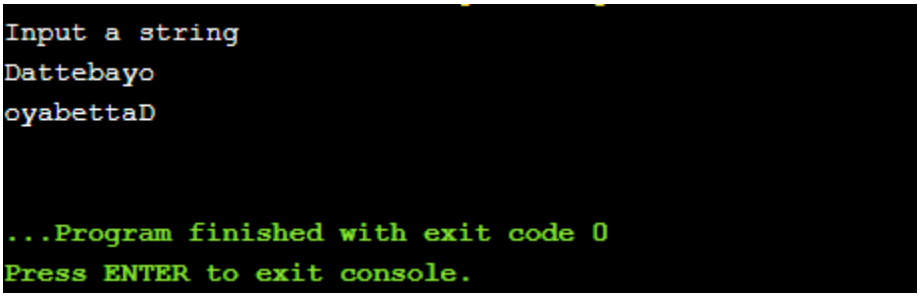
Output:

b) Without using string handling function:

```
#include <stdio.h>
int main()
{
char s[1000], r[1000];
int begin, end, count = 0;

printf("Input a string\n");
gets(s);
```

```
while (s[count] != '\0')
count++;

end = count - 1;

for (begin = 0; begin < count; begin++) {
r[begin] = s[end];
end--;
}

r[begin] = '\0';

printf("%s\n", r);

return 0;
}
```

Output:

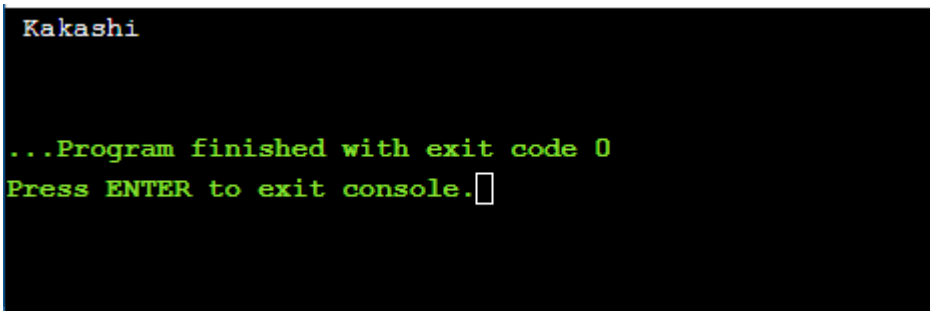


6. **Perform Substring Extraction (With and Without String Handling Functions).**

a) Using string handling function:

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

int main() {
char string[50] = "Hello world";
// Extract the first token
char * token = strtok(string, " ");
printf( " %s\n", token ); //printing the token
return 0;
}
```

Output:



b) Without using string handling function:

```
#include <stdio.h>
int findSubstring(char *str, char *substring);
int main()
{
   char str[40], substr[40];
   printf("Enter the string: ");
   gets(str);
   printf("Enter the substring: ");
```

```
   gets(substr);
   printf("findSubstring(): %d\n", findSubstring(str, substr));
   return 0;
}
int findSubstring(char *str, char *substr)
{
   /* write your code here */
   int i = 0, j = 0;
   while ((str[j] != '\0')||(substr[i] != '\0')) {
      if (substr[i] != str[j]) {
         j++;
         i = 0;
      }
      else {
         i++;
         j++;
      }
   }
   if (substr[i] == '\0')
      return 1;
   else
      return -1;
}
```

Output:

```
Enter the string: Sasuke is genius
Enter the substring: genius
findSubstring(): 1


...Program finished with exit code 0
Press ENTER to exit console.
```

7. **Copy one string into another and count the no of elements copied. (With and Without String Handling Functions).**

a) With using string handling function:

```
#include<stdio.h>
#include<string.h>    // for using strcpy() function

int main(){
   char str1[100];
   char str2[100];
   int i;
   printf("Enter the string: ");
   gets(str2);
   strcpy(str1,str2);
   printf("\nThe copied string is: %s", str1);
   for(i=0; str2[i]!='\0'; i++)
     str1[i]=str2[i];
     str1[i]='\0';
   printf("\nNumber of characters = %d\n", i);
   return 0;
}
```

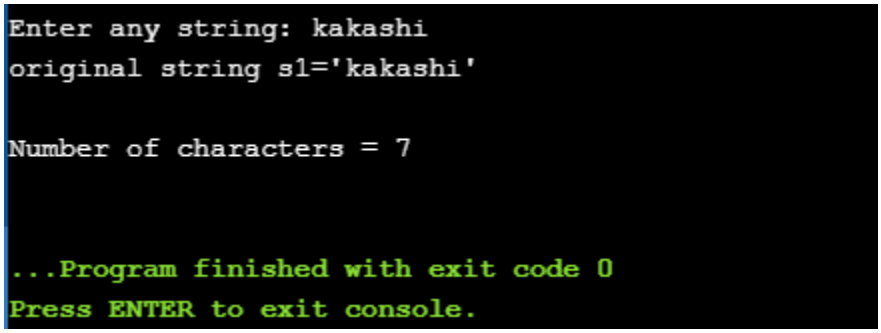
Output:

```
Enter the string: Kakashi

The copied string is: Kakashi
Number of characters = 7


...Program finished with exit code 0
Press ENTER to exit console.
```

b) Without using string handling function:

```
#include<stdio.h>
//#define N 10

int main(){
char str1[80],str2[80];
int i;
printf("input a string:");
scanf("%s",str2);
for(i=0;str2[i]!='\0';i++)
str1[i]=str2[i]!='\0';i++)
str1[i]=str2[i];
str1[i]='\0';
printf("\n");
printf("original string:%s",str1);
printf("\nnumber of characters=%d\n",i);
return 0;
}
```

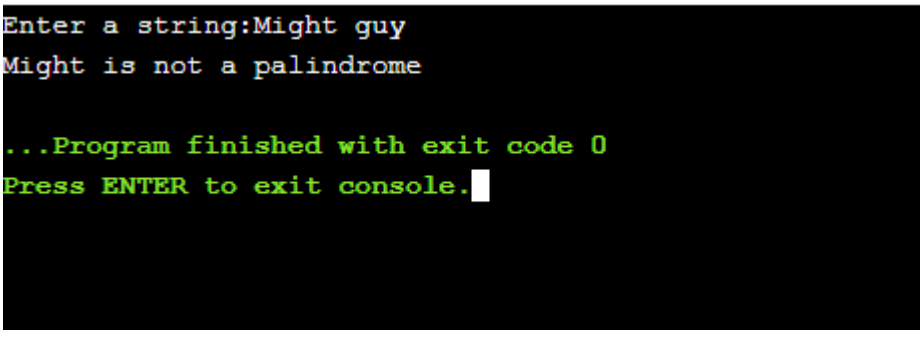
Output:



8. **Read a string and prints if it is a palindrome or not.**

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

int main(){
char string1[20];
int i, length;
int flag = 0;

printf("Enter a string:");
scanf("%s", string1);

length = strlen(string1);

for(i=0;i < length ;i++){
if(string1[i] != string1[length-i-1]){
flag = 1;
break;
}
}
if (flag) {
printf("%s is not a palindrome", string1);}
else {
printf("%s is a palindrome", string1);
}
return 0;
}
```

Output:

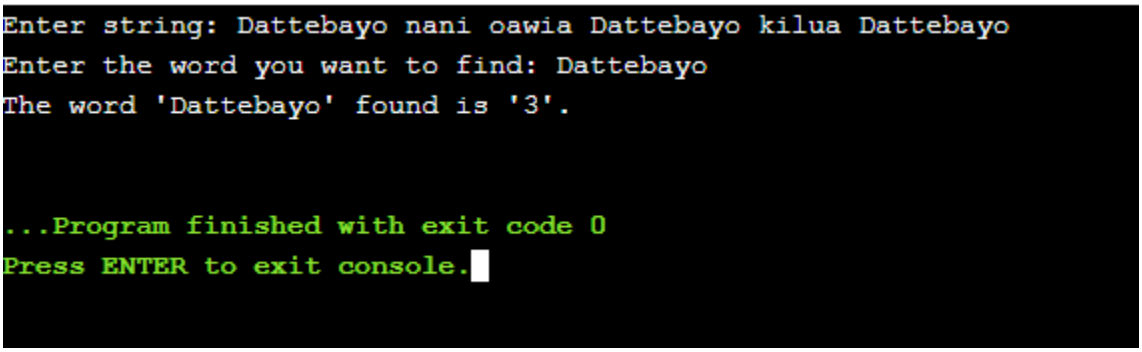


9. Read a line of text and count all occurrences of particular word.

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

int main()
{
   char string[100], word[20], unit[20], c;
   int i = 0, j = 0, count = 0;

   printf("Enter string: ");
   i = 0;
   do
   {
      fflush(stdin);
      c = getchar();
      string[i++] = c;

   }

  while (c != '\n');
   string[i - 1] = '\0';
   printf("Enter the word you want to find: ");
   scanf("%s", word);
   for (i = 0; i < strlen(string); i++)
   {
      while (i < strlen(string) && !isspace(string[i]) && isalnum(string[i]))
      {
         unit[j++] = string[i++];
      }
      if (j != 0)
      {
         unit[j] = '\0';
```

```
if (strcmp(unit, word) == 0)
        {
           count++;
        }
        j = 0;
     }
   }

   printf("The number of times the word '%s' found in '%s' is '%d'.\n", word, string,
count);
return 0;
}
```

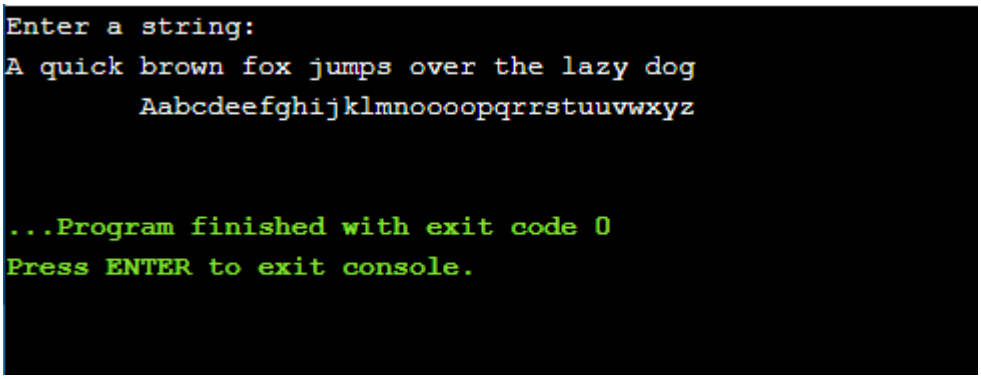
Output:



10. Read a string and rewrite it in the alphabetical order.

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

int main()
{
char str[20], k;
int i, j;

printf("Enter a string: \n");
scanf("%[^\n]", str);
for(i=0; str[i] != '\0'; i++)
{
for(j=i+1; str[j] != '\0'; j++)
{
if(str[i] > str[j])
{
k= str[i];
str[i] = str[j];
str[j] = k; }
}
}
printf("%s", str);
printf("\n");
return 0;}
```

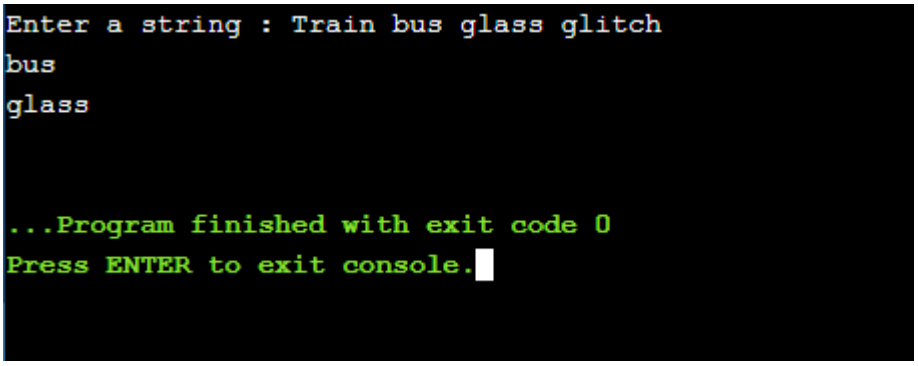
Output:



11. Print the Words Ending with Letter S.

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

char str[100];

int main()
{
   int i, t, j, len;
   printf("Enter a string : ");
   scanf("%[^\n]s", str);

   len = strlen(str);

   str[len] = ' ';

   for (t = 0, i = 0; i < strlen(str); i++)
   {
      if ((str[i] == ' ') && (str[i - 1] == 's'))
      {
         for (j = t; j < i; j++)
            printf("%c", str[j]);
         t = i + 1;
         printf("\n");
      }
      else
      {
         if (str[i] == ' ')
         {
            t = i + 1;
         }
      }
   }
return 0;
}
```

Output:


Enter a string : Train bus glass glitch
bus
glass
...Program finished with exit code 0
Press ENTER to exit console.

12. Delete All Repeated Words in the line of text.

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

int main()
{
	char str[100], word[100], twoD[10][30];
	int i = 0, j = 0, k = 0, len1 = 0, len2 = 0, l = 0;

	printf ("Enter the string\n");
	gets (str);


	for (i = 0; str[i] != '\0'; i++)
	{
		if (str[i] == ' ')
		{
			twoD[k][j] = '\0';
			k ++;
			j = 0;
		}
		else
		{
			twoD[k][j] = str[i];
			j ++;
		}
	}

	twoD[k][j] = '\0';

	j = 0;
	for (i = 0; i < k; i++)
	{
		int present = 0;
		for (l = 1; l < k + 1; l++)
```

```
                {
                        if (twoD[l][j] == '\0' || l == i)
                        {
                                continue;
                        }

                        if (strcmp (twoD[i], twoD[l]) == 0) {
                                twoD[l][j] = '\0';
                                present = present + 1;
                        }
                }

}

        j = 0;

        for (i = 0; i < k + 1; i++)
        {
                if (twoD[i][j] == '\0')
                        continue;
                else
                        printf ("%s ", twoD[i]);
        }

        printf ("\n");
return 0;
}
```

Output:

```
Enter the string
Rampi rampa rampi rampa rampi
Rampi rampa rampi


...Program finished with exit code 0
Press ENTER to exit console.
```