Que Shortest Common Sequence

⇒ Ex. str1 = "brute" m = 5

str2 = "groot" n = 5

dp[6][6] =

	0	1	2	3	4	5
0	0	0	0	0	0	0
1	0					
2	0					
3	0					
4	0					
5	0					

```
i=1
while(i<=m)
{ j=1
  while(j<=n)
  { if(str1[i-1]==str2[j-1])
    { dp[i][j] = 1 + dp[i-1][j-1]
    }
    else{ dp[i][j] = max(dp[i-1][j], dp[i][j-1]);
    }
  }
}
```

		0	1 (g)	2 (r)	3	4	5
	0	0	0	0	0	0	0
b	1	0	0	0	0	0	0
r	2	0	0	1	1	1	1
u	3	0	0	1	1	1	1
t	4	0	0	1	1	1	2
e	5	0	0	1	1	1	2

length of SCS = $m+n$ - length (LCS)

print SCS

		0	1	2	3	4	5
		g	r	e	e	n	t
0	terminate	0	0	0	0	0	0
1	b	0	0	0	0	0	0
2	r	0	0	1	1	1	1
3	y	0	0	1	1	1	1
4	t	0	0	1	1	1	2
5	e	0	0	1	1	1	2

res = "bgryuootte"

```
i=m, j=n
while (i>0 && j>0)
{ if(str1[i-1] == str2[j-1])
  { res = str1[i-1] + res
    i--, j--;
  }
  else if ( dp[i-1][j] > dp[i][j-1])
  { res = str1[i-1] + res;
    i = i-1;
  }
  else res = str2[j-1] + res;
       j = j-1;
  }
}
```

```
if (i==0)
{ while (j>0)
  { res = str2[j-1]+res
    j--;
  }
}
if (j==0)
{ while (i>0)
  { res = str1[i-1]
    +res
    i--;
  }
}
return res;
```