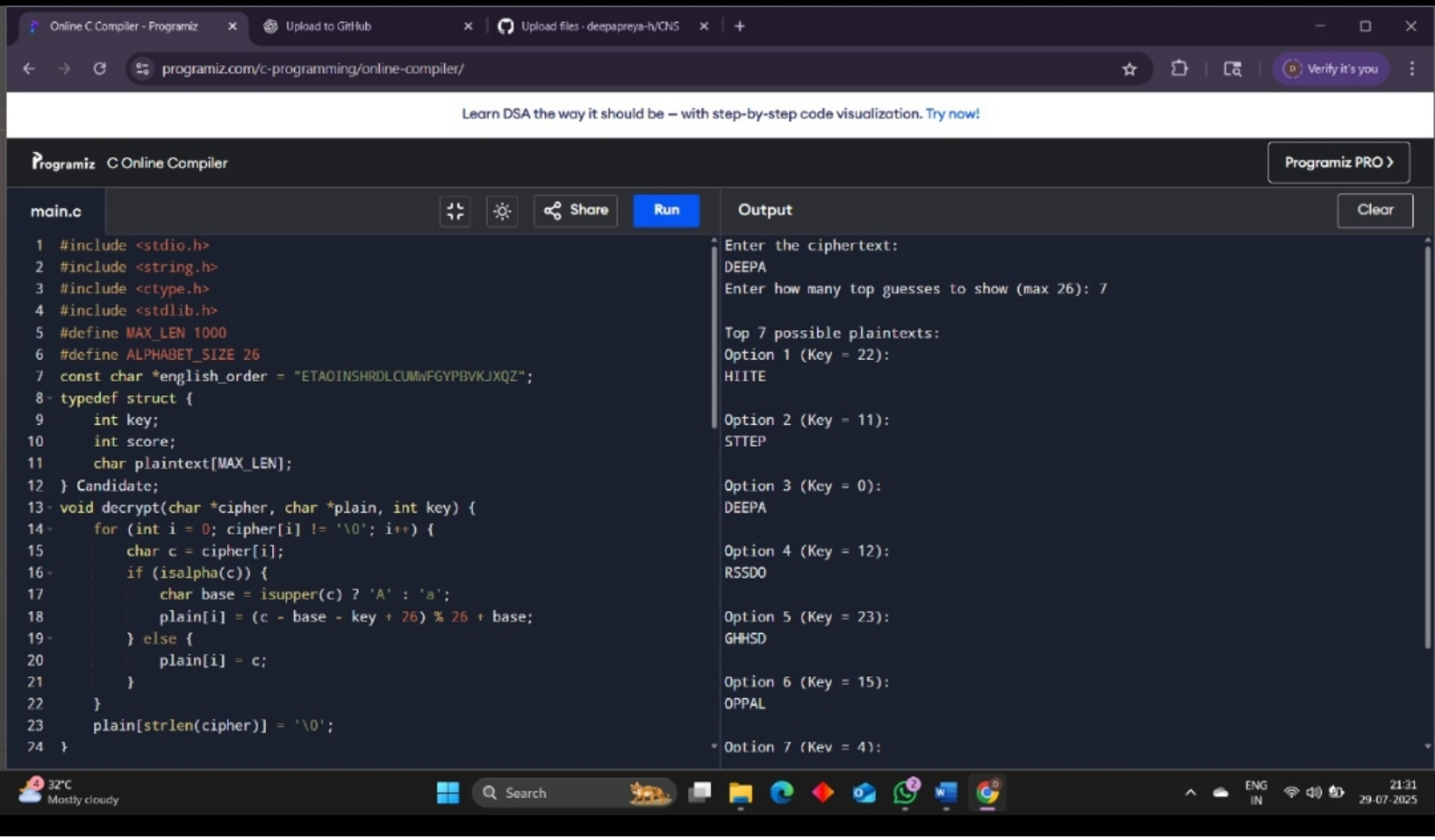
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Programiz C Online Compiler
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main.c
Share
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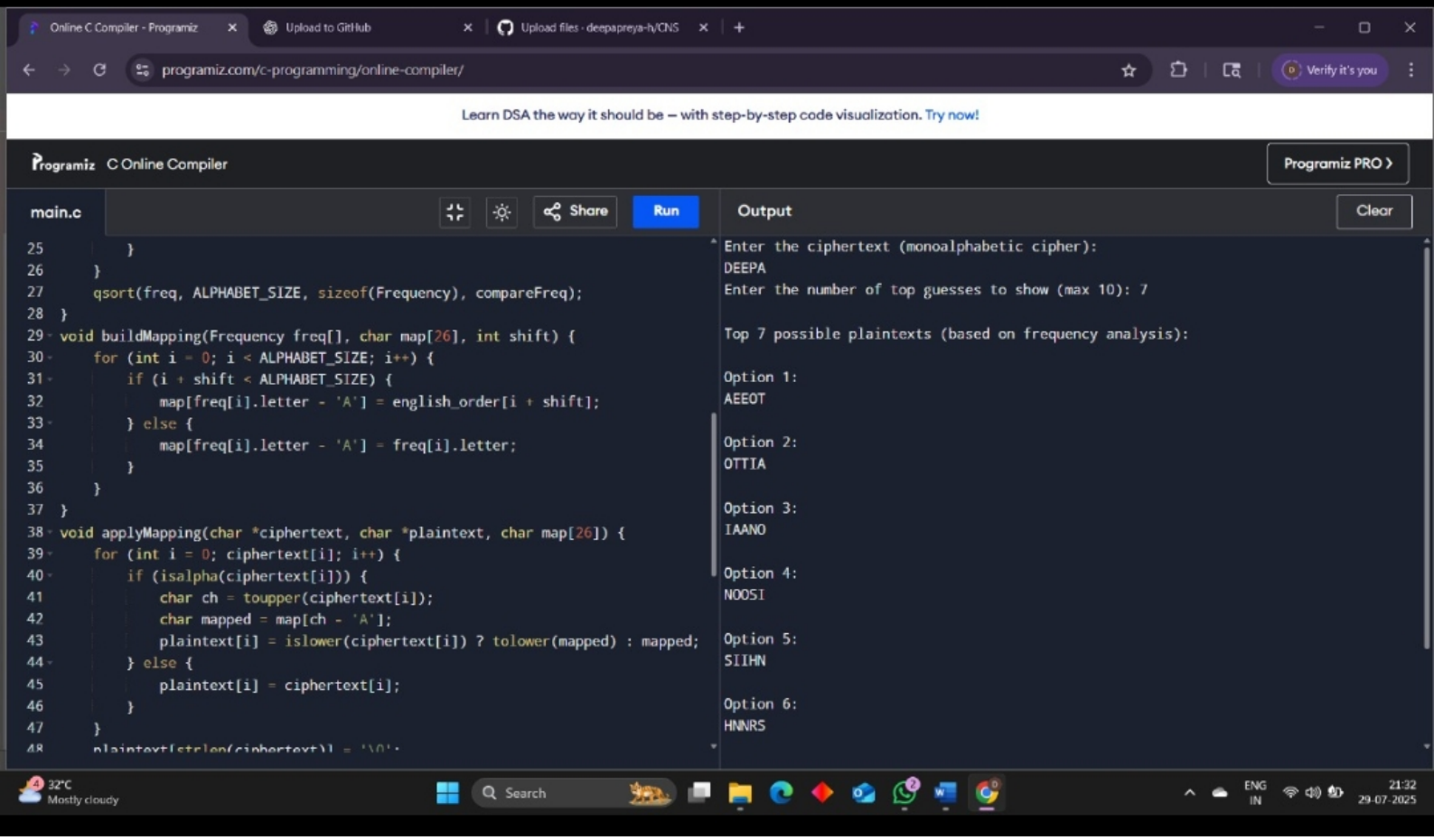
Clear
#include <stdio.h>
#include <string.h>
#include <ctype.h>
#include <stdlib.h>
#define MAX_LEN 1000
#define ALPHABET_SIZE 26
const char *english_order = "ETAOINSHRDLCUMWFGYPBVKJXQZ";
typedef struct {
int key;
int score;
char plaintext[MAX_LEN];
} Candidate;
void decrypt(char *cipher, char *plain, int key) {
for (int i = 0; cipher[i] != '\0'; i++) {
char c = cipher[i];
if (isalpha(c)) {
char base = isupper(c) ? 'A' : 'a';
plain[i] = (c - base - key + 26) % 26 + base;
} else {
plain[i] = c;
}
}
plain[strlen(cipher)] = '\0';
}
Enter the ciphertext:
DEEPA
Enter how many top guesses to show (max 26): 7
Top 7 possible plaintexts:
Option 1 (Key = 22):
HIITE
Option 2 (Key = 11):
STTEP
Option 3 (Key = 0):
DEEPA
Option 4 (Key = 12):
RSSDO
Option 5 (Key = 23):
GHHSD
Option 6 (Key = 15):
OPPAL
Option 7 (Key = 4):
32°C
Mostly cloudy
Search
ENG
IN
21:31
29-07-2025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main.c
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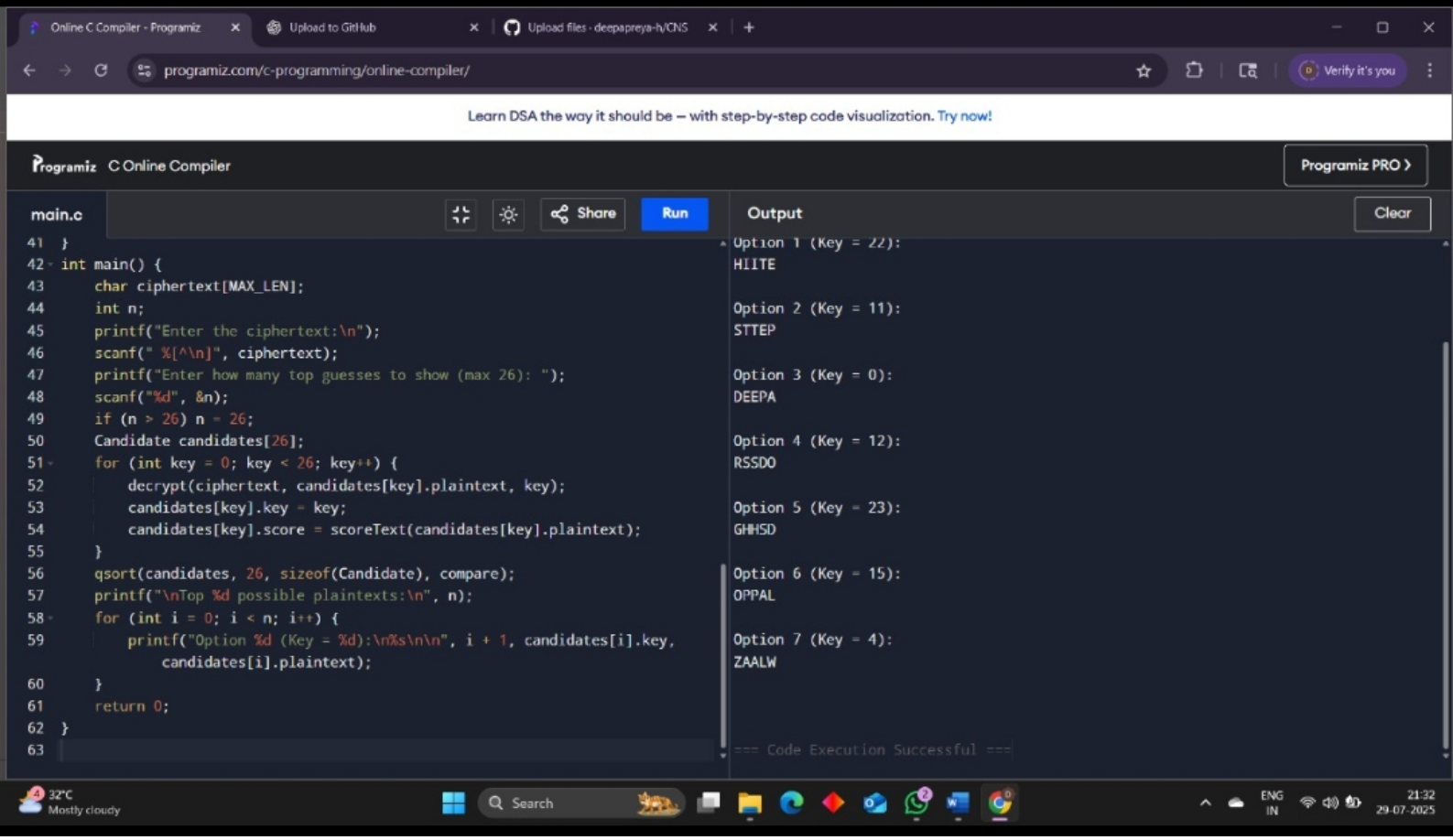
Output
Clear
}
}
qsort(freq, ALPHABET_SIZE, sizeof(Frequency), compareFreq);
}
void buildMapping(Frequency freq[], char map[26], int shift) {
for (int i = 0; i < ALPHABET_SIZE; i++) {
if (i + shift < ALPHABET_SIZE) {
map[freq[i].letter - 'A'] = english_order[i + shift];
} else {
map[freq[i].letter - 'A'] = freq[i].letter;
}
}
}
void applyMapping(char *ciphertext, char *plaintext, char map[26]) {
for (int i = 0; ciphertext[i]; i++) {
if (isalpha(ciphertext[i])) {
char ch = toupper(ciphertext[i]);
char mapped = map[ch - 'A'];
plaintext[i] = islower(ciphertext[i]) ? tolower(mapped) : mapped;
} else {
plaintext[i] = ciphertext[i];
}
}
Enter the ciphertext (monoalphabetic cipher):
DEEPA
Enter the number of top guesses to show (max 10): 7
Top 7 possible plaintexts (based on frequency analysis):
Option 1:
AEEOT
Option 2:
OTTIA
Option 3:
IAANO
Option 4:
NOOSI
Option 5:
SIIHN
Option 6:
HNNRS
32°C
Mostly cloudy
Search
ENG
IN
21:32
29-07-2025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Programiz C Online Compiler
Programiz PRO
main.c
Share
Run
Output
Clear
}
int main() {
char ciphertext[MAX_LEN];
int n;
printf("Enter the ciphertext:\n");
scanf(" %[^\n]", ciphertext);
printf("Enter how many top guesses to show (max 26): ");
scanf("%d", &n);
if (n > 26) n = 26;
Candidate candidates[26];
for (int key = 0; key < 26; key++) {
decrypt(ciphertext, candidates[key].plaintext, key);
candidates[key].key = key;
candidates[key].score = scoreText(candidates[key].plaintext);
}
qsort(candidates, 26, sizeof(Candidate), compare);
printf("\nTop %d possible plaintexts:\n", n);
for (int i = 0; i < n; i++) {
printf("Option %d (Key = %d):\n%s\n\n", i + 1, candidates[i].key,
candidates[i].plaintext);
}
return 0;
}
Option 1 (Key = 22):
HIITE
Option 2 (Key = 11):
STTEP
Option 3 (Key = 0):
DEEPA
Option 4 (Key = 12):
RSSDO
Option 5 (Key = 23):
GHHSD
Option 6 (Key = 15):
OPPAL
Option 7 (Key = 4):
ZAALW
=== Code Execution Successful ===
32°C
Mostly cloudy
Search
ENG
IN
21:32
29-07-2025