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Assignment#8 - LPS Table Creation and KMP Algorithm Implementation in any of your preferred Programming Language (C/C++/Java)

Code :

#include <bits/stdc++.h>

#include <string.h>

using namespace std;

void LPS\_table(char pat[], int M, int lps[])

{

int len = 0;

lps[0] = 0;

int i = 1;

while (i < M)

{

if (pat[i] == pat[len])

{

len++;

lps[i] = len;

i++;

}

else

{

if (len != 0)

{

len = lps[len - 1];

}

else

{

lps[i] = 0;

i++;

}

}

}

cout<<"\nPLS Table = ";

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

{

cout<<lps[i]<<" ";

}

}

void KMP\_patten\_Search(char pat[], char txt[],int N,int M)

{

int lps[M];

LPS\_table(pat, M, lps);

int i = 0;

int j = 0;

while (i < N)

{

if (pat[j] == txt[i])

{

j++;

i++;

if(j == M)

{

cout<<"\nFound pattern at index = "<<i-j;

j = lps[j - 1];

}

}

else

{

if (j != 0)

{

j = lps[j - 1];

}

else

{

i = i + 1;

}

}

}

}

int main()

{

char text[100];

char patten[100];

cout<<"Input your text array = ";

cin.get (text,100);

cout<<"\nInput your patten array = ";

cin>>patten;

int t\_size = strlen(text);

int p\_size = strlen(patten);

cout<<"\nThe size of your text array is = "<<t\_size;

cout<<"\nThe size of your patten array is = "<<p\_size;

KMP\_patten\_Search(patten, text, t\_size, p\_size);

return 0;

}

Output:

