

LAPORAN TUGAS KECIL I

PENYELESAIAN *WORD SEARCH PUZZLE*

DENGAN ALGORITMA *BRUTE FORCE*

Laporan dibuat untuk memenuhi salah satu tugas mata kuliah

IF2211 Strategi Algoritma



Disusun oleh:

Dimas Shidqi Parikesit 13520087

PROGRAM STUDI TEKNIK INFORMATIKA

SEKOLAH TEKNIK ELEKTRO DAN INFORMATIKA

INSTITUT TEKNOLOGI BANDUNG

2022

DAFTAR ISI

DAFTAR ISI	1
Algoritma Brute Force	2
Source Program	3
Screenshot Input dan Output	10
Link Drive Kode Program	27
Checklist	27
Daftar Referensi	28

Algoritma Brute Force

Word Search Puzzle adalah permainan kata berupa kumpulan huruf yang dimasukkan ke dalam kisi berbentuk persegi atau persegi panjang. Salah satu cara menyelesaikan permainan *word search puzzle* adalah dengan menggunakan algoritma *brute force* dengan langkah-langkah penyelesaian sebagai berikut.

1. Inisialisasi variabel untuk menyimpan karakter puzzle, kata yang akan dicari, penghitung jumlah dilakukan perbandingan huruf, posisi dan arah kata, dan warna untuk output

Pada program ini digunakan tipe data *array of char* untuk menyimpan karakter puzzle, *vector of string* untuk menyimpan kata yang akan dicari, *integer* untuk menyimpan jumlah dilakukan perbandingan huruf, *struct of integers* untuk menyimpan posisi dan arah, dan *array of integers* untuk menyimpan warna output.

2. Membaca file sesuai nama yang diberikan dan memasukkan data ke dalam variabel yang sesuai
3. Memulai pencatatan waktu
4. Melakukan pencarian kata

Pencarian kata dilakukan dengan melakukan looping untuk semua kata yang dicari, dimana pada tiap looping tersebut dilakukan nested looping pada seluruh karakter puzzle untuk mencari apakah karakter tersebut sama dengan karakter pertama pada kata yang dicari. Apabila kata tersebut sama, pertama dicari apakah panjang kata melebihi batas dimensi puzzle dari indeks tersebut pada arah atas bawah kanan dan kiri. Apabila melebihi batas maka tidak perlu dicek untuk arah tersebut karena tidak mungkin ditemukan kata-kata tersebut. Kemudian melakukan looping dari karakter ke-2 sampai karakter ke n kata tersebut untuk pada delapan arah yang mungkin apakah karakter sama dengan kata yang dicari. Delapan arah tersebut adalah kiri atas, atas, kanan atas, kiri, kanan, kiri bawah, bawah, dan kanan bawah. Apabila karakter sama sampai karakter terakhir, maka posisi, arah, dan warna disimpan dalam variabel. Warna disimpan tiap ditemukan kata, sehingga apabila terdapat dua kata yang saling bertumpukan, warna yang disimpan adalah warna kata yang ditemukan lebih akhir.

5. Output hasil kata yang ditemukan

Output kata dilakukan dengan menulis *array* tempat menyimpan karakter ditambah dengan modifier warna apabila kata tersebut ditemukan.

6. Output waktu eksekusi program dan jumlah perbandingan kata yang dilakukan

Source Program

```
1  #include <string.h>
2
3  #include <array>
4  #include <chrono>
5  #include <fstream>
6  #include <iostream>
7  #include <vector>
8
9  using namespace std;
10 namespace sc = std::chrono;
11
12 int main() {
13     // Comparator tracker
14     int cmpCount = 0;
15
16     // Buka file
17     fstream ifile;
18     string namafile;
19     cout << "Masukkan nama file termasuk ekstensi: ";
20     cin >> namafile;
21     ifile.open(namafile);
22
23     // Masukkan puzzle dan kata ke vector
24     vector<char> raw;
25     vector<string> quest;
26
27     string text;
28     bool space = false;
29     while (getline(ifile, text)) {
30         // Antisipasi kalau txt CLRf
31         if(text[text.length()-1]=='\r'){
32             text.erase(text.length() - 1);
33         }
34
35         // Output the text from the file
36         if (space == false) {
37             if (text.empty()) {
38                 space = true;
39             } else {
40                 for (int i = 0; i < text.length(); i++) {
41                     if (text[i] >= 'A' && text[i] <= 'Z') {
42                         raw.push_back(text[i]);
43                     }
44                 }
45
46                 raw.push_back('0');
47             }
48         } else {
49             quest.push_back(text);
50         }
51     }
52 }
```

Ubuntu Python 3.8.10 64-bit Go 1.17.5 g++ - Build and debug active file (Tucil1_13520087) Dimas

```

48     } else {
49         quest.push_back(text);
50     }
51 }
52 ifile.close();
53
54 // Mulai hitung waktu
55 auto start = sc::high_resolution_clock::now();
56
57 // Cari panjang per baris puzzle
58 int lineLen = 0;
59 while (raw[lineLen] != '\0') {
60     lineLen++;
61 }
62 // Jumlah baris puzzle
63 int line = raw.size() / (lineLen + 1);
64
65 // Masukkan vector puzzle menjadi array yang terstruktur
66 char character[line][lineLen];
67 int counterJ = 0;
68 int counterI = 0;
69 for (int i = 0; i < raw.size(); i++) {
70     if (raw[i] != '\0') {
71         character[counterI][counterJ] = raw[i];
72         counterJ++;
73         if (counterJ > (lineLen - 1)) {
74             counterJ = 0;
75             counterI++;
76         }
77     }
78 }
79
80 // Jalankan algoritma bruteforce
81 // Buat struct untuk menyimpan letak ditemukannya kata
82 struct pos {
83     int baris, kolom, arah;
84 } question[quest.size()];
85 /* Pada arah,
86 1 dari poros ke kiri atas
87 2 dari poros ke atas
88 3 dari poros ke kanan atas
89 4 dari poros ke kiri
90 5 dari poros ke kanan
91 6 dari poros ke kiri bawah
92 7 dari poros ke bawah
93 8 dari poros ke kanan bawah








```

Ubuntu main Python 3.8.10 64-bit Go 1.17.5 0 0 g++ - Build and debug active file (Tucil1_13520087) Dimas

```

93 // dari poros ke kanan bawah
94 */
95
96 // Menyimpan apakah indeks tertentu merupakan jawaban atau tidak
97 int colored[line][lineLen];
98 memset(colored, 0, sizeof(colored[0][0]) * line * lineLen);
99 int currColor = 0;
100
101 for (int x = 0; x < quest.size(); x++) {
102     char first = quest[x][0];
103     int questLen = quest[x].length();
104     question[x].baris = -1;
105     question[x].kolom = -1;
106     question[x].arah = -1;
107
108     // Looping semua puzzle cari character yang sama
109     for (int i = 0; i < line; i++) {
110         for (int j = 0; j < lineLen; j++) {
111             if (question[x].arah == -1) {
112                 // Kalau ada character yang sama dicek lainnya
113                 cmpCount++;
114                 if (character[i][j] == first) {
115                     // Cek untuk tiap arah apakah ada yang benar
116                     bool bisaKiri = (j + 1 - questLen >= 0);
117                     bool bisaKanan = (j + questLen <= lineLen);
118                     bool bisaAtas = (i + 1 - questLen >= 0);
119                     bool bisaBawah = (i + questLen <= line);
120
121                     bool foundWord = false;
122                     bool foundChar = true;
123
124                     // Cek arah 1 Kiri Atas
125                     int progress = 0;
126                     if (bisaKiri && bisaAtas) {
127                         while (foundWord == false && foundChar == true && progress < (questLen - 1)) {
128                             progress++;
129                             cmpCount++;
130                             if (character[i - progress][j - progress] != quest[x][progress]) {
131                                 foundChar = false;
132                             }
133                             if (foundChar == true && progress == questLen - 1) {
134                                 foundWord = true;
135                                 question[x].baris = i;
136                                 question[x].kolom = j;
137                                 question[x].arah = 1;
138                                 for (int k = 0; k < questLen; k++) {
139                                     colored[i - k][j - k] = (currColor % 6) + 31;
140                                 }
141                                 currColor++;

```

Ubuntu  main  Python 3.8.10 64-bit Go 1.17.5  0  0  g++ - Build and debug active file (Tucil1_13520087)  Dimas 

```

141         currColor++;
142     }
143 }
144 }
145
146 // Cek arah 2 Atas
147 progress = 0;
148 if (bisaAtas) {
149     foundChar = true;
150     while (foundWord == false && foundChar == true && progress < (questLen - 1)) {
151         progress++;
152         cmpCount++;
153         if (character[i - progress][j] != quest[x][progress]) {
154             foundChar = false;
155         }
156         if (foundChar == true && progress == questLen - 1) {
157             foundWord = true;
158             question[x].baris = i;
159             question[x].kolom = j;
160             question[x].arah = 2;
161             for (int k = 0; k < questLen; k++) {
162                 colored[i - k][j] = (currColor % 6) + 31;
163             }
164             currColor++;
165         }
166     }
167 }
168
169 // Cek arah 3 Kanan Atas
170 progress = 0;
171 if (bisaKanan && bisaAtas) {
172     foundChar = true;
173     while (foundWord == false && foundChar == true && progress < (questLen - 1)) {
174         progress++;
175         cmpCount++;
176         if (character[i - progress][j + progress] != quest[x][progress]) {
177             foundChar = false;
178         }
179         if (foundChar == true && progress == questLen - 1) {
180             foundWord = true;
181             question[x].baris = i;
182             question[x].kolom = j;
183             question[x].arah = 3;
184             for (int k = 0; k < questLen; k++) {
185                 colored[i - k][j + k] = (currColor % 6) + 31;
186             }
187             currColor++;
188         }
189     }
190 }

```

Ubuntu



main



Python 3.8.10 64-bit

Go 1.17.5



0 0



g++ - Build and debug active file (Tucil1_13520087)



Dimas

```

189     }
190 }
191
192 // Cek arah 4 Kiri
193 progress = 0;
194 if (bisaKiri) {
195     foundChar = true;
196     while (foundWord == false && foundChar == true && progress < (questLen - 1)) {
197         progress++;
198         cmpCount++;
199         if (character[i][j - progress] != quest[x][progress]) {
200             foundChar = false;
201         }
202         if (foundChar == true && progress == questLen - 1) {
203             foundWord = true;
204             question[x].baris = i;
205             question[x].kolom = j;
206             question[x].arah = 4;
207             for (int k = 0; k < questLen; k++) {
208                 colored[i][j - k] = (currColor % 6) + 31;
209             }
210             currColor++;
211         }
212     }
213 }
214
215 // Cek arah 5 Kanan
216 progress = 0;
217 if (bisaKanan) {
218     foundChar = true;
219     while (foundWord == false && foundChar == true && progress < (questLen - 1)) {
220         progress++;
221         cmpCount++;
222         if (character[i][j + progress] != quest[x][progress]) {
223             foundChar = false;
224         }
225         if (foundChar == true && progress == questLen - 1) {
226             foundWord = true;
227             question[x].baris = i;
228             question[x].kolom = j;
229             question[x].arah = 5;
230             for (int k = 0; k < questLen; k++) {
231                 colored[i][j + k] = (currColor % 6) + 31;
232             }
233             currColor++;
234         }
235     }
236 }









```

Ubuntu main Python 3.8.10 64-bit Go 1.17.5 0 0 g++ - Build and debug active file (Tucil1_13520087) Dimas


```

236     }
237
238     // Cek arah 6 Kiri Bawah
239     progress = 0;
240     if (bisaKiri && bisaBawah) {
241         foundChar = true;
242         while (foundWord == false && foundChar == true && progress < (questLen - 1)) {
243             progress++;
244             cmpCount++;
245             if (character[i + progress][j - progress] != quest[x][progress]) {
246                 foundChar = false;
247             }
248             if (foundChar == true && progress == questLen - 1) {
249                 foundWord = true;
250                 question[x].baris = i;
251                 question[x].kolom = j;
252                 question[x].arah = 6;
253                 for (int k = 0; k < questLen; k++) {
254                     colored[i + k][j - k] = (currColor % 6) + 31;
255                 }
256                 currColor++;
257             }
258         }
259     }
260
261     // Cek arah 7 Bawah
262     progress = 0;
263     if (bisaBawah) {
264         foundChar = true;
265         while (foundWord == false && foundChar == true && progress < (questLen - 1)) {
266             progress++;
267             cmpCount++;
268             if (character[i + progress][j] != quest[x][progress]) {
269                 foundChar = false;
270             }
271             if (foundChar == true && progress == questLen - 1) {
272                 foundWord = true;
273                 question[x].baris = i;
274                 question[x].kolom = j;
275                 question[x].arah = 7;
276                 for (int k = 0; k < questLen; k++) {
277                     colored[i + k][j] = (currColor % 6) + 31;
278                 }
279                 currColor++;
280             }
281         }
282     }
283 }

```

Ubuntu  main  Python 3.8.10 64-bit  Go 1.17.5  0  0  g++ - Build and debug active file (Tucil1_13520087)  Dimas 

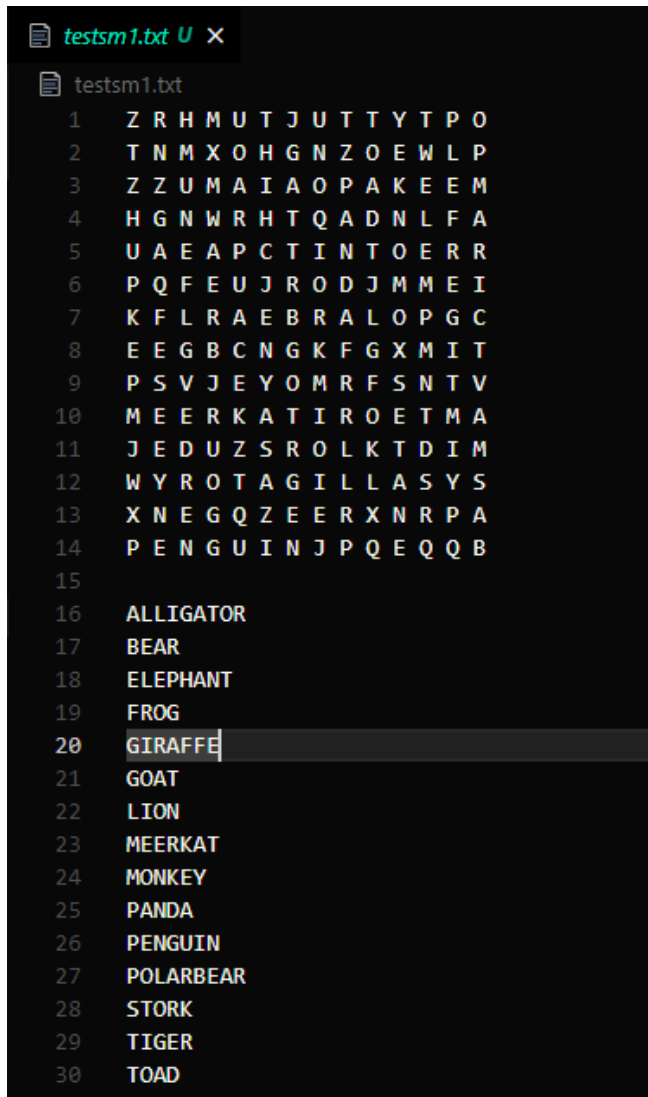
```

284 // Cek arah 8 Kanan Bawah
285 progress = 0;
286 if (bisaKanan && bisaBawah) {
287     foundChar = true;
288     while (foundWord == false && foundChar == true && progress < (questLen - 1)) {
289         progress++;
290         cmpCount++;
291         if (character[i + progress][j + progress] != quest[x][progress]) {
292             foundChar = false;
293         }
294         if (foundChar == true && progress == questLen - 1) {
295             foundWord = true;
296             question[x].baris = i;
297             question[x].kolom = j;
298             question[x].arah = 8;
299             for (int k = 0; k < questLen; k++) {
300                 colored[i + k][j + k] = (currColor % 6) + 31;
301             }
302             currColor++;
303         }
304     }
305 }
306 }
307 }
308 }
309 }
310 }
311
312 for (int i = 0; i < line; i++) {
313     for (int j = 0; j < lineLen; j++) {
314         if (colored[i][j] != 0) {
315             cout << "\033[1m\033[" + to_string(colored[i][j]) + "m" << character[i][j] << "\033[0m";
316             cout << " ";
317         } else {
318             cout << character[i][j] << " ";
319         }
320     }
321     cout << endl;
322 }
323
324 auto end = sc::high_resolution_clock::now();
325 sc::duration<double, std::milli> durasi = end - start;
326 std::cout << "Waktu eksekusi program: " << durasi.count() << " ms" << endl;
327 std::cout << "Total perbandingan huruf: " << cmpCount << endl;
328 return 0;
329 }

```

Screenshot Input dan Output

Small



The screenshot shows a text editor window titled 'testsm1.txt'. The editor contains a word search puzzle solution. The first 14 rows are a grid of letters. The remaining rows (16-30) list the words found in the puzzle. The word 'GIRAFFE' is highlighted on line 20.

```
1  Z R H M U T J U T T Y T P O
2  T N M X O H G N Z O E W L P
3  Z Z U M A I A O P A K E E M
4  H G N W R H T Q A D N L F A
5  U A E A P C T I N T O E R R
6  P Q F E U J R O D J M M E I
7  K F L R A E B R A L O P G C
8  E E G B C N G K F G X M I T
9  P S V J E Y O M R F S N T V
10 M E E R K A T I R O E T M A
11 J E D U Z S R O L K T D I M
12 W Y R O T A G I L L A S Y S
13 X N E G Q Z E E R X N R P A
14 P E N G U I N J P Q E Q Q B
15
16 ALLIGATOR
17 BEAR
18 ELEPHANT
19 FROG
20 GIRAFFE
21 GOAT
22 LION
23 MEERKAT
24 MONKEY
25 PANDA
26 PENGUIN
27 POLARBEAR
28 STORK
29 TIGER
30 TOAD
```

1.

Masukkan nama file termasuk ekstensi: testsm1.txt

Z R H M U T J U T T Y T P O
T N M X O H G N Z O E W L P
Z Z U M A I A O P A K E E M
H G N W R H T Q A D N L F A
U A E A P C T I N T O E R R
P Q F E U J R O D J M M E I
K F L R A E B R A L O P G C
E E G B C N G K F G X M I T
P S V J E Y O M R F S N T V
M E E R K A T I R O E T M A
J E D U Z S R O L K T D I M
W Y R O T A G I L L A S Y S
X N E G Q Z E E R X N R P A
P E N G U I N J P Q E Q Q B

Waktu eksekusi program: 0.134047 ms

Total perbandingan huruf: 1878

```
testsm2.txt U × C++ main.cpp U
testsm2.txt
1 T T B S B M N K J B Z L E L L X
2 I C J N H S C E V I T A S F S W
3 T H T M E D E M I S Z E A T A P
4 A W W W J M B U G L T Z E Y W J
5 N N J B I A H L W R A H R U K E
6 I T Q J N L A C A T A A G I E O
7 C E A R M D I E T L H T W N B N
8 U G I L I T H G L A U H Q R B N
9 Z J D A Q E Z O H G W P F I I R
10 C O T B V U W H A T P I U A R N
11 M O M A O E O R L P Y Q M P T H
12 R A R X E U X V F A C Y U O B L
13 F B E N C Q O T D A S Y O U P G
14 N O D D E G A M R A M Z W G X R
15 M U E E Z L K T A S R C V V X B
16 Y K C O R I M A M U L V U T Z G
17
18 ALIEN
19 ARMAGEDDON
20 BRAVEHEART
21 EVITA
22 GLADIATOR
23 GREASE
24 HALLOWEEN
25 ROCKY
26 SAW
27 TITANIC
28 TWILIGHT
29 WATCHMEN
```

2.

Masukkan nama file termasuk ekstensi: testsm2.txt

T T B S B M N K J B Z L E L L X
I C J N H S C E V I T A S F S W
T H T M E D E M I S Z E A T A P
A W W W J M B U G L T Z E Y W J
N N J B I A H L W R A H R U K E
I T Q J N L A C A T A A G I E O
C E A R M D I E T L H T W N B N
U G I L I T H G L A U H Q R B N
Z J D A Q E Z O H G W P F I I R
C O T B V U W H A T P I U A R N
M O M A O E O R L P Y Q M P T H
R A R X E U X V F A C Y U O B L
F B E N C Q O T D A S Y O U P G
N O D D E G A M R A M Z W G X R
M U E E Z L K T A S R C V V X B
Y K C O R I M A M U L V U T Z G

Waktu eksekusi program: 0.176277 ms

Total perbandingan huruf: 1525

```
C++ main.cpp U testsm3.txt U X
testsm3.txt
1  F Y X S C E L V O Q C A C R Q N T
2  V M R V L N E T X P T H P I M B U
3  X F W R G Z A A X O I A E P D Q N
4  Y V T P E M T A X R A U U R L B O
5  R X E P O B L U X A Z X B R R E C
6  W A I T M Z W C Z N M E L O N Y O
7  R N H U E I Y A J G X D U L J Z C
8  J B L J Z R B D R E X L C F J K B
9  Q P V J J N H J Z T G I K A G P O
10 P V E M S U Y P R B S V E Y M S S
11 C N P X I D X E N H J B O U M A M
12 J F A H Q C U V F T H X Z T E O D
13 S I R O N O M E L S N K K T C N I
14 I G G L S C H M Y W Z M B N A Q X
15 P Q K R X G C X W E E T U S W D Y
16 M T S B A N A N A V K O G R M A L
17 Y Q C A Z M D Z R N A X W K V I X
18
19 APPLE
20 BANANA
21 CHERRY
22 COCONUT
23 GRAPE
24 LEMON
25 MELON
26 ORANGE
27 PEAR
28 PLUM
29 STRAWBERRY
30 TOMATO
```

3.

Masukkan nama file termasuk ekstensi: testsm3.txt

F Y X S C E L V O Q C A C R Q N T
V M R V L N E T X P T H P I M B U
X F W R G Z A A X O I A E P D Q N
Y V T P E M T A X R A U U R L B O
R X E P O B L U X A Z X B R R E C
W A I T M Z W C Z N M E L O N Y O
R N H U E I Y A J G X D U L J Z C
J B L J Z R B D R E X L C F J K B
Q P V J J N H J Z T G I K A G P O
P V E M S U Y P R B S V E Y M S S
C N P X I D X E N H J B O U M A M
J F A H Q C U V F T H X Z T E O D
S I R O N O M E L S N K K T C N I
I G G L S C H M Y W Z M B N A Q X
P Q K R X G C X W E E T U S W D Y
M T S B A N A N A V K O G R M A L
Y Q C A Z M D Z R N A X W K V I X

Waktu eksekusi program: 0.130099 ms

Total perbandingan huruf: 1773

Medium

```
testmed1.txt U x C++ main.cpp U
testmed1.txt
1 X I N Z Q Z P N D I E I S U H G E N B G
2 O U G C T O P X S R B K R W F G F Z K S
3 S O L J V R F D K B O O L D B N V U A A
4 F J W A E R N S T M Y O F A C H J P H R
5 R J G H Y X H F E Q Y K V T U J C C A D
6 F S P L H S B N P A Z O A R Y A Y Y E P
7 K Y O D Z A R L J I C E V P N V Q F K K
8 C I M O C B E F R E Y N A Z E A S T R A
9 J O K F H N A E B F Q F F V N F V F H Y
10 P Y E A A L C O R J U K A N D A F X W O
11 X T R W M B H Q I K D W H A B M O U M I
12 T B R C B S M G M U T K N C V T O L D N
13 U Q R G E Q B L S N P A I C Y O A T L W
14 T T E J R C X R T H R W Q L P C S C H T
15 N U P R S N K R O V K D V T L H G G E Z
16 M B I I E N U E N M Y E G A S J Y M T B
17 Q E V O M N N Y E K N C L Q P Q O O O Z
18 V T N Z O I R K X H H Q X A K M R Y C F
19 G R F C X J D S Y B Q H M C D D Z V D X
20 E S S S W J R X U E Y C X K K G J J Y W
21
22 ASTRA
23 BREACH
24 BRIMSTONE
25 CHAMBER
26 CYPHER
27 JETT
28 KAYO
29 KILLJOY
30 NEON
31 OMEN
32 PHOENIX
33 RAZE
34 REYNA
35 SAGE
36 SKYE
37 SOVA
38 VIPER
39 YORU
```

1.

Masukkan nama file termasuk ekstensi: testmed1.txt

X I N Z Q Z P N D I E I S U H G E N B G
O U G C T O P X S R B K R W F G F Z K S
S O L J V R F D K B O O L D B N V U A A
F J W A E R N S T M Y O F A C H J P H R
R J G H Y X H F E Q Y K V T U J C C A D
F S P L H S B N P A Z O A R Y A Y Y E P
K Y O D Z A R L J I C E V P N V Q F K K
C I M O C B E F R E Y N A Z E A S T R A
J O K F H N A E B F Q F F V N F V F H Y
P Y E A A L C O R J U K A N D A F X W O
X T R W M B H Q I K D W H A B M O U M I
T B R C B S M G M U T K N C V T O L D N
U Q R G E Q B L S N P A I C Y O A T L W
T T E J R C X R T H R W Q L P C S C H T
N U P R S N K R O V K D V T L H G G E Z
M B I I E N U E N M Y E G A S J Y M T B
Q E V O M N N Y E K N C L Q P Q O O O Z
V T N Z O I R K X H H Q X A K M R Y C F
G R F C X J D S Y B Q H M C D D Z V D X
E S S S W J R X U E Y C X K K G J J Y W

Waktu eksekusi program: 0.170285 ms

Total perbandingan huruf: 4482

```
C++ main.cpp U testmed2.txt U X
testmed2.txt
1 J S D A E R B R E G N I G E U O H F S Q O W K O
2 R O I Q T J G T Y W D Q C N V P T N H S Z X X I
3 K E R H S A P B J N V I K L X K O T W P X H P H
4 L U O R D Z K Y L I M M L T J W O A E M B N Z C
5 X O B C M J G J N D W O I H W Y H X U P C Q Y C
6 D H O Q G S P A N P D V Y H H P F Y L U P X L O
7 N L M Q U I B I R N E T I E K A H P Y Y R E U N
8 O C O C Z X L V S U P T W U F E D P L O R D G I
9 S Q N M B B V P G W E R Y A S F J V B O K H U P
10 T M S C K Q A D Z A M D V J U V T J N Q A K K D
11 A I I P M L R E N Q E S G L D W X L M O Z F U G
12 E O E E G H B O I M E X J H C O U F D W R W Z S
13 R K U T J A I T X U V Z P T L M A G Z P Q K A S
14 Q T R E N F V G F K F B C I N D E R E L L A Q E
15 Y G X R K M M Y D A L F P P L P D G K W L E H C
16 Q E X P G O V A U D R C V L B C Z R F O V I O N
17 A X K A G Q W Z K G H Q M Q W P M E A E B D R I
18 F M R N A C J T N U A W U R U R C K P G E Z S R
19 U R J G O V D Q O R L T H A Q N F P Q J O K K P
20 C P G S N D N S M M B S S L A K L O S F J N L L
21 T M I P L U W U X V W M Q E E D S S U P J T F C
22 Z F A W J E B R O J Z L G E E Z Y A O L E Q K R
23 K K Y K P K Q N F D W J A Q E U T C O K V M A C
24 F D K C G P E X F J V F K Y V O G T J K C U V U
25
26 BLINDMICE
27 CINDERELLA
28 DONKEY
29 DRAGON
30 FARQUAAD
31 FIONA
32 GEPPETTO
33 GINGERBREAD
34 HOOD
35 LORD
36 MONSIEUR
37 PETERPAN
38 PINOCCHIO
39 PRINCESS
40 PUSS
```

2.

Masukkan nama file termasuk ekstensi: testmed2.txt

J S D A E R B R E G N I G E U O H F S Q O W K O
R O I Q T J G T Y W D Q C N V P T N H S Z X X I
K E R H S A P B J N V I K L X K O T W P X H P H
L U O R D Z K Y L I M M L T J W O A E M B N Z C
X O B C M J G J N D W O I H W Y H X U P C Q Y C
D H O Q G S P A N P D V Y H H P F Y L U P X L O
N L M Q U I B I R N E T I E K A H P Y Y R E U N
O C O C Z X L V S U P T W U F E D P L O R D G I
S Q N M B B V P G W E R Y A S F J V B O K H U P
T M S C K Q A D Z A M D V J U V T J N Q A K K D
A I I P M L R E N Q E S G L D W X L M O Z F U G
E O E E G H B O I M E X J H C O U F D W R W Z S
R K U T J A I T X U V Z P T L M A G Z P Q K A S
Q T R E N F V G F K F B C I N D E R E L L A Q E
Y G X R K M M Y D A L F P P L P D G K W L E H C
Q E X P G O V A U D R C V L B C Z R F O V I O N
A X K A G Q W Z K G H Q M Q W P M E A E B D R I
F M R N A C J T N U A W U R U R C K P G E Z S R
U R J G O V D Q O R L T H A Q N F P Q J O K K P
C P G S N D N S M M B S S L A K L O S F J N L L
T M I P L U W U X V W M Q E E D S S U P J T F C
Z F A W J E B R O J Z L G E E Z Y A O L E Q K R
K K Y K P K Q N F D W J A Q E U T C O K V M A C
F D K C G P E X F J V F K Y V O G T J K C U V U

Waktu eksekusi program: 0.250579 ms

Total perbandingan huruf: 5040

```
testmed3.txt U X
testmed3.txt
1  X P D R X N Q C L W Z J I H Z X K L P G M Y
2  F I L E F H I W I C O S Z T X W Q W R V B P
3  D L J D G Y A K H S Y O G C D K M M I J Z F
4  U Q B Y H N I E A R C W K J P Y Z L D M T F
5  C Z T U S Z W A H N S T Q I J W F L F B O G
6  G H D L M B S O S B A R K F E N N Z M J J T
7  U A M G A X B P Z C H V I M D E H S O O F Q
8  F U V C M I O X V T B Y S M I A V X J K Z B
9  H A C I M Z Z O I M B F Y E K R S J S F L I
10 E A A X O C R G K Y V S U X Z E O R I I J F
11 A V L D D S Q D C A D W P D Z Y Y E B D E B
12 H D R H O W M O Q C A S H L F Z M O A I E L
13 J Z I K S Y G W O A I I W J I H N K H Q A C
14 B Y F L Q V I R B T T R J W E E K C T F J Y
15 G Q V D H C O K H F G W M C K I X E P J K H
16 O D F Y E J R G H N M V O E P Z P U F H U N
17 T P E K E C R O F A D E A T H S T A R A W F
18 R R U M U I P K H W M C Q O M N Q Y V N J B
19 S L X C P S N M S I P A N D W L G L N S G Z
20 A C H O A I K Z G B O C N C L C R X E O U U
21 Q W W V I G R H M O N S F L E U M F B L J W
22 S K Y W A L K E R K O M G L P G P K N O J O
23
24  ANAKIN
25  CHEWBACCA
26  DEATHSTAR
27  EMPIRE
28  FORCE
29  HANSOLO
30  JEDI
31  KENOBI
32  LEIA
33  LUKE
34  OBIWAN
35  SITH
36  SKYWALKER
37  WOOKIEE
38  YODA
```

3.

Masukkan nama file termasuk ekstensi: testmed3.txt

X P D R X N Q C L W Z J I H Z X K L P G M Y
F I L E F H I W I C O S Z T X W Q W R V B P
D L J D G Y A K H S Y O G C D K M M I J Z F
U Q B Y H N I E A R C W K J P Y Z L D M T F
C Z T U S Z W A H N S T Q I J W F L F B O G
G H D L M B S O S B A R K F E N N Z M J J T
U A M G A X B P Z C H V I M D E H S O O F Q
F U V C M I O X V T B Y S M I A V X J K Z B
H A C I M Z Z O I M B F Y E K R S J S F L I
E A A X O C R G K Y V S U X Z E O R I I J F
A V L D D S Q D C A D W P D Z Y Y E B D E B
H D R H O W M O Q C A S H L F Z M O A I E L
J Z I K S Y G W O A I I W J I H N K H Q A C
B Y F L Q V I R B T T R J W E E K C T F J Y
G Q V D H C O K H F G W M C K I X E P J K H
O D F Y E J R G H N M V O E P Z P U F H U N
T P E K E C R O F A D E A T H S T A R A W F
R R U M U I P K H W M C Q O M N Q Y V N J B
S L X C P S N M S I P A N D W L G L N S G Z
A C H O A I K Z G B O C N C L C R X E O U U
Q W W V I G R H M O N S F L E U M F B L J W
S K Y W A L K E R K O M G L P G P K N O J O

Waktu eksekusi program: 0.266429 ms

Total perbandingan huruf: 5260

Large

```
main.cpp U testlg1.txt U
testlg1.txt
1 X R A N Q N G I L D H V U P N D J R L N X H M M D I Y G N D C H
2 Q C I E M V N F U Q T E F J Q H J I X J J I Y X Q I A M E A E R
3 U R S G P C I E D Y S J F S J C K M L W S C A U Q X J G F N V P
4 R S K E E D Z E X M W Y O N M E U R I A P S E D G T R V E M U U
5 N N Z K A M I T M C W K D A N J K E S G P X R Z Y E D B Z A E I
6 T G G R O P T A K R E W T Q X J P P A W Y R N A E X F V S S Q J
7 E A U L Q E A T D R H E X K U O B A C L X V A M X W E V D G J E
8 K P R D G T M I C A T F D R W M Z X J G F R P B Y Q U C K T Z E
9 M N E C T F A V X P M K I I V O C G W L P J X I G D P K J E B P
10 B O O M U W R A C A Z G P T N U Z P H C A C G D Q N I Q V X A J
11 G O I F P A D R M Z H X I I T G Q Z Y S Z K Y E N T I P U G X M
12 F Q N Y X Z E G C D D E E H W Y O F P O B D C X X T Q L B Q Z I
13 A A F K K I C R U S Z D Y V L A V S J E B Q K T C U D O D W H I
14 T V J Q R E M E U E L V R P I F J Y I G D G F R L S F G J N T J
15 P F V W X O B I Q B D Z E B O S V D M N B B M O T N E M E M O F
16 K T G Z O J O C I C P R N S Z A S E Y M D X T U V B P V U K T F
17 U E V Z Y Z V D T G S B N P R Q M E J P V U Y S L O E Y M A J F
18 J T D Z R Q C N D G E D A G M G W X S I Q O C L C H H M R W W I
19 U D C F T F E R M N C Z C E X A C E R B A T E E A H I D F C E V
20 O W N L Q M J L E H I N D M Q A C A Q K O I L A D R I Q X R X R
21 N I R V E J W F P P M C T G V U G C R F B I N P G C V Y F E E S
22 O L I T F R A L G P M P D I W L L A O P N D L L A J F D Q A R V
23 Y Q A Q X C G V T Q N E G D Q Y R Q I N I L I D O P H A T K T B
24 L B F Y T B F Y P U P N T A S X R P U N H P G E O U M P F I I W
25 A N H O V E N Y U M M F J R H X V G N N S J L A C O F I B N N U
26 P V R Q A U O E T U O T V A Y E Q A D O P T E D S S K K B G G D
27 L N W T J Y B D X S M R Y P Y I Z P R E Y M H K C B V T L O I X
28 Z I U K G C V W H O I F J Z P D M O K H I J K B H V E Z E D U I
29 C R I S H A D F E Q E F Y L B E E F H Y A Q J S M B D V G W J Q
30 E V D R R Z Q W Q H S B Q C K M K M O C X A Q B R M J Z W D P
31 F U U C I T Y S C A P E O B J W M A U A X B R P U B A P L U A R
32 D L T Z M Q D N Q M O C I J Y T Z C V U H S Z Q C B K B K F I M
33
34 ABATEMENT
35 ADOPTED
36 AGAINST
37 AMBIDEXTROUS
38 BENEFACITOR
39 BIFOCAL
40 BUREAUCRAT
41 CANNERY
42 CHEF
43 CITYSCAPE
44 CLERGY
45 CREAKING
46 DEGREE
47 DESPAIR
48 DOORKNOB
49 DRAMATIZING
50 DRAT
51 EXACERBATE
52 EXCEEDING
53 EXERTING
54 FEATURE
55 FEEBLY
56 FONDLING
57 GRAVITATE
58 GRAVY
59 HIND
60 INDUCED
61 JEEP
62 LIKEN
63 MEMENTO
64 OBSESSIVE
65 PARADIGM
66 PILGRIM
```

1.

Masukkan nama file termasuk ekstensi: testlg1.txt

X R A N Q N G I L D H V U P N D J R L N X H M M D I Y G N D C H
Q C I E M V N F U Q T E F J Q H J I X J J I Y X Q I A M E A E R
U R S G P C I E D Y S J F S J C K M L W S C A U Q X J G F N V P
R S K E E D Z E X M W Y O N M E U R I A P S E D G T R V E M U U
N N Z K A M I T M C W K D A N J K E S G P X R Z Y E D B Z A E I
T G G R O P T A K R E W T Q X J P P A W Y R N A E X F V S S Q J
E A U L Q E A T D R H E X K U O B A C L X V A M X W E V D G J E
K P R D G T M I C A T F D R W M Z X J G F R P B Y Q U C K T Z E
M N E C T F A V X P M K I I Y O C G W L P J X I G D P K J E B P
B O O M U W R A C A Z G P T N U Z P H C A C G D Q N I Q V X A J
G O I F P A D R M Z H X I I T G Q Z Y S Z K Y E N T I P U G X M
F Q N Y X Z E G C D D E E H W Y O F P O B D C X X T Q L B Q Z I
A A F K K I C R U S Z D Y V L A V S J E B Q K T C U D O D W H I
T V J Q R E M E U E L V R P I F J Y I G D G F R L S F G J N T J
P F V W X O B I Q B D Z E B O S V D M N B B M O T N E M E M O F
K T G Z O J O C I C P R N S Z A S E Y M D X T U V B P Y U K T F
U E V Z Y Z V D T G S B N P R Q M E J P V U Y S L O E Y M A J F
J T D Z R Q C N D G E D A G M G W X S I Q O C L C H H M R W W I
U D C F T F E R M N C Z C E X A C E R B A T E E A H I D F C E V
O W N L Q M J L E H I N D M Q A C A Q K O I L A D R I Q X R X R
N I R V E J W F P P M C T G V U G C R F B I N P G C V Y F E E S
O L I T F R A L G P M P D I W L L A O P N D L L A J F D Q A R V
Y Q A Q X C G V T Q N E G D Q Y R Q I N I L I D O P H A T K T B
L B F Y T B F Y P U P N T A S X R P U N H P G E O U M P F I I W
A N H O V E N Y U M M F J R H X V G N N S J L A C O F I B N N U
P V R Q A U O E T U O T V A Y E Q A D O P T E D S S K K B G G D
L N W T J Y B D X S M R Y P Y I Z P R E Y M H K C B V T L O I X
Z I U K G C V W H O I F J Z P D M O K H I J K B H V E Z E D U I
C R I S H A D F E Q E F Y L B E E F H Y A Q J S M B D V G W J Q
E V D R R Z Q W Q H S B Q C K K M K M O C X A Q B R M J Z W D P
F U U C I T Y S C A P E O B J W M A U A X B R P U B A P L U A R
D L T Z M Q D N Q M O C I J Y T Z C V U H S Z Q C B K B K F I M

Waktu eksekusi program: 0.410975 ms

Total perbandingan huruf: 22960


```
testlg2.txt U X
testlg2.txt
1 N B A Q D H D U X N J C C G Z R K C U X D U X Z O B B A O T D D H Z
2 O J N Y E S Q E R D A G R M O C Y H R G E Q H F A U I B O O S T E R
3 I C T F L I U X Z E Y E G B H E J R L K B I K K Z S Z C J C F V K W
4 T U H A Y U K Q Y I E D S U Y X X I T C P N L Y A M L A J P Q O A P
5 U Y F V Y G L J M N N E S E O K D S M C E Z B N B K G X Z F R G Q J
6 C Y X F E N U M H M S A C O J E A T E E X N A K R O F H C T I P G O
7 E R X U I I U O H S O X M F Z I N E E E M H I H B P Z E O J K Y I V
8 S T I E D T U B I K J N V U Q H J N V N T A H P Y M S S E L P L E H
9 O O O L O S N O D U T Z O K H M B E L U Y U R N I H H C J R L S M L
10 R G L D E I N O E M Z G Z T F W R D E M I S J U D G M E N T E K A T
11 P I A J Q D X G P F K Y U D H C D Y L I H H R Z D E B T Z O Q W J N
12 L B Q Z O R N V P V M Z D O E E I B M E R S K Q N H T N V B W G W Q
13 M B X U M O P A E P Q C W B L H I X K L F V A E D J N A F X Y L R N
14 J J D V S U G J Z J B F E L B R C S A R S O E N H Y X A I C D J L K
15 T N F D M R Z X A X L W S I A A X T M B Q Z T H K A W F B V Q T H M
16 R M R B I X Z J Y O U F B V R V H Q A C V Y C J G A Q J P T E Y D E
17 B I Z Z Q B O F X C E P F I E D T X O E R C U K F L Z N T E E D L N
18 B J I K F U U C N T N X W O L O J A C K F B A X L L N U G D R A E O
19 G A V E D J O H Y E T D F U O W F N M E K Y T M V G P A A Q A K Q Z
20 I R A C T U M I A L C E D S T Q C I F E V L V I P S N E I G S W Y E
21 V U P Z G C Y W S Q B P K R N E G D O T M F K D X U D I T V Q A K L
22 H K V T B B U U U Y N O I T I S I U Q C A Y W Z M X S K T E A E V D
23 K V N W R F V O E I X D O H O F J N X W L T J P V R W F U T R A E L
24 Q M F Z J B P D B W O D F O E T Q P C R X L Z A F M F Z W U I C S J
25 N Y P L G O G C K V V E R A E X H P N E J C C I Y W Y U M E I M B J
26 H D A F A J V Q P R F A S J Z N X L T U S C G X T Z H V N M I G D R
27 A P Y K V T V G N P G D Y X T C E E I P T F W R B D P W A Y W I E A
28 V E U N T E T Z Y B C D X K E A Q T P H L U S I R B Y T K I D X M H
29 K L G U Z K I E A D H I B M J Q V W F X V I O U A X E M T P X Q U H
30 T U L N Z M Q K R Y F C N A Q S J J Q D V V C B B H C N J G F A Y G
31 J T V R Q X F K Z Y Z P D Z C B O W Q E E S S N N H K Y L A Q H N G
32 B M L M I U V K B M P S B F Z V P T R G A U R S C V B A Y Z U B F O
33 Z V G F A C E T I O U S U L V Y G R G O A B S N D Z G C D K E C F W
34 W T P M A H Q O U V Q P L B N A Q R J N H H I G F H E I F Z W A O I
35
36 ACQUISITION
37 ADMITTING
38 BIGOTRY
39 BIRDSONG
40 BOOSTER
41 CAMPUS
42 CHRISTENED
43 DECIMATE
44 DECLAIM
45 DEVIATE
46 DISTINGUISH
47 EUTHANASIA
48 FACETIOUS
49 FLATTERY
50 GAIT
51 GREENHOUSE
52 HELPLESS
53 HUMANIZED
54 INTOLERABLE
55 KABGAROO
56 MISJUDGMENT
57 MONOTHEISM
58 OBLIVIOUS
59 OBSESSION
60 PITCHFORK
61 PONTIFF
62 PROSECUTION
```

2.

Masukkan nama file termasuk ekstensi: testlg2.txt

NBAQDHDUXNJCCGZRKCUXDUXZOBBAAOTDDHZ
OJNYESQERDAGRMOCYHRGEQHFAUIBOOSTER
ICTFLIUXZEYEBHEJR LKBIKKZSZCJCFVKW
TUHAYUKQYIEDSUYYXI TPCPNLYAMLAJPQOAP
UYFVYGLJMNNESEOKDSMCEZBNBKGXZFRGQJ
CYXFENUMHMSACOJEATEEXNAKROFHCTIPGO
ERXUIIUOHXOMFZINEEEMHIHBPZEOJKYIV
STIEDTUBIKJNVUQHJNVNTAHPYMSSELPLEH
OOOLOSONODUTZOKHMBELUYURNIHH CJRLSML
RGLDEINOEMZGZTFWRDEMISSJUDGMENTTEKAT
PIAJQDXGPFKYUDHCDYLIHHRZDEBTZOQWJN
LBQZORNVPMZDOEEIBMERSKQNH TNV BWGWQ
MBXUMOPAEPQCWB LHI XKL FVAEDJN AFXYLRN
JJDV SUGJZJBFE LBRCSARSOENHYXAICDJLK
TNFDMRZXAXLWSIAAXTMBQZTHKAWFBVQTHM
RMRBIXZJYUUFBV RVHQACVYCJGAQJPT EYDE
BIZZQBQBFXCEPFIEDTXOERCUKFLZNTEEDLN
BJIKFUUCNTNXWLOJACKFBA XLLNUYGDRAEO
GAVEDJOHYETDFUOWFNMEKYTMVGPAAQAKQZ
IRACTUMIALCEDSTQCFEVLVIPSNEIGSWYE
VUPZGCYWSQBPKRNEGDOTMFKDXUDITVQAKL
HKVTBBUUUYNOITISIUQCA YWZMXSKTEAEVD
KVNWR FVOEIXDOHOFJNXWLTJPVRWFUTRAEL
QM FZJBPD BWODFOETQPCRXLZAFMFZWUICSJ
NYP LGO GCKVVERAEXHPNEJCC IYWYUMEIMBJ
HDAFAJ VQPRFA S JZNXLTUSCGXTZHVNMIGDR
APYKV TVGNP GDYXTCEEIPTFWRB DPW AYWIEA
VEUNTE TZYBCDXKEAQTPHLUSIRBYTKIDXMH
KLGUZKI EADHIBMJQVWF XVIOUAXEMTPXQUH
TULNZMQ KRYFCNAQSJJQDVVCBBHCNJGFAYG
JTVRQXFKZY ZPDZCBOWQEESNNHKYLAQHNG
BMLMIUVKBMPSBFZVPTRGAURSCVBAYZUBFO
ZVG FACETIOUSULVYGRGOABSN DZGCDKECFW
WTPMAHQOUVQPLBNAQRJNH HIGFHEIFZWAOI

Waktu eksekusi program: 0.400385 ms

Total perbandingan huruf: 15663

```
testlg3.txt U X
testlg3.txt
1  S N K Q C A H C U I N X P V H T B J Q J H H N B W P F V F G F J O W T
2  F Z I M T I D E A U E M A M X K T B J M U F O U S A S O R Q D Y Y T Q
3  Y S Q F K K A D B A M Z S V D B F P Y G V P I E T Z T A D E U D P J V
4  U N D B C V U N R T V J H U Y W Z T E D K U T U J X E G X F F E J M M
5  V W J W T D D U U E O R A D F T E S R K G P A C K N D T L O I W E I I
6  U V T Y A N A R M V S S M C O N D I M E N T R M I L H P L I C P C B M
7  F X I P W W E T O X Z S E K F W A C A N L G G L C F G A Q C Z A O F I
8  K R M G Q Z X U R W G X D E B R D I A I X F E A B B U J R Z S P N I H
9  I O I F B G Q C O X Q Q W N L Z R R G O A R T F Q Q L I B S G A T G Z
10 Y W G G U W G U F P M G V D V Q Y I N Z N L N A S I M W I U R I A S G
11 N E G F I Y O O X Z D E A A T S W P U M E L I N Q E L M L L I A I E C
12 M G M G J D T V E F K R S U N U D M I W K K L A I P I E Z D K D N E O
13 A S E H P U E Y J X P M W U S I U E U V D X U Z A L Q Y H I Z S M S V
14 T S I N I M R E T E D A M A N L I N E S S U D S A G S I F I I R E A A
15 F X G B S P I R A J F N G X V F Y O R V X T T T L P T P U Q I Q N Z H
16 Z T G E T G W J Z L H Y Z W P M F Y G V M U E Z F K W U Z U D J T E Q
17 A M B A G V R E L G J R A B E Y A N C E R C I U M F F Y H Y N K A F V
18 B M R W T A Y Q Z Z H A E Y C S I O B E G K Q I U K E S F D D R Y H J
19 N T X V L T T T H G M A R V V O Y J L H X E G L J J W G T I I F Q L J
20 D L T K S S L S F A P J G U T W K A J H T K Z A I Y M R K N C C N Z F
21 V U Y Q L X U D N J B X Y B O K N A M U G V V R L Q A X G H Q N N O D
22 X H W A E Y O G F W R N Q F X D Y L P O G O J H R H D K L U N C Q B R
23 W D Y E V X H Q N Q O P W F C W V O Y H I F H P C H T N R B Z S F I O
24 E W Z I L V I P H A B D Q H H N A X C I Z D F E U T A C L B L N Y G M
25 L D A M S B Q A Q G Q Q R R P S H X F E E D I M G G L U E P L F H M X
26 V E T L A A R G Y C J W K A L C C O U H B G A D D Q K I Y R F T S Z M
27 P D U I P R J M V G L Y W C N W Y N X U V R F P E U X H A T Q S O A I
28 K I M Q H Y T T B N C D X Z O T Y U C C X O H U O C E A U I Z O A N N
29 M B B K A O V I Y J S B B I R N Y R E Z P N T O O H I D W Q L O P T L
30 T C Q P X B G Q N C T Q R E P J S T J Y Y U I P L L Y T G Q W J A Q R
31 F O W H O U K I B G G J P M D Z Q U G V M Q U S C T E K C E Y R Q L U
32 O U E G Q U X L A Z A X R R M R N R L T H M V O A D J U G A R C V N F
33 G N I Z I T P A B K E L T U V M S I U T O X B Z P B J U M J R I E U K
34 T C T V G T O H A Q M I E L L P W N Y H P A R G O T O H P B U P S V I
35 E E U K R C L T L Q U Y W H R J B G P S K G H Z R W A O H F L Z T F N
36
37 ABEYANCE
38 ADDRESS
39 ASHAMED
40 ASSIMILATE
41 BAPTIZING
42 BASIN
43 BIDED
44 CHART
45 CONDIMENT
46 CONSULT
47 CONTAINMENT
48 CRIME
49 DETERMINIST
50 DOWNSTAGE
51 EMPIRICIST
52 EXPERT
53 FEED
54 FRIGID
55 GERMANY
56 HEARING
57 HOOT
58 IDIOM
59 INTEGRATION
60 LINEAR
61 MANLINESS
62 MARTINGALE
63 NURTURING
64 PASTURELAND
65 PHOTOGRAPHY
66 PRACTICE
```

```
Masukkan nama file termasuk ekstensi: testlg3.txt
S N K Q C A H C U I N X P V H T B J Q J H H B W P F V F G F J O W T
F Z I M T I D E A U E M A M X K T B J M U F O U S A S O R Q D Y Y T Q
Y S Q F K K A D B A M Z S V D B F P Y G V P I E T Z T A D E U D P J V
U N D B C V U N R T V J H U Y W Z T E D K U T U J X E G X F F E J M M
V W J W T D D U U E O R A D F T E S R K G P A C K N D T L O I W E I I
U V T Y A N A R M V S S M C O N D I M E N T R M I L H P L I C P C B M
F X I P W W E T O X Z S E K F W A C A N L G L C F G A Q C Z A O F I
K R M G Q Z X U R W G X D E B R D I A I X F E A B B U J R Z S P N I H
I O I F B G Q C O X Q Q W N L Z R R G O A R T F Q Q L I B S G A T G Z
Y W G G U W G U F P M G V D V Q Y I N Z N L N A S I M W I U R I A S G
N E G F I Y O O X Z D E A A T S W P U M E L I N Q E L M L L I A I E C
M G M G J D T V E F K R S U N U D M I W K K L A I P I E Z D K D N E O
A S E H P U E Y J X P M W U S I U E U V D X U Z A L Q Y H I Z S M S V
T S I N I M R E T E D A M A N L I N E S S U D S A G S I F I I R E A A
F X G B S P I R A J F N G X V F Y O R V X T T T L P T P U Q I Q N Z H
Z T G E T G W J Z L H Y Z W P M F Y G V M U E Z F K W U Z U D J T E Q
A M B A G V R E L G J R A B E Y A N C E R C I U M F F Y H Y N K A F V
B M R W T A Y Q Z Z H A E Y C S I O B E G K Q I U K E S F D D R Y H J
N T X V L T T T H G M A R V V O Y J L H X E G L J J W G T I I F Q L J
D L T K S S L S F A P J G U T W K A J H T K Z A I Y M R K N C C N Z F
V U Y Q L X U D N J B X Y B O K N A M U G V V R L Q A X G H Q N N O D
X H W A E Y O G F W R N Q F X D Y L P O G O J H R H D K L U N C Q B R
W D Y E V X H Q N Q O P W F C W V O Y H I F H P C H T N R B Z S F I O
E W Z I L V I P H A B D Q H H N A X C I Z D F E U T A C L B L N Y G M
L D A M S B Q A Q G Q Q R R P S H X F E E D I M G G L U E P L F H M X
V E T L A A R G Y C J W K A L C C O U H B G A D D Q K I Y R F T S Z M
P D U I P R J M V G L Y W C N W Y N X U V R F P E U X H A T Q S O A I
K I M Q H Y T T B N C D X Z O T Y U C C X O H U O C E A U I Z O A N N
M B B K A O V I Y J S B B I R N Y R E Z P N T O O H I D W Q L O P T L
T C Q P X B G Q N C T Q R E P J S T J Y Y U I P L L Y T G Q W J A Q R
F O W H O U K I B G G J P M D Z Q U G V M Q U S C T E K C E Y R Q L U
O U E G Q U X L A Z A X R R M R N R L T H M V O A D J U G A R C V N F
G N I Z I T P A B K E L T U V M S I U T O X B Z P B J U M J R I E U K
T C T V G T O H A Q M I E L L P W N Y H P A R G O T O H P B U P S V I
E E U K R C L T L Q U Y W H R J B G P S K G H Z R W A O H F L Z T F N
Waktu eksekusi program: 0.542066 ms
Total perbandingan huruf: 23395
```

Link Drive Kode Program

https://github.com/dParikesit/Tucil1_13520087

Checklist

Poin	Ya	Tidak
------	----	-------

1. Program berhasil dikompilasi tanpa kesalahan (no syntax error)	✓	
2. Program berhasil running	✓	
3. Program dapat membaca file masukan dan menuliskan luaran.	✓	
4. Program berhasil menemukan semua kata di dalam puzzle	✓	

Daftar Referensi

- [1] Munir, Rinaldi. 2021. Algoritma Brute Force (Bagian I). [https://informatika.stei.itb.ac.id/~rinaldi.munir/Stmik/2021-2022/Algoritma-Brute-Force-\(2022\)-Bag1.pdf](https://informatika.stei.itb.ac.id/~rinaldi.munir/Stmik/2021-2022/Algoritma-Brute-Force-(2022)-Bag1.pdf), diakses 22 Desember 2021 pukul 23.00 WIB
- [2] Munir, Rinaldi. 2021. Algoritma Brute Force (Bagian II). [https://informatika.stei.itb.ac.id/~rinaldi.munir/Stmik/2021-2022/Algoritma-Brute-Force-\(2022\)-Bag2.pdf](https://informatika.stei.itb.ac.id/~rinaldi.munir/Stmik/2021-2022/Algoritma-Brute-Force-(2022)-Bag2.pdf), diakses 22 Desember 2021 pukul 23.00 WIB