**Exam:** C Programming lab exam

**Submitted By:** Tanmay Vig

**Roll No:** 19BCS061

**Ans1:**

Source Code:

#include <stdio.h>

int main() {

int matrix[4][4],i,j;

printf("Enter values of 4x4 matrix\n");

for (i = 0; i < 4; ++i) {

for (j = 0; j < 4; ++j) scanf("%d", &matrix[i][j]);

}

int sum = 0;

for (i = 0; i < 4; ++i) sum += matrix[i][i];

printf("The principal sum is: %d", sum);

return 0;

}

Output:

Text

Description automatically generated

**Ans2:**

Source Code:

#include <stdio.h>

#include <stdlib.h>

int main() {

char \*S = malloc(100\*sizeof(char));

printf("Enter the line of text\n");

gets(S);

int cv=0, cc=0, cd=0, cs=0, co=0;

int i=0;

while(\*(S+i)!='\0') {

char c = \*(S+i);

if((c>='a' && c<='z') || (c>='A' && c<='Z')) {

if(c=='a' || c=='e' || c=='i' || c=='o' || c=='u' || c=='A' || c=='E' || c=='I' || c=='O' || c=='U') {

cv++;

} else {

cc++;

}

} else if(c>='0' && c<='9') {

cd++;

} else if(c == ' ') {

cs++;

} else {

co++;

}

i++;

}

printf("Number of vowels: %d\n", cv);

printf("Number of consonants: %d\n", cc);

printf("Number of digits: %d\n", cd);

printf("Number of white spaces: %d\n", cs);

printf("Number of other characters: %d\n", co);

return 0;

}

Output:

Text

Description automatically generated