

Program and Output

Program :

1. Encryption :

```
#include<stdio.h>
#include<string.h>
#include<ctype.h>
#include<stdlib.h>
main()
{
    int i,j,k,numstr[100],numkey[100],numcipher[100];
    char str[100],key[100];
    printf("Enter a string\n");
    gets(str);
    //converting entered string to Capital letters
    for(i=0,j=0;i<strlen(str);i++)
    {
        if(str[i]!=' ')
        {
            str[j]=toupper(str[i]);
            j++;
        }
    }
    str[j]='\0';
    printf("Entered string is : %s \n",str);
    //Storing string in terms of ascii
    for(i=0;i<strlen(str);i++)
    {
        numstr[i]=str[i]-'A';
    }
    printf("Enter a key\n");
    gets(key);
    //converting entered key to Capital letters
    for(i=0,j=0;i<strlen(key);i++)
    {
        if(key[i]!=' ')
        {
            key[j]=toupper(key[i]);
            j++;
        }
    }
```

```

}
key[j]='\0';
//Assigning key to the string
for(i=0;i<strlen(str);)
{
    for(j=0;(j<strlen(key))&&(i<strlen(str));j++)
    {
        numkey[i]=key[j]-'A';
        i++;
    }

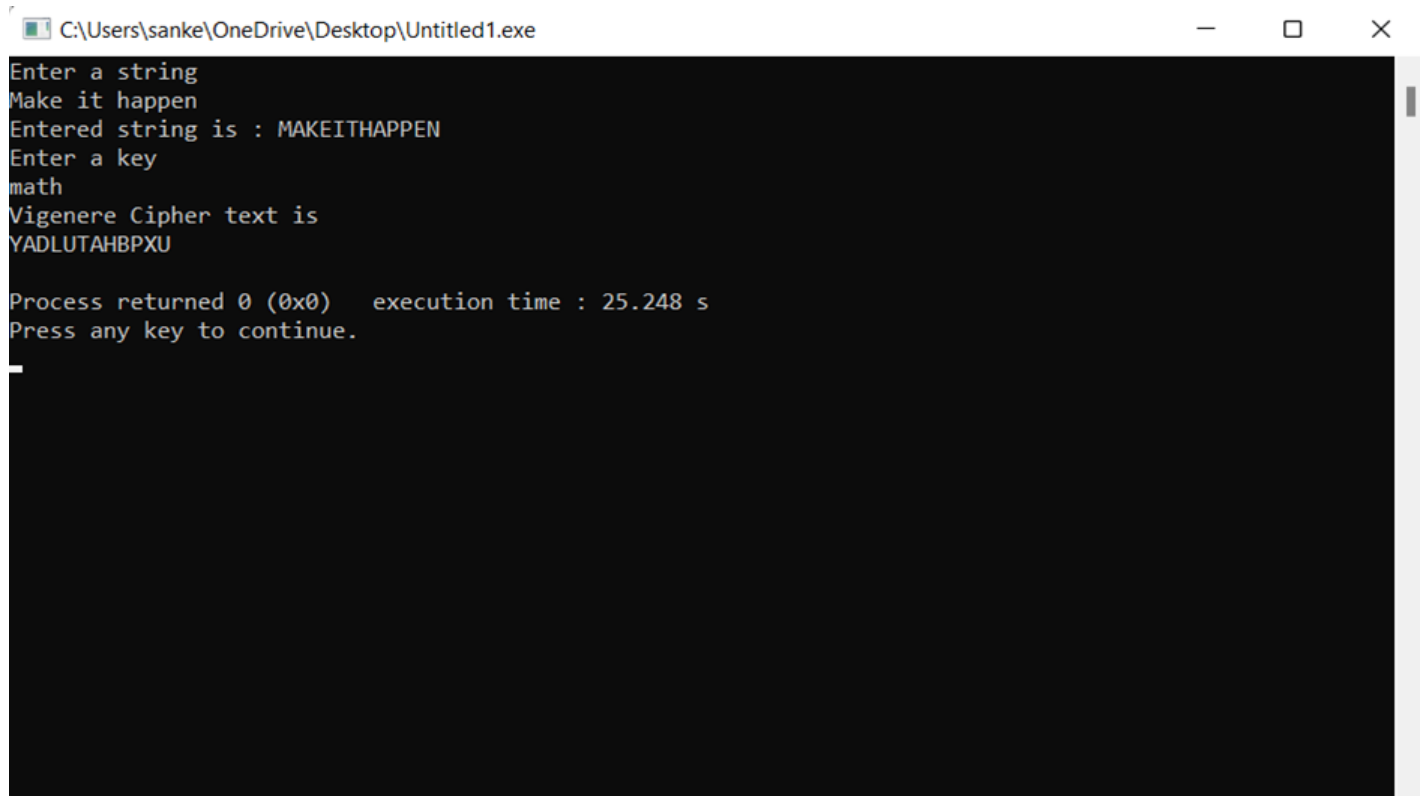
}

for(i=0;i<strlen(str);i++)
{
    numcipher[i]=numstr[i]+numkey[i];
}
for(i=0;i<strlen(str);i++)
{
    if(numcipher[i]>25)
    {
        numcipher[i]=numcipher[i]-26;
    }
}
printf("Vigenere Cipher text is\n");
for(i=0;i<strlen(str);i++)
{
    printf("%c",(numcipher[i]+'A'));
}

printf("\n");
}

```

Output :



```
C:\Users\sanke\OneDrive\Desktop\Untitled1.exe
Enter a string
Make it happen
Entered string is : MAKEITHAPPEN
Enter a key
math
Vigenere Cipher text is
YADLUTAHBPXU

Process returned 0 (0x0)   execution time : 25.248 s
Press any key to continue.
```

2. Decryption :

```
#include<stdio.h>
#include<string.h>
#include<ctype.h>
#include<stdlib.h>
main()
{
    int i,j,k,numstr[100],numkey[100],numcipher[100];
    char str[100],key[100];
    printf("Enter a string to Decrypt\n");
    gets(str);
    //converting entered string to Capital letters
    for(i=0,j=0;i<strlen(str);i++)
    {
        if(str[i]!=' ')
        {
            str[j]=toupper(str[i]);
            j++;
        }
    }
    str[j]='\0';
    printf("Entered string is : %s \n",str);
    //Storing string in terms of ascii
    for(i=0;i<strlen(str);i++)
    {
        numstr[i]=str[i]-'A';
    }
    printf("Enter a key\n");
    gets(key);
    //converting entered key to Capital letters
    for(i=0,j=0;i<strlen(key);i++)
    {
        if(key[i]!=' ')
        {
            key[j]=toupper(key[i]);
            j++;
        }
    }
    key[j]='\0';
```

```

//Assigning key to the string
for(i=0;i<strlen(str);)
{
    for(j=0;(j<strlen(key))&&(i<strlen(str));j++)
    {
        numkey[i]=key[j]-'A';
        i++;
    }

}

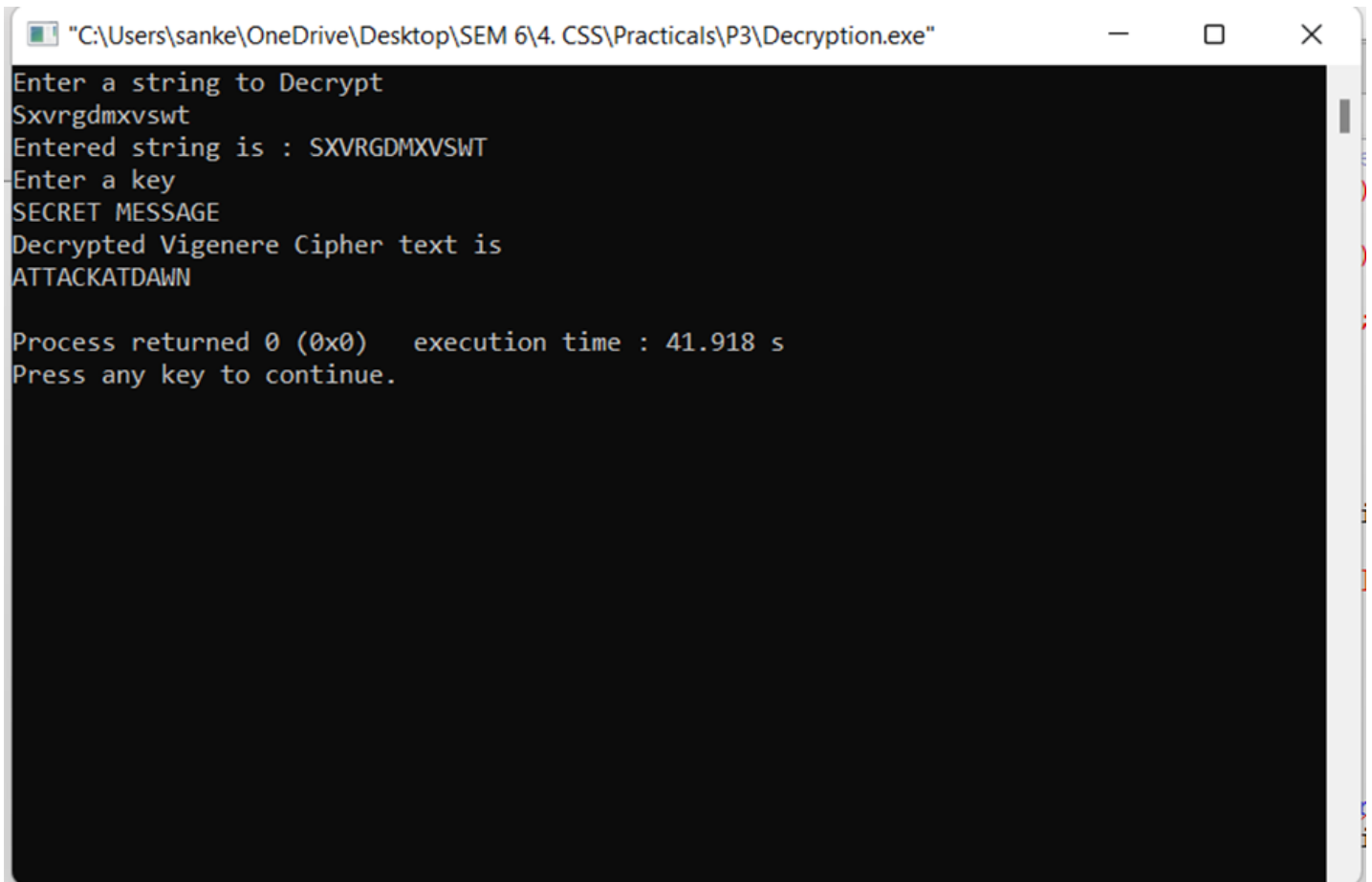
for(i=0;i<strlen(str);i++)
{
    numcipher[i]=numstr[i]-numkey[i];//changed from + to - for decryption
    if(numcipher[i]<0)
    {
        numcipher[i]+=26;
    }
}

printf("Decrypted Vigenere Cipher text is\n");
for(i=0;i<strlen(str);i++)
{
    printf("%c",(numcipher[i]+'A'));
}

printf("\n");
}

```

Output :



```
"C:\Users\sanke\OneDrive\Desktop\SEM 6\4. CSS\Practicals\P3\Decryption.exe"
Enter a string to Decrypt
Sxvrgdmxvswt
Entered string is : SXVRGDMXVSWT
Enter a key
SECRET MESSAGE
Decrypted Vigenere Cipher text is
ATTACKATDAWN

Process returned 0 (0x0)   execution time : 41.918 s
Press any key to continue.
```