KMP, O(N+M)

Tested on: LOJ 1255 Substring Frequency

void FailureFunction()

{

int i=1,j=0;

while(i<pl)

{

if(pattern[i]==pattern[j]) j++, failur[i]=j, i++;

else if(j>0) j=failur[j-1];

else failur[i]=0, i++;

}

}

void KMPmatch()

{

FailureFunction();

int i=0,j=0;

while(i<tl)

{

if(text[i]==pattern[j])

{

if(j==pl-1) cnt++; //a match found.

i++, j++;

}

else if(j>0) j=failur[j-1];

else i++;

}

}

int main()

{

int t,kk=1;

cin>>t;

while(t--)

{

cin>>text>>pattern;

tl=text.length();

pl=pattern.length();

cnt=0;

KMPmatch();

cout<<"Case "<<kk++<<": "<<cnt<<endl;

}

return 0;

}