**PRACTICE – 8**

**3.**

**a) AIM : Printing Tokens Objective : print each word of the sentence in a new line.**

**CODE :**

#include <stdio.h>

#include <string.h>

#include <math.h>

#include <stdlib.h>

int main() {

    char str[1001];

    scanf("%[^\n]s", str);

for (int i = 0; str[i] != '\0'; i++)

{

if (str[i] == ' ')

printf("\n");

else

printf("%c", str[i]);

}

    return 0;

}

**OUTPUT:**

This is C

This

is

C

**b) AIM : Count number of alphabet (lowercase, uppercase, consonants, vowels) and digits objective :**

**CODE :**

#include<stdio.h>

int main()

{

char line[150];

int vowels, consonant , digit, space;

vowels = consonant = digit = space = 0;

printf("Enter a line of string: ");

gets(line);

int i;

for(i = 0;line[i]!='\0';i++) {

line[i] = tolower(line[i]);

if(line[i]=='a'||line[i]=='e'||line[i]=='i'||line[i]=='o'||line[i]=='u') {

vowels++; }

else if (line[i]>='0'&& line[i]<='9') {

digit++; }

else if (line[i] == ' ')

{ space++; }

else

{

consonant++;

}

}

printf("Vowels: %d", vowels);

printf("\nConsonants: %d", consonant);

printf("\nDigit: %d", digit);

printf("\nWhite spaces: %d", space);

return 0;

}

**OUTPUT:**

Enter a line of string :aditya2024

Vowels : 3

Consonants : 3

Digit : 4

White spaces : 0

**c) AIM : Lowercase to uppercase , Uppercase to Lowercase , Toggle case , Sentential case.**

**CODE :**

#include <stdio.h>

#include <ctype.h>

int main() {

char str[1000];

int choice;

// Input string

printf("Enter a string: ");

fgets(str, sizeof(str), stdin);

int i;

// Remove newline character if present

for (i = 0; str[i] != '\0'; i++) {

if (str[i] == '\n') {

str[i] = '\0';

break;

} }

do {

// Menu display

printf("\nChoose an operation:\n");

printf("1. Convert to Uppercase\n");

printf("2. Convert to Lowercase\n");

printf("3. Toggle Case\n");

printf("4. Convert to Sentential Case\n");

printf("5. Exit\n");

printf("Enter your choice: ");

scanf("%d", &choice);

getchar(); // Consume newline character left in input buffer

// Process based on choice

if (choice == 5) {

printf("Exiting the program.\n");

break; }

int capitalize = 1; // Used for sentential case

for (i = 0; str[i] != '\0'; i++) {

char ch = str[i];

if (choice == 1) { // Convert to Uppercase

str[i] = toupper(ch);

} else if (choice == 2) { // Convert to Lowercase

str[i] = tolower(ch);

} else if (choice == 3) { // Toggle Case

if (islower(ch))

str[i] = toupper(ch);

else if (isupper(ch))

str[i] = tolower(ch);

} else if (choice == 4) { // Sentential Case

if (capitalize && isalpha(ch)) {

str[i] = toupper(ch);

capitalize = 0;

} else {

str[i] = tolower(ch);

}

if (ch == '.' || ch == '!' || ch == '?') {

capitalize = 1; // Reset capitalization after sentence end

}

}

}

// Print modified string

printf("Result: %s\n", str);

} while (choice != 5);

return 0;

}

**OUTPUT:**

Enter a string: Aditya college2024

Choose an operation:

1. Convert to Uppercase

2. Convert to Lowercase

3. Toggle Case

4. Convert to Sentential Case

5. Exit

Enter your choice: 3

Result: aDITYA COLLEGE2024

Choose an operation:

1. Convert to Uppercase

2. Convert to Lowercase

3. Toggle Case

4. Convert to Sentential Case

5. Exit

Enter your choice: 1

Result: ADITYA COLLEGE2024

Choose an operation:

1. Convert to Uppercase

2. Convert to Lowercase

3. Toggle Case

4. Convert to Sentential Case

5. Exit

Enter your choice: 5

Exiting the program.

**d) AIM: Digit Frequency Objective : Find the frequency of each digit in the given string.**

**CODE :**

#include <stdio.h>

#include <string.h>

#include <math.h>

#include <stdlib.h>

int main() {

    char str[1000];

     scanf("%s", str);

int freq[10] = {0};

int i;

for (i = 0; str[i] != '\0'; i++) {

if (str[i] >= '0' && str[i] <= '9')

freq[str[i] - '0']++; }

for (i = 0; i < 10; i++)

{    printf("%d ", freq[i]); }

return 0;

}

**OUTPUT:**

* a11472o5t6
* 0 2 1 0 1 1 1 1 0 0

**e) AIM: Find string length, Concatenate 2 strings, reverse a string using built-in and without built-in string functions.**

**CODE :**

#include<stdio.h>

int main()

{

char arr[30],s1[10],s2[10],s3[10];

int opt,i=0,j,len=0;

printf("Enter any option\n");

printf("1: Find out length of the string\n");

printf("2: Concatenate of the two string\n");

printf("3: Reverse of the string\n");

printf("4: Copy of the string\n");

printf("Enter the choice\n");

scanf("%d",&opt);

switch(opt) {

case 1:

{ printf("Enter any string \n");

scanf(" %[^\n]s",arr);

for(i=0;arr[i]!='\0';i++);

printf("The length of the string %d",i);

break; }

case 2:

{ printf("String Concatenation \n");

printf("\nEnter the First string:\n");

scanf(" %[^\n]s", s1);

printf("\nEnter Second string:\n");

scanf(" %[^\n]s",s2);

for(i=0;s1[i]!='\0';i++) {

s3[i]=s1[i]; }

s3[i]='\0';

for(j=0;j<=i;j++)

{ s3[i+j]=s2[j]; }

printf("The Concatenated string is %s",s3);

break; }

case 3:

{

printf("Reverse the string ");

printf("\nEnter the string: ");

scanf(" %[^\n]s",s1);

while(s1[i]!='\0')

{

len=len+1; i++ ;

}

for(i=len-1;i>=0;i--)

{

printf("%c",s1[i]);

}

break;

}

case 4:

{

printf("String copying\n");

printf("Enter 1st string: ");

scanf(" %[^\n]s",s2);

while(s2[i]!='\0')

{

s1[i]=s2[i]; i++;

}

s1[i]='\0';

printf("%s",s1);

break;

}

default:

{

printf("Not is valid Option.");

}

}

}

**OUTPUT:**

Enter any option

1: Find out length of the string

2: Concatenate of the two string

3: Reverse of the string

4: Copy of the string

Enter the choice

1

Enter any string

Aditya university

The length of the string 17

**OUTPUT 2:**

Enter any option

1: Find out length of the string

2: Concatenate of the two string

3: Reverse of the string

4: Copy of the string

Enter the choice

2

String Concatenation

Enter the First string:

ADITYA

Enter Second string:

COLLEGE

The Concatenated string is ADITYA COLLEGE