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|  | PUNE INSTITUTE OF COMPUTER TECHNOLOGY, PUNE - 411043 | | | |
|  | DEPARTMENT OF ELECTRONICS AND TELECOMMUNICATION ENGG. ACADEMIC YEAR: 2022-23 SEM: 2 | | | |
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| **CLASS** : T. E. E&TC | | | **SUBJECT:** NS LAB | |
| **EXPT. NO.:** 02 | | **Roll No.:** | | **DATE:** |

**EXPERIMENT 2:** Write a program for encryption and decryption. (For transposition cipher)

**INPUT:**

**ENCRYPTION:**

#include<iostream>

#include<string>

using namespace std;

int main()

{

string key;

int key\_size;

cout<<"Enter the key"<<endl;

getline(cin,key);

key\_size=key.length();

char keyer[key\_size];

string message;

cout<<"enter the message"<<endl;

getline(cin,message);

int messagesize=message.length();

int n=0,arrheight=0;

string rand="asfgaikhgahklahjsga";

while(n<messagesize)

{

n=n+key\_size;

arrheight++;

}

//cout<<arrheight<<endl;

//cout<<key\_size<<endl;

string base;

if(n!=messagesize)

{

message.append(base.assign(rand,0,n-messagesize));

}

string enco[arrheight];

n=0;

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

{

for(int j=0;j<key\_size;j++)

{

enco[i]=enco[i]+message.at(n);

//cout<<message.at(n);

n++;

}

cout<<endl;

}

int arr\_of\_cipher[key\_size];

char arr\_of\_char[key\_size];

for(int i=0;i<key\_size;i++)

{

arr\_of\_cipher[i]=(int)key.at(i);

arr\_of\_char[i]=key.at(i);

}

for(int i=0;i<key\_size;i++)

{

for(int j=0;j<key\_size-1;j++)

{

if(arr\_of\_cipher[j]>arr\_of\_cipher[j+1])

{

int temp=arr\_of\_cipher[j];

arr\_of\_cipher[j]=arr\_of\_cipher[j+1];

arr\_of\_cipher[j+1]=temp;

char emp=arr\_of\_char[j];

arr\_of\_char[j]=arr\_of\_char[j+1];

arr\_of\_char[j+1]=emp;

}

}

}

string encrypted\_message="";

n=0;

for(int i=0;i<key\_size;i++)

{

for(int j=0;j<key\_size;j++)

{

if(key.at(j)==arr\_of\_char[i])

{

for(int k=0;k<arrheight;k++)

{

encrypted\_message=encrypted\_message+enco[k].at(j);

}

}

}

}

cout<<"Encrypted message \n"<<encrypted\_message<<endl;

}

**OUTPUT:**

Enter the key

MEGABUCK

enter the message

PleasetransfermilliondolartoMywissbankaccountsixtwotwo

Encrypted message

afooantsenMntwtmowaialnlrsowesitbuorilicxsPalascterdykso

**DECRYPTION:**

#include<iostream>

#include<string>

using namespace std;

int main()

{

string key;

int key\_size;

cout<<"Enter the key"<<endl;

getline(cin,key);

key\_size=key.length();

char keyer[key\_size];

string message;

cout<<"enter the encrypted message"<<endl;

getline(cin,message);

int messagesize=message.length();

int n=0,arrheight=0;

while(n<messagesize)

{

n=n+key\_size;

arrheight++;

}

string enco[key\_size];

n=0;

for(int i=0;i<key\_size;i++)

{

for(int j=0;j<arrheight;j++)

{

enco[i]=enco[i]+message.at(n);

//cout<<message.at(n);

n++;

}

cout<<endl;

}

int arr\_of\_cipher[key\_size];

char arr\_of\_char[key\_size];

for(int i=0;i<key\_size;i++)

{

arr\_of\_cipher[i]=(int)key.at(i);

arr\_of\_char[i]=key.at(i);

}

for(int i=0;i<key\_size;i++)

{

for(int j=0;j<key\_size-1;j++)

{

if(arr\_of\_cipher[j]>arr\_of\_cipher[j+1])

{

int temp=arr\_of\_cipher[j];

arr\_of\_cipher[j]=arr\_of\_cipher[j+1];

arr\_of\_cipher[j+1]=temp;

char emp=arr\_of\_char[j];

arr\_of\_char[j]=arr\_of\_char[j+1];

arr\_of\_char[j+1]=emp;

}

}

}

string decrypt[key\_size];

n=0;

for(int i=0;i<key\_size;i++)

{

for(int j=0;j<key\_size;j++)

{

if(key.at(i)==arr\_of\_char[j])

{

decrypt[i]=enco[j];

}

}

}

string decrypted\_key="";

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

{

for(int j=0;j<key\_size;j++)

{

decrypted\_key=decrypted\_key+decrypt[j].at(i);

}

}

cout<<"Decrypted key:\n"<<decrypted\_key<<endl;

}

**OUTPUT:**

Enter the key

MEGABUCK

enter the encrypted message

afooantsenMntwtmowaialnlrsowesitbuorilicxsPalascterdykso

Decrypted key:

PleasetransfermilliondolartoMywissbankaccountsixtwotwoas