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LCS:

#include <stdio.h> #include <string.h>

int max(int a, int b) { return (a > b) ? a : b; }

int LCS_Length(char *X, char *Y) { int m = strlen(X); int n = strlen(Y);

```
int C[m + 1][n + 1];

for (int i = 0; i <= m; i++) {
    C[i][0] = 0;
}
for (int j = 0; j <= n; j++) {
    C[0][j] = 0;
}

for (int i = 1; i <= m; i++) {
    for (int j = 1; j <= n; j++) {
        // Characters match
        if (X[i - 1] == Y[j - 1]) {
            C[i][j] = C[i - 1][j - 1] + 1;
        } else {
            C[i][j] = max(C[i - 1][j], C[i][j - 1]);
        }
    }
}

return C[m][n];


}
```

int main() { char X[] = "STRONGER"; char Y[] = "LONGEST";

```
int lcs_length = LCS_Length(X, Y);

printf("Length of LCS is: %d\n", lcs_length);

return 0;

}
```

```
Length of LCS is: 4
```

LRS:

```
#include <stdio.h>
#include <string.h>

int max(int a, int b) {
   return (a > b) ? a : b;
}

int LRS_Length(char *S) {
   char *a = S;
   char *b = S;

   int n = strlen(a);
   int m = strlen(b);

   int c[n + 1][m + 1];

   for (int i = 0; i <= n; i++) {
```

```
    for (int j = 0; j <= m; j++) {
      if (i == 0 || j == 0) {
        c[i][j] = 0;
      }
    }
  }

  for (int i = 1; i <= n; i++) {
    for (int j = 1; j <= m; j++) {
      if (a[i - 1] == b[j - 1] && i != j) {
        c[i][j] = 1 + c[i - 1][j - 1];
      } else {
        c[i][j] = max(c[i - 1][j], c[i][j - 1]);
      }
    }
  }

  return c[n][m];
}

int main() {
  char S[] = "AABEBCDD";
  printf("Input String: %s\n", S);

  int length = LRS_Length(S);
```

```
    printf("Length of Longest Repeating Subsequence (c[n][m]): %d\n", length);


    return 0;
}
```

```
Input String: AABEBCDD
Length of Longest Repeating Subsequence (c[n][m]): 3
```