Q1. Write a program to find the number of vowels in each of the 5 strings stored in two dimensional arrays, taken from the user.

#include <stdio.h>

int main()

{

char arr[5][30];

int vowel = 0;

for(int i = 0 ; i < 5; i++)

{

printf("\nEnter String %d = ", i+1);

gets(arr[i]);

}

for(int i = 0; i < 5; i++)

{

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

{

if( (arr[i][j] == 'A') || (arr[i][j] == 'a') || (arr[i][j] == 'E') ||(arr[i][j] == 'e') ||(arr[i][j] == 'I') ||(arr[i][j] == 'i') ||(arr[i][j] == 'O') ||(arr[i][j] == 'o') ||(arr[i][j] == 'U') ||(arr[i][j] == 'u') )

{

vowel++;

}

}

printf("\n%s = %d", arr[i], vowel);

vowel = 0;

}

}

Q2.Write a program to sort 10 city names stored in two dimensional arrays, taken from the user.

#include <stdio.h>

#include <string.h>

int main()

{

char name[10][20];

char temp[20];

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

{

printf("Enter string %d :- ", i);

gets(name[i]);

}

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

{

for(int j=i+1; j<10; j++)

{

if(strcmp(name[i], name[j]) > 0)

{

strcpy(temp, name[i]);

strcpy(name[i], name[j]);

strcpy(name[j], temp);

}

}

}

printf("\n\n");

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

{

printf("%d) :- ", i);

puts(name[i]);

}

}

Q3.Write a program to read and display a 2D array of strings in C language.

#include <stdio.h>

#include <string.h>

int main()

{

char str[2][20] = {

{"hii, how are you ?"},

{"I am fine....."}

} ;

for(int i=0; i<2; i++)

{

printf("%s\n",name[i]);

}

}

Q4.Write a program to search a string in the list of strings.

#include <stdio.h>

#include <string.h>

int main()

{

char str[4][20] = {

{"hii, how are you ?"},

{"I am fine....."},

{"What is your name ?"},

{"come here please.........!!"}

} ;

char find[20];

int flag = 0;

printf("Enter string to search = ");

gets(find);

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

{

if(strcmp(str[i], find))

{

flag = 0;

}

else

{

printf("string found");

flag = 1;

}

}

if(flag == 0)

{

printf("string not found");

}

}

Q5. Suppose we have a list of email addresses, check whether all email addresses have ‘@’ in it. Print the odd email out.

#include <stdio.h>

#include <string.h>

int main()

{

char str[4][40] = {

{"jhon45doegmail.com"},

{"abc@gmail.com"}

};

char find[20];

char ch= '@';

for(int i=0; i<2; i++)

{

if(strchr(str[i], '@') != NULL)

{

printf("string found");

}

}

}

Q6. Write a program to print the strings which are palindrome in the list of strings.

#include <stdio.h>

#include <string.h>

int main()

{

char str[5][20] = {

{"star"},

{"mom"},

{"ajay"},

{"dad"},

{"zerox"}

};

char tmp[20];

for(int i = 0; i < 5; i++)

{

strcpy(tmp, str[i]);

if(strcmp(str[i], strrev(tmp)) == 0)

{

printf("%s\n", str[i]);

}

}

}

Q7. From the list of IP addresses, check whether all ip addresses are valid.

#include <stdio.h>

#include <string.h>

int main()

{

char str[5][20] = {

{"192.168.1.1"},

{"256.7845.1.2"},

{"255.106.45.200"},

{"1984.150.20.74"},

{"4.154.201.0"}

};

int num = 0;

int flag = 0;

for(int i = 0; i < 5; i++)

{

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

{

if(str[i][0] == '0')

{

printf("Wrong IP : %s\n\n", str[i]);

flag = 1;

break;

}

else if(str[i][j] != '.')

{

num = (num \* 10) + (str[i][j] - 48);

}

else if(num > 255)

{

printf("Wrong IP : %s\n\n", str[i]);

flag = 1;

num = 0;

break;

}

else

{

num = 0;

}

}

if(flag == 0)

{

printf("Valid IP : %s\n\n", str[i]);

}

else

{

flag = 0;

}

num = 0;

}

}

Q8.Given a list of words followed by two words, the task is to find the minimum distance between the given two words in the list of words.

(Example : s = {“the”,”quick”,”brown”,”fox”,”quick”} word1 = “the”, word2 = “fox”, OUTPUT : 1 )

#include <stdio.h>

#include <string.h>

int main()

{

char str[5][20] = {

{"apple"},

{"grapes"},

{"house"},

{"tiger"},

{"grapes"}

};

char word1[20], word2[20];

int i = 0, count1 = 0, count2 = 0, flag1 = 0, flag2 = 0;

printf("Enter word1 : ");

scanf("%s", word1);

printf("Enter word2 : ");

scanf("%s", word2);

for(; i < 5; i++)

{

if(!strcmp(str[i], word1) && flag1 == 0)

{

count1 = i;

flag1 = 1;

}

else if(!strcmp(str[i], word2) && flag2 == 0)

{

count2 = i;

flag2 = 1;

}

else if(flag1 == 1 && flag2 == 1)

{

break;

}

}

if(count1<count2)

{

printf("Word1 : %d",count1);

}

else

{

printf("Word2 : %d",count2);

}

}

Q9.Write a program that asks the user to enter a username. If the username entered is one of the names in the list then the user is allowed to calculate the factorial of a number. Otherwise, an error message is displayed

#include <stdio.h>

#include <string.h>

void fact(void);

int main()

{

char str[5][20] = {

{"ajay145"},

{"rakesgh851"},

{"suraj441"},

{"ram4110"},

{"kishor6321"}

};

char username[20];

int flag = 1;

printf("Enter Username : ");

scanf("%s",username);

for(int i = 0; i < 5; i++)

{

if(!strcmp(str[i], username))

{

fact();

flag = 0;

}

}

if(flag == 1)

{

printf("Username not found");

}

}

void fact(void)

{

int num = 0, ans = 1;

printf("Enter number for factorial : ");

scanf("%d", &num);

int tmp = num;

while(tmp)

{

ans = (ans \* tmp);

tmp--;

}

printf("Factorial of %d : %d", num, ans);

}

Q10. Create an authentication system. It should be menu driven.

#include <stdio.h>

#include <string.h>

#include <stdlib.h>

#include <conio.h>

void display(void);

int checkUsername(void);

int checkPassword(void);

void login(void);

void create(void);

void update(void);

void del(void);

int arrayEmpty = 0, flag = 0, chkPass = 0;

char username[5][20];

int ptr = 0;

char password[5][25];

char username\_input[50];

char password\_input[50];

int main()

{

while(1)

{

display();

}

}

void display(void)

{

int choice;

printf("-----------------------Authentication System------------------\n\n");

printf("\t\t1) Log In\n");

printf("\t\t2) Create New Username And Password\n");

printf("\t\t3) Upadate Username And Password\n");

printf("\t\t4) Delete Username And Password\n");

printf("\t\t5) Exit\n");

printf("-----------------------Authentication System------------------\n\n");

printf("Enter Choice -->> ");

scanf("%d", &choice);

system("cls");

switch(choice)

{

case 1:

{

login();

break;

}

case 2:

{

if(ptr < 5)

{

create();

flag = 1;

}

else

{

printf("Memory Full");

getch();

system("cls");

}

flag = 0;

break;

}

case 3:

{

update();

break;

}

case 4:

{

del();

break;

}

case 5:

{

exit(0);

break;

}

}

}

int checkUsername(void)

{

if(arrayEmpty == 0)

return 1;

else

{

for(int i = 0; i < 5; i++)

{

if(strcmp(username[i], username\_input))

{

continue;

}

else

{

chkPass = i;

flag = 0;

return 0;

}

}

}

return 1;

}

int checkPassword(void)

{

if(strcmp(password[chkPass], password\_input))

{

printf("\nWrong Password\n");

return 0;

}

else

{

return 1;

}

}

void login(void)

{

fflush(stdin);

printf("Enter Username >>> ");

gets(username\_input);

if(checkUsername())

{

system("cls");

printf("No Username Exist. Please Create New Username and Password\n");

getch();

system("cls");

}

else

{

printf("Enter Password >>> ");

gets(password\_input);

if(checkPassword())

{

printf("Log In Successfully");

}

}

}

void create()

{

fflush(stdin);

printf("Enter New Username >>> ");

gets(username\_input);

if(checkUsername() || flag == 1)

{

strcpy(username[ptr], username\_input);

printf("Enter New Password >>> ");

gets(password[ptr]);

printf("\nUsername And Password Set Successfully\n");

ptr = ptr + 1;

arrayEmpty = 1;

flag = 0;

getch();

system("cls");

}

else

{

printf("\nUsername And Password Already Set\n");

}

}

void update(void)

{

char ans;

fflush(stdin);

printf("Enter Username >>> ");

gets(username\_input);

if(checkUsername())

{

printf("Username Not Exist");

getch();

system("cls");

}

else

{

printf("If You Want To Update Username ? y/n = ");

scanf("%c", &ans);

if(ans == 'y' || ans == 'Y')

{

fflush(stdin);

printf("Enter New Username >>> ");

gets(username[chkPass]);

}

printf("If You Want To Update Password ? y/n = ");

scanf("%c", &ans);

if(ans == 'y' || ans == 'Y')

{

fflush(stdin);

printf("Enter New Password >>> ");

gets(password[chkPass]);

}

}

}

void del(void)

{

fflush(stdin);

printf("Enter Username >>> ");

gets(username\_input);

if(checkUsername())

{

printf("Username Not Exist");

getch();

system("cls");

}

else

{

if(chkPass == (ptr-1))

{

strcpy(username[chkPass], "NULL");

strcpy(password[chkPass], "NULL");

ptr = chkPass;

printf("Username & Password deleted successfuly");

getch();

system("cls");

}

else

{

strcpy(username[chkPass], username[ptr-1]);

strcpy(password[chkPass], password[ptr-1]);

ptr = ptr - 1;

printf("Username & Password deleted successfuly");

getch();

system("cls");

}

}

}