

# **Tugas Kecil 1 IF2211 Strategi Algoritma:**

## **Penyelesaian *Word Search Puzzle* dengan**

### **Algoritma Brute Force**



**Dibuat oleh:**

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## A. ALGORITMA BRUTE FORCE

1. Mula-mula board puzzle dijadikan *matrix of character* dengan dimensi  $m \times n$ ,
2. Ambil salah satu *pattern* (kata) yang akan dicari di dalam board (panjang *pattern* adalah  $k$ )
3. Perbandingan dimulai dari elemen  $a_{11}$  matriks, dilakukan dalam **8 arah** pencarian:
  - 3a. Arah atas**, elemen  $a_{ij}$  adalah huruf pertama,
    - Apabila  $(i - k + 1) \geq 1$ , lanjut ke langkah 3a.1.
    - Apabila tidak memenuhi, lanjut ke langkah 3b.**3a.1** Bandingkan tiap huruf pada pattern dengan huruf pada elemen matrix dari  $a_{ij}$  ke arah atas,
    - Apabila sama, kata yang dicari pada board **ditemukan**, lanjut ke langkah 6,
    - Apabila beda, lanjut ke langkah 3b.
  - 3b. Arah bawah**, elemen  $a_{ij}$  adalah huruf pertama,
    - Apabila  $(i + k - 1) \leq m$ , lanjut ke langkah 3b.1.
    - Apabila tidak memenuhi, lanjut ke langkah 3c.**3b.1** Bandingkan tiap huruf pada pattern dengan huruf pada elemen matrix dari  $a_{ij}$  ke arah bawah,
    - Apabila sama, kata yang dicari pada board **ditemukan**, lanjut ke langkah 6,
    - Apabila beda, lanjut ke langkah 3c.
  - 3c. Arah kanan**, elemen  $a_{ij}$  adalah huruf pertama,
    - Apabila  $(j + k - 1) \leq n$ , lanjut ke langkah 3c.1.
    - Apabila tidak memenuhi, lanjut ke langkah 3d.**3c.1** Bandingkan tiap huruf pada pattern dengan huruf pada elemen matrix dari  $a_{ij}$  ke arah kanan,
    - Apabila sama, kata yang dicari pada board **ditemukan**, lanjut ke langkah 6,
    - Apabila beda, lanjut ke langkah 3d.
  - 3d. Arah kiri**, elemen  $a_{ij}$  adalah huruf pertama,
    - Apabila  $(j - k + 1) \geq 1$ , lanjut ke langkah 3d.1.
    - Apabila tidak memenuhi, lanjut ke langkah 3e.**3d.1** Bandingkan tiap huruf pada pattern dengan huruf pada elemen matrix dari  $a_{ij}$  ke arah kiri,
    - Apabila sama, kata yang dicari pada board **ditemukan**, lanjut ke langkah 6,
    - Apabila beda, lanjut ke langkah 3e.
  - 3e. Arah kanan atas**, elemen  $a_{ij}$  adalah huruf pertama,
    - Apabila  $(j + k - 1) \leq n$  dan  $(i - k + 1) \geq 1$ , lanjut ke langkah 3e.1.
    - Apabila tidak memenuhi, lanjut ke langkah 3f.**3e.1** Bandingkan tiap huruf pada pattern dengan huruf pada elemen matrix dari  $a_{ij}$  ke arah kanan atas,
    - Apabila sama, kata yang dicari pada board **ditemukan**, lanjut ke langkah 6,
    - Apabila beda, lanjut ke langkah 3f.
  - 3f. Arah kanan bawah**, elemen  $a_{ij}$  adalah huruf pertama,
    - Apabila  $(j + k - 1) \leq n$  dan  $(i + k - 1) \leq m$ , lanjut ke langkah 3f.1.
    - Apabila tidak memenuhi, lanjut ke langkah 3g.**3f.1** Bandingkan tiap huruf pada pattern dengan huruf pada elemen matrix dari  $a_{ij}$  ke arah kanan bawah,
    - Apabila sama, kata yang dicari pada board **ditemukan**, lanjut ke langkah 6,
    - Apabila beda, lanjut ke langkah 3g.
  - 3g. Arah kiri atas**, elemen  $a_{ij}$  adalah huruf pertama,

- Apabila  $(j - k + 1) \geq 1$  dan  $(i - k + 1) \geq 1$ , lanjut ke langkah 3g.1.
- Apabila tidak memenuhi, lanjut ke langkah 3h.

**3g.1** Bandingkan tiap huruf pada pattern dengan huruf pada elemen matrix dari  $a_{ij}$  ke arah kiri atas,

- Apabila sama, kata yang dicari pada board **ditemukan**, lanjut ke langkah 6,
- Apabila beda, lanjut ke langkah 3h.

**3h. Arah kiri bawah**, elemen  $a_{ij}$  adalah huruf pertama,

- Apabila  $(j - k + 1) \geq 1$  dan  $(i + k - 1) \leq m$ , lanjut ke langkah 3h.1.
- Apabila tidak memenuhi, **kesimpulan** pada **langkah 7**.

**3h.1** Bandingkan tiap huruf pada pattern dengan huruf pada elemen matrix dari  $a_{ij}$  ke arah kiri bawah,

- Apabila sama, kata yang dicari pada board **ditemukan**, lanjut ke langkah 6,
- Apabila beda, **kesimpulan** pada **langkah 7**.

4. Jika belum semua elemen matrix yang dibandingkan, ulangi langkah 3. dengan menelusuri elemen matrix secara *row major*.
5. Jika belum semua pattern dicoba, ulangi langkah 2 – 3.
6. Jika sebuah pattern telah dicocokan hingga elemen  $a_{mn}$  dan tidak ditemukan, maka pattern tersebut tidak berada di dalam board. Lanjut cek pattern lain dengan mengulangi langkah 2 – 3.

## B. SOURCE CODE

```
// 2. Aran basow
if (not(found) && bot < row) {
    str = "";
    for (k = 0; k < len; k++) {
        str = str + mat[bot][k];
    }
    comp = compare(strn,str);
    tot += comp.num;
    found = comp.same;
    if (found) {

        for (l1 = 0; l1 < row; l1++) {
            for (j1 = 0; j1 < col; j1++) {
                if ((l1<=l) && j1<=j) && (j1==l)) {
                    cout<<mat[l1][j1]<< " ";
                }
            }
        }
        else {
            cout << "-*<< " ;
        }
    }
    cout<<endl;
}

// 3. Aran konan
if (not(found) && right < col) {
    str = "";
    for (k = 0; k < len; k++) {
        str = str + mat[k][j];
    }
    comp = compare(strn,str);
    tot += comp.num;
    found = comp.same;
    if (found) {

        for (l1 = 0; l1 < row; l1++) {
            for (j1 = 0; j1 < col; j1++) {
                if ((l1<=l) && j1<=right) && (l1==j1) ) {
                    cout<<mat[l1][j1]<< " ";
                }
            }
        }
        else {
            cout << "-*<< " ;
        }
    }
    cout<<endl;
}

// 4. Aran kiri
if (not(found) && left >= 0) {
    str = "";
    for (k = 0; k < len; k++) {
        str = str + mat[l][k];
    }
    comp = compare(strn,str);
    tot += comp.num;
```

```
if (not(found) && right < col) {
    str = "";
    for (k = 0; k < len; k++) {
        str = str + mat[k][j];
    }
    comp = compare(strn,str);
    tot += comp.num;
    found = comp.same;
    if (found) {

        for (l1 = 0; l1 < row; l1++) {
            for (j1 = 0; j1 < col; j1++) {
                if ((l1<=l) && j1<=right) && (l1==j1) ) {
                    cout<<mat[l1][j1]<< " ";
                }
            }
        }
        else {
            cout << "-*<< " ;
        }
    }
    cout<<endl;
}

// 5. Aran konan atas
if (not(found) && right < col && top >= 0) {
    str = "";
    for (k = 0; k < len; k++) {
        str = str + mat[l][k];
    }
    comp = compare(strn,str);
    tot += comp.num;
    found = comp.same;
    if (found) {

        for (l1 = 0; l1 < row; l1++) {
            for (j1 = 0; j1 < col; j1++) {
                if ((l1<=l) && j1<=right) && (top<=l && l1<=j) && ((l+j)-(l1+j1)) ) {
                    cout<<mat[l1][j1]<< " ";
                }
            }
        }
        else {
            cout << "-*<< " ;
        }
    }
    cout<<endl;
}

// 6. Aran konan-bawah
if (not(found) && right < col && bot < row) {
    str = "";
    for (k = 0; k < len; k++) {
        str = str + mat[l][k];
    }
    comp = compare(strn,str);
    tot += comp.num;
    found = comp.same;
    if (found) {

        for (l1 = 0; l1 < row; l1++) {
            for (j1 = 0; j1 < col; j1++) {
                if ((l1<=l) && j1<=right) && (col>=l && l1>=j) && ((l-j)-(l1-j1)) ) {
                    cout<<mat[l1][j1]<< " ";
                }
            }
        }
        else {
            cout << "-*<< " ;
        }
    }
    cout<<endl;
}
```

The screenshot shows two instances of Visual Studio Code side-by-side, both displaying the same C++ file, `tu1.cpp`, under the project `TUKIL 1`.

**Top Tab (Line 298 to 386):**

```
        }
        else {
            cout << "x<<" ;
        }
    cout<endl;
}
}

// T. Arsh Aliri-hosah
if (not(found) && left >= 0 && top >= 0) {
    str = "";
    for (k = 0; k < len; k++) {
        str += str + mat[i][j-k];
    }
    comp = compare(ptr,str);
    tot += comp.num;
    found = comp.same;
    if (found) {
        for (ii = 0; ii < rows; ii++) {
            for (jj = 0; jj < cols; jj++) {
                if ((i+ii) <= left && (j+jj) <= top) {
                    cout<<mat[ii][jj]<<" ";
                }
                else {
                    cout << "x<<" ;
                }
            }
            cout<endl;
        }
    }
}

// R. Arsh Aliri-hosah
if (not(found) && left >= 0 && bot < row) {
    str = "";
    for (k = 0; k < len; k++) {
        str += str + mat[i][k];
    }
    comp = compare(ptr,str);
    tot += comp.num;
    found = comp.same;
    if (found) {
        for (ii = 0; ii < rows; ii++) {
            for (jj = 0; jj < cols; jj++) {
                if ((i+ii) <= left && (j+jj) <= bot) {
                    cout<<mat[ii][jj]<<" ";
                }
                else {
                    cout << "x<<" ;
                }
            }
            cout<endl;
        }
    }
}
```

**Bottom Tab (Line 357 to 386):**

```
        }
    }
}

if (not(found)) {
    cout << endl;
    cout << "Total comparison : " << tot << endl;
    total += tot;
    auto stop = high_resolution_clock::now();
    auto duration = duration_cast(stop - start);
    time = duration.count();
    cout << "Waktu eksekusi : " << time << " microseconds" << endl;
    cout << "----->>>" << endl;
    cout<endl;
}

if (not(found) && i == (row-1) && j == (col-1)) {
    cout << "KATA TIDAK DITEMUKAN...!!!" << endl;
    cout << "----->>>" << endl;
    cout<endl;
}

if (not(found)) {
    cout << "Total semua comparison : " << totAll << endl;
    cout << "Waktu total eksekusi : " << timeAll << " microseconds" << endl;
    cout<endl;
}

return 0;
}
```

## C. CONTOH EKSEKUSI PROGRAM

### 1. Small (7 x 8)

```
1  J S O L U T I S
2  S U N A R U U A
3  N E P T U N E T
4  S O N I E I S U
5  R C E V T R E R
6  A H T R A E S N
7  M M E R C U R Y
8
9  EARTH
10 JUPITER
11 MARS
12 MERCURY
13 NEPTUNE
14 SATURN
15 URANUS
16 VENUS
17 UEEC
```

```
UKURAN MATRIKS : 7 x 8
J S O L U T I S
S U N A R U U A
N E P T U N E T
S O N I E I S U
R C E V T R E R
A H T R A E S N
M M E R C U R Y

<<<=====>>>
Kata      : EARTH
- - - - -
- - - - -
- - - - -
- - - - -
- - - - -
- H T R A E - -
- - - - -
Total comparison   : 139
Waktu eksekusi    : 22979 microseconds
<<<->>>

Kata      : JUPITER
J - - - - -
- U - - - - -
- - P - - - - -
- - - I - - - -
- - - - T - - -
- - - - - E - -
- - - - - R - -
Total comparison   : 11
Waktu eksekusi    : 21010 microseconds
<<<->>>
```

```
<<<----->>>
Kata      : MERCURY
-----
-----
-----
-----
-----
-----
- M E R C U R Y
Total comparison   : 51
Waktu eksekusi    : 60777 microseconds
<<<----->>>
Kata      : NEPTUNE
-----
N E P T U N E
-----
-----
-----
Total comparison   : 27
Waktu eksekusi    : 18048 microseconds
<<<----->>>
Kata      : SATURN
-----
S
A
T
U
R
N
-----
Total comparison   : 26
Waktu eksekusi    : 16618 microseconds
<<<----->>>
<<<----->>>
Kata      : URANUS
-----
S U N A R U
-----
-----
-----
-----
-----
Total comparison   : 44
Waktu eksekusi    : 14523 microseconds
<<<----->>>
Kata      : VENUS
-----
S
U
N
E
V
-----
Total comparison   : 98
Waktu eksekusi    : 13997 microseconds
<<<----->>>
Kata      : UEEC
-----
U
E
E
C
-----
Total comparison   : 160
Waktu eksekusi    : 12998 microseconds
<<<----->>>
Total semua comparison   : 746
Waktu total eksekusi     : 205848 microseconds
```

## 2. Small (11 x 11)

```
1 L L J K C A B L F C I
2 O R O L O B O C O I M
3 G E L A C S A P R S X
4 L P S T A H W V T A V
5 A N R L X L X Q R B I
6 I H P L E D O X A H S
7 K J Y A P H P Y N O U
8 F A B M A D A N Z J A
9 E V I S N O H T Y P L
10 A A Y L B M E S S A C
11 W E I V B A L O G O L
12
13 ADA
14 FORTRAN
15 PHP
16 ALGOL
17 JAVA
18 PYTHON
19 ASSEMBLY
20 LABVIEW
21 SMALLTALK
22 BASIC
23 LOGO
24 VISUALC
25 COBOL
26 PASCAL
27 DELPHI
28 PERL
```

The screenshot shows a Visual Studio Code interface with three terminal windows open, each displaying the output of a Kata challenge. The terminals are labeled 'Kata : PHP', 'Kata : ALGOL', and 'Kata : JAVA'. Each terminal shows the total number of comparisons and the execution time.

**Kata : PHP**

```
Total comparison : 453
Maktu eksekusi : 29004 microseconds
<<< >>>
```

**Kata : ALGOL**

```
Total comparison : 184
Maktu eksekusi : 64999 microseconds
<<< >>>
```

**Kata : JAVA**

```
Total comparison : 363
Maktu eksekusi : 29996 microseconds
<<< >>>
```

File Edit Selection View Go Run Terminal Help

OPEN EDITORS Kata : PYTHON

Kata : ASSEMBLY

Kata : LABVIEW

WEIVBAL

Kata : SMALLTALK

Kata : BASIC

Kata : LOGO

Total comparison : 358 Waktu eksekusi : 26997 microseconds <<<----->>>

Total comparison : 243 Waktu eksekusi : 29000 microseconds <<<----->>>

Total comparison : 347 Waktu eksekusi : 27003 microseconds <<<----->>>

Total comparison : 123 Waktu eksekusi : 30003 microseconds <<<----->>>

Total comparison : 227 Waktu eksekusi : 31003 microseconds <<<----->>>

Total comparison : 659 Waktu eksekusi : 28000 microseconds <<<----->>>

Ln 12 Col 34 Spaces: 4 UTF-8 CRLF C++ Win32 JP Q

File Edit Selection View Go Run Terminal Help

OPEN EDITORS Kata : PYTHON

Kata : ASSEMBLY

Kata : LABVIEW

WEIVBAL

Kata : SMALLTALK

Kata : BASIC

Kata : LOGO

Total comparison : 358 Waktu eksekusi : 26997 microseconds <<<----->>>

Total comparison : 243 Waktu eksekusi : 29000 microseconds <<<----->>>

Total comparison : 347 Waktu eksekusi : 27003 microseconds <<<----->>>

Total comparison : 123 Waktu eksekusi : 30003 microseconds <<<----->>>

Total comparison : 227 Waktu eksekusi : 31003 microseconds <<<----->>>

Total comparison : 659 Waktu eksekusi : 28000 microseconds <<<----->>>

Ln 12 Col 34 Spaces: 4 UTF-8 CRLF C++ Win32 JP Q

```

fix2.cpp - Tucil 1 - Visual Studio Code
File Edit Selection View Go Run Terminal Help
OPEN EDITORS Kata : VISUALC
TUCIL 1
fix2.cpp submitted
fix2.exe
test1 (7x8).txt
test2 (11x11).txt
test3 (14x16).txt
test4 (20x20).txt
test5 (20x21).txt
test6 (20x22).txt
test7 (30x30).txt
test8 (34x34).txt
$520090, Rahmat Ra...
13520090, Rahmat Ra...
13520090, Rahmat Ra...
b.txt
Tugas-Kecil-1-(2022)...
Total comparison : 131
Waktu eksekusi : 26996 microseconds
<<<----->>>
Kata : COBOL
-- L O B O C --
-- L A C S A P --
Total comparison : 83
Waktu eksekusi : 32836 microseconds
<<<----->>>
Kata : PASCAL
-- L A C S A P --
Total comparison : 101
Waktu eksekusi : 31708 microseconds
<<<----->>>
Kata : DELPHI
I H P L E D
Total comparison : 212
Waktu eksekusi : 31995 microseconds
<<<----->>>
Kata : PERL
- L -
- R -
- P -
Total comparison : 143
Waktu eksekusi : 32004 microseconds
<<<----->>>
Total semua comparison : 4213
Waktu total eksekusi : 500736 microseconds
PS D:\>0\ IF\SM\4\STIMA\Tucil 1\submitted> 

```

09:22

09:23

### 3. Small (14 x 16)

```

1 P L U T O F Q X P G N O S X N D
2 M L X Y E G F S Y Q B Q A O I O
3 L B Z D P B E R I I Q K C V L F
4 R E M N U L A I J D V R I T X Q
5 Q N T T Y M J C X V A N L C W T
6 B K Y E L T T I L V E B E F D P
7 S H I N E D Q P A R T X T R H V
8 J Z U V F E K T E N P F C Y S E
9 J H O D B F B U T W U A E L H L
10 U B L M T E G O C X X T P W A B
11 A M Q T T G C X U F O B S N D U
12 S A T O X W U A E L O M A H Y K
13 M B Q A T T F E M T S O L B R A
14 I S U U P S H O T E L Z Q H M W
15
16 ABOVE
17 ASPECT
18 BECAME
19 CRAVAT
20 DIVINE
21 LITTLE
22 LOST
23 MOLE
24 PLUTO
25 SHADY
26 SHINE
27 SONG
28 STUN
29 UPHOT

```

File Edit Selection View Go Run Terminal Help

PROBLEMS OUTPUT TERMINAL

PS D:\0\0) IF SHIFT 4(STIM\Kunci1 > cd "d:\0\0) IF SHIFT 4(STIM\Kunci1 Unsubmitted"; if (\$?) { g++ f1x2.cpp -f1x2 }; if (\$?) { .\f1x2 }

ULURU MATRIX : 14 x 16

```

PLUTOGXPNDSXND
LXYEGFSVQBGQATO
LBZDPBERIIQKCVLF
RBLTQGQXQXQXQXQX
BRTVNSCLXVNLCLMT
BKVLTITLVLVEBEFDP
SHTRNEODPABXTTTHY
JLWQDQDQDQDQDQDQD
JHGDDBUTWUMLAEHLH
UBLRTEGOCXXTPNAD
AKRQXQXQXQXQXQXQX
SATCXWQXQXQXQXQX
HQQAQTFFEMTSGLRRA
ISUUPSHOTELZLQHMM
=====
```

Kata : ANNE

```

-----
```

Total comparison : 927  
waktu eksekusi : 47000 microseconds  
<<----->>

Kata : ASPECT

```

-----
```

Total comparison : 906  
waktu eksekusi : 49725 microseconds  
<<----->>

Kata : BECOME

```

-----
```

Total comparison : 655  
waktu eksekusi : 58907 microseconds  
<<----->>

Kata : CINNATI

```

-----
```

Total comparison : 128  
waktu eksekusi : 49999 microseconds  
<<----->>

Kata : DIVINE

```

-----
```

Total comparison : 67  
waktu eksekusi : 76807 microseconds  
<<----->>

Kata : LITTLE

```

-----
```

Total comparison : 386  
waktu eksekusi : 54802 microseconds  
<<----->>

Kata : LOST

```

-----
```

Total comparison : 1281  
waktu eksekusi : 58999 microseconds  
<<----->>

Kata : MOLE

```

-----
```

Total comparison : 1171  
waktu eksekusi : 56801 microseconds  
<<----->>

File Edit Selection View Go Run Terminal Help

PROBLEMS OUTPUT TERMINAL

File Edit Selection View Go Run Terminal Help

PROBLEMS OUTPUT TERMINAL

File Edit Selection View Go Run Terminal Help

PROBLEMS OUTPUT TERMINAL

File Edit Selection View Go Run Terminal Help

PROBLEMS OUTPUT TERMINAL

Kata : MOLE

```
Total comparison : 1771
Waktu eksekusi : 58981 microseconds
<<-->>
```

Kata : PLUTO

```
P L U T O
```

```
Total comparison : 7
Waktu eksekusi : 5895 microseconds
<<-->>
```

Kata : SANDY

```
S A N D Y
```

```
Total comparison : 1681
Waktu eksekusi : 49997 microseconds
<<-->>
```

Kata : SHINE

```
S H I N E
```

```
Total comparison : 481
Waktu eksekusi : 49980 microseconds
<<-->>
```

Kata : SONG

```
S O N G
```

```
Total comparison : 42
Waktu eksekusi : 49998 microseconds
<<-->>
```

Kata : STUN

```
S T U N
```

```
Total comparison : 1897
Waktu eksekusi : 49997 microseconds
<<-->>
```

Kata : UPSHOT

```
U P S H O T
```

```
Total comparison : 996
Waktu eksekusi : 48996 microseconds
<<-->>
```

```
Total semua comparison : 8898
Waktu total eksekusi : 73973 microseconds
```

PS D:\a\ifspmt\4\STDMA\ncell\1\submitted

#### 4. Medium (20 x 20)

```

1 M F K E H V B B L P L U N V N A M R E G
2 P Y J S T S U T L L G I Y Z V Y X Q K R
3 K O M A X S I F G I N A I L A T I T E E
4 T I Q B P R T N V H L P D L Z R P U H E
5 Q H C M P A I R A X B I K C R N Q M S K
6 T L Y O E E N H F D K I H L A V N X I K
7 L L V I A U P E R Q D I L A N R U G N U
8 I X Z H B Q T D S B N M P I C W K C A V
9 T H A I R K B W C E D O T O J Y P U P C
10 H B X N S K X S S Z P A H D A N D Y S V
11 U M Z D U V D E S X L J F B Q J J W U G
12 A Y E I Q W F H F S V Q A H Y D E C I X
13 N Q C V Y L E Z T D S R E V V D F J F V
14 I C S F N E W E R B E H A Q I N B Q Y A
15 A P H P H D V V H W I M Q S O E K P E R
16 N Q C Y Q S V L I K Z F H M C U O K L A
17 X R N A W H I N I S E T T O N F A I S B
18 C Z E C H F A L R J F N B U Q L L Q Q I
19 N E R U W A P P O K H C T U D V A M U C
20 M Z F V A B W E O P L E N G L I S H U T
21
22 ARABIC
23 CHINESE
24 CZECH
25 DANISH
26 DUTCH
27 ENGLISH
28 FRENCH
29 GERMAN
30 GREEK
31 HEBREW
32 HINDI
33 ITALIAN
34 JAPANESE
35 LAO
36 LATIN
37 LITHUANIAN
38 POLISH

```

File Edit Selection View Go Run Terminal Help

PROBLEMS OUTPUT TERMINAL

D:\0 IF\SMT 4\STIMA\TUCIL 1> cd "d:\0" IF\SMT 4\STIMA\TUCIL 1\submitted\>; if (\$?) { g++ fix2.cpp -o fix2 } ; if (\$?) { ./fix2 }

UKURAN MATRIKS : 20 x 20

```

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

```

Kata : ARABIC

```

. . . . .
. . . . .
. . . . .
. . . . .
. . . . .
. . . . .
. . . . .
. . . . .
. . . . .
. . . . .
. . . . .
. . . . .
. . . . .
. . . . .
. . . . .
. . . . .
. . . . .
. . . . .
. . . . .
. . . . .

```

Total comparison : 1673  
Waktu eksekusi : 78732 microseconds

<<<----->>>

File Edit Selection View Go Run Terminal Help

PROBLEMS OUTPUT TERMINAL

Kata : CHINESE

```

. . . . .
. . . . .
. . . . .
. . . . .
. . . . .
. . . . .
. . . . .
. . . . .
. . . . .
. . . . .
. . . . .
. . . . .
. . . . .
. . . . .
. . . . .
. . . . .
. . . . .
. . . . .
. . . . .
. . . . .

```

C Z E C H

```

. . . . .
. . . . .
. . . . .
. . . . .
. . . . .
. . . . .
. . . . .
. . . . .
. . . . .
. . . . .
. . . . .
. . . . .
. . . . .
. . . . .
. . . . .
. . . . .
. . . . .
. . . . .
. . . . .
. . . . .

```

Total comparison : 2128  
Waktu eksekusi : 93997 microseconds

<<<----->>>

fix2.cpp - Tucil 1 - Visual Studio Code

Kata : DANISH

```
-- H --  
-- I --  
-- N --  
-- A --  
-- D --
```

Total comparison : 480  
Waktu eksekusi : 89329 microseconds  
<<<----->>>

Kata : DUTCH

```
-- H C T U D --
```

Total comparison : 2303  
Waktu eksekusi : 82999 microseconds  
<<<----->>>

Ln 13, Col 34 Spaces: 4 UTF-8 CRLF C++ Win32 ⚡ 🔍 ENG 09:51 📲 1

fix2.cpp - Tucil 1 - Visual Studio Code

Kata : ENGLISH

```
-- H --  
-- C --  
-- M --  
-- E --  
-- R --  
-- F --
```

Total comparison : 1999  
Waktu eksekusi : 88872 microseconds  
<<<----->>>

Kata : FRENCH

```
-- H --  
-- C --  
-- M --  
-- E --  
-- R --  
-- F --
```

Total comparison : 2107  
Waktu eksekusi : 129065 microseconds  
<<<----->>>

Ln 13, Col 34 Spaces: 4 UTF-8 CRLF C++ Win32 ⚡ 🔍 ENG 09:51 📲 1

fix2.cpp - Tucil 1 - Visual Studio Code

Kata : GERMAN

```
-- N A M R E G --
```

Total comparison : 85  
Waktu eksekusi : 86997 microseconds  
<<<----->>>

Kata : GREEK

```
-- G --  
-- R --  
-- E --  
-- E --  
-- K --
```

Total comparison : 86  
Waktu eksekusi : 98958 microseconds  
<<<----->>>

Ln 13, Col 34 Spaces: 4 UTF-8 CRLF C++ Win32 ⚡ 🔍 ENG 09:56 📲 1

```
Kata : HEBREW
MERBEH

Total comparison : 1598
Waktu eksekusi : 86991 microseconds
<<<----->>>

Kata : HINDI

HINDI

Total comparison : 807
Waktu eksekusi : 86443 microseconds
<<<----->>>
```

```
Kata : ITALIAN
NAILATI

Total comparison : 246
Waktu eksekusi : 88904 microseconds
<<<----->>>

Kata : JAPANESE

JAPANESE

Total comparison : 90
Waktu eksekusi : 86136 microseconds
<<<----->>>
```

```
Kata : LAO
LAO

Total comparison : 2659
Waktu eksekusi : 86739 microseconds
<<<----->>>

Kata : LATIN

LATIN

Total comparison : 1395
Waktu eksekusi : 87002 microseconds
<<<----->>>
```

```

File Edit Selection View Go Run Terminal Help
OPEN EDITORS PROBLEMS OUTPUT TERMINAL
TUCK I Kata : LITHUANIAN
fix2.cpp submitted
fix2.cpp
fix2.exe
test1 (7x8).txt
test2 (11x11).txt
test3 (14x16).txt
test4 (20x20).txt
test5 (20x21).txt
test6 (20x22).txt
test7 (30x30).txt
test8 (34x34).txt
$520090, Rahmat Ra..
13520090, Rahmat Ra..
13520090, Rahmat Ra..
b.txt
Tugas-Kesel-1-(2022)...
Total comparison : 432
Waktu eksekusi : 91083 microseconds
<<<----->>>

Kata : POLISH
Total comparison : 2157
Waktu eksekusi : 85807 microseconds
<<<----->>>

```

OUTLINE

Total semua comparison : 20530  
Waktu total eksekusi : 1531719 microseconds  
PS D:\.0\TF\SM\4\STIMA\TuckI I\submitted>

59%

ENG

09:57

13, Col 34 Spaces: 4 UTF-8 CRLF C++ Win32 JP Q

## 5. Medium (20 x 24)

```

1 J J D S I H D R A V R A H R F S Q U N U Y G Y B
2 E P R I N C E T O N Z V Y V T C R J O W D D F S
3 O L O K Y K T C H L H M D A Z G L B R O C S F A
4 P H F S E U D R U P T Z N I R F L P T G E D S L
5 A Q X X P Y C T Z I P F V K G R E D H B Q P I S
6 R C O X N E H J E B O B K D L X N I E S E Q M N
7 D W S X L G L C C R E L V U N P R F A N M A S W
8 Y Z Y A D P E R D W I N A Y P E O X S B A S P A
9 I H Y Y Y Y M D I I L P W Y A Q C S T H D P W B
10 A T A L B E P R X F G F I O P K P I E I E V G J
11 S U Y N E E D T X Q R N H G T M H I R O R H T R
12 E O D R E B R O W N X R A N B E P C N D T L M S
13 R M R A R B B K A K X O I I K T G R S J O B X Z
14 R T E T K E V F E X F Z Z E B X L R C S N X W R
15 H R A S O W M A Q L U Z B Y F M E K O M J Q P L
16 B A U K T P F B F R E D R Q M Z U L U E J M M S
17 R D A T A F N G R N S Y R O M E Q L L W G T Y R
18 U M N E A T U L B Q B Q F V B T T B O H F S S A
19 H B P D H B I T L I B R E D N A V F R C B P W W
20 G D U K E B U T L Z V H V B R A N D E I S L M S
21
22 BERKELEY
23 BRANDeIS
24 BROWN
25 COLUMBIA
26 CORNELL
27 DARTMOUTH
28 DUKE
29 EMORY
30 GEORGETOWN
31 HARVARD
32 NORTHEASTERN
33 NOTREDAME
34 OXFORD
35 PRINCETON
36 PURDUE
37 RICE

```

The screenshot shows a Visual Studio Code interface with the following details:

- File Explorer:** Shows files like `6u2.cpp`, `6u2.exe`, `test (7x8).txt`, `test (11x1).txt`, `test (14x1).txt`, `test (20x2).txt`, `test (20x2).txt`, `test (20x2).txt`, `test (20x2).txt`, `test (30x3).txt`, `test (34x3).txt`, `-520090_Rahmat R...`, `13520090_Rahmat R...`, `13520090_Rahmat R...`, `b.txt`, and `Tugas-Kecil-1-(2022)...`.
- Terminal:** The active tab shows the output of a program named `6u2.cpp`. It displays a 28x24 grid representing the United States map, where each state is assigned a unique character. The grid starts with "A" for Alaska and "Q" for Hawaii, and includes other characters like "B", "E", "R", "K", "L", "E", and "Y". Below the grid, the terminal displays the following text:

```
Kata : BERKELEY
Total comparison : 1015
Makro eksekusi : 99000 microseconds
```
- Code View:** A sidebar on the right shows code snippets for various languages, including C, C++, Python, Java, and others.
- Status Bar:** At the bottom, it shows "Le M. Cel 3 Processor A UHD-B CPU GAA Intel(R) Core(TM) i5-1135G7 CPU @ 2.40GHz" and "1001".

The screenshot shows the Visual Studio Code interface with two open terminals. The top terminal displays the results for the 'BRANDeIS' kata, and the bottom terminal displays the results for the 'BROWN' kata. Both terminals show the total comparison count and the execution time in microseconds.

**Kata : BRANDeIS**

```
Total comparison : 2029  
Muktu ekleksust : 152236 microseconds  
<<<----->>>
```

**Kata : BROWN**

```
Total comparison : 1685  
Muktu ekleksust : 98000 microseconds  
<<<----->>>
```

The screenshot shows two terminal windows in Visual Studio Code. The top window is titled "test5 (20x24).txt - TUIK 1 - Visual Studio Code". It displays a grid of letters A through Z arranged in a 5x5 pattern. Below the grid, the following output is shown:

```
Total comparison : 2144
Makru eksekusi : 98998 microseconds
<<<<----->>>
```

The bottom window is titled "test5 (20x24).txt - TUIK 2 - Visual Studio Code". It also displays a grid of letters A through Z arranged in a 5x5 pattern. Below the grid, the following output is shown:

```
Total comparison : 1048
Makru eksekusi : 102999 microseconds
<<<<----->>>
```

File Edit Selection View Go Run Terminal Help

PROBLEMS OUTPUT TERMINAL

Kata : DARTMOUTH

```
H  
U  
O  
M  
T  
R  
A  
D  
K  
Total comparison : 1719  
Waktu eksekusi : 802528 microseconds  
<<<----->>>
```

Kata : DUKE

```
D  
U  
K  
E  
Total comparison : 3120  
Waktu eksekusi : 101721 microseconds  
<<<----->>>
```

LN 37, Col 5 Spaces: 4 UTF-8 CRLF Django.txt ↻

File Edit Selection View Go Run Terminal Help

PROBLEMS OUTPUT TERMINAL

Kata : EMORY

```
Y  
R  
O  
M  
E  
Total comparison : 2704  
Waktu eksekusi : 102886 microseconds  
<<<----->>>
```

Kata : GEORGETOWN

```
N  
W  
O  
T  
E  
G  
R  
O  
E  
G  
Total comparison : 1584  
Waktu eksekusi : 101050 microseconds  
<<<----->>>
```

LN 37, Col 5 Spaces: 4 UTF-8 CRLF Django.txt ↻

File Edit Selection View Go Run Terminal Help

PROBLEMS OUTPUT TERMINAL

Kata : HARVARD

```
D  
R  
A  
V  
A  
H  
Total comparison : 62  
Waktu eksekusi : 135000 microseconds  
<<<----->>>
```

Kata : NORTHEASTERN

```
N  
O  
R  
T  
H  
E  
A  
R  
E  
R  
N  
Total comparison : 70  
Waktu eksekusi : 103999 microseconds  
<<<----->>>
```

LN 37, Col 5 Spaces: 4 UTF-8 CRLF Django.txt ↻

```
Kata : NOTREDAME
Total comparison : 1528
Waktu eksekusi : 101998 microseconds
<<<----->>>

Kata : OXFORD
- O -
- R -
- D -
- F -
- X -
- O -
```

Total comparison : 535  
Waktu eksekusi : 102999 microseconds  
<<<----->>>

```
Kata : PRINCETON
- P -
- R -
- I -
- N -
- C -
- E -
- T -
- O -
- N -
- O -
- N -
- T -
```

Total comparison : 102
Waktu eksekusi : 100000 microseconds
<<<----->>>

Kata : PURDUE
- P -
- U -
- R -
- D -
- R -
- U -
- P -

Total comparison : 351
Waktu eksekusi : 103002 microseconds
<<<----->>>

```
Kata : RICE
- R -
- I -
- C -
- E -
```

Total comparison : 1798
Waktu eksekusi : 102998 microseconds
<<<----->>>

Total semua comparison : 21744
Waktu total eksekusi : 17999834 microseconds

PS D:\.\0) IF(SMT A\\$TIMA\Tucil 1\submitted>

## 6. Medium (22 x 22)

```

1 G H A Y F E V E R U L Y R E L T U C A F K E
2 X U N S P R I N G I E S T G T X F A U F O U
3 W I I O Z W Q F V J J A O K D I X F Y D W X
4 L F Q L O Q L A W D G H R O Y P U K V T D N
5 A A T B L A S P H E M E R I X M T B Q A R Z
6 N S G V Q O P G V L T J A R U E F U L L Y M
7 Q K J A H P T W G E N T L E F O L K L Y J N
8 A Z W L S N O I L I V A P I P M O B J G Y W
9 Z P P B K H M C N W H U Y P F H O W G H S W
10 G G A R M E N T E E L X O A Z B Q G E D G M
11 Y B C I H N M K Y P H M L K Y O V E U U P W
12 F I Y G Y S R D U M E A D A B L W L D S A F
13 U V N O I T C E L F E D E U R U R B H P U X
14 S V G M A B A J G S K E P H B O E A T L C D
15 I B N J U E X D A U E V O G E O M I J I I O
16 O R W Y Y C D O U X L B S W E V K L O T B R
17 N L H Y Z S P H D F P A I M P J F E M T U R
18 Y R Z G N G X M I N O I T J E E H R F I C X
19 I U Q R D E C N U O R T E E R H T B S N W I
20 B M A V H A Z I N E S S D Q O P O U Q G S T
21 H B P D H B I T L B R E D N A V F R C B P
22 G D U K E B U T L Z V H V B R A N D E I S L
23
24 BEEPER
25 BLASPHEMER
26 CUBIC
27 CUTLERY
28 DEFLECTION
29 DEPOSITED
30 FUSION
31 GARMENT
32 GENTLEFOLK
33 GUILLOTINE
34 HAYEVER
35 HAZINESS
36 MORAL
37 PAVILION
38 REGULATE
39 RELIABLE

```

File Edit Selection View Go Run Terminal Help

PS D:\0\0> IF \$PMT -eq "TULC\Tulc1" & cd "d:\0\0" IF \$PMT -eq "TULC\Tulc1" Ifsubmitted` ; if (\$S) { g++ fix2.cpp -fis2 } ; if (\$S) { .\fix2 }

URUGU PATRIKS : 22 22

TULC 1

- extended
- finished
- submitted
- fix2.cpp**
- fix2.txt
- test1 (7x5).txt
- test2 (11x11).txt
- test3 (14x16).txt
- test4 (20x20).txt
- test5 (20x6).txt
- test6 (22x22).txt
- test7 (30x30).txt
- test8 (34x34).txt
- 13520090\_Rahmat Ra...
- 13520090\_Rahmat Ra...
- b.txt
- Tugas-Kedi-1-Q(022...)

Kata : BEEPER

-----

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

=====

Total comparison : 1775  
waktu eksekusi : 381732 microseconds

<<<----->>>

Kata : BLASPHEMER

-----

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

=====

Total comparison : 1775  
waktu eksekusi : 381732 microseconds

<<<----->>>

Kata : CUBIC

-----

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

=====

Total comparison : 1775  
waktu eksekusi : 381732 microseconds

<<<----->>>

Kata : CUTLERY

-----

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

=====

Total comparison : 1775  
waktu eksekusi : 381732 microseconds

<<<----->>>

File Edit Selection View Go Run Terminal Help

PS D:\0\0> IF \$PMT -eq "TULC\Tulc1" & cd "d:\0\0" IF \$PMT -eq "TULC\Tulc1" Ifsubmitted` ; if (\$S) { g++ fix2.cpp -fis2 } ; if (\$S) { .\fix2 }

URUGU PATRIKS : 22 22

TULC 1

- extended
- finished
- submitted
- fix2.cpp**
- fix2.txt
- test1 (7x5).txt
- test2 (11x11).txt
- test3 (14x16).txt
- test4 (20x20).txt
- test5 (20x6).txt
- test6 (22x22).txt
- test7 (30x30).txt
- test8 (34x34).txt
- 13520090\_Rahmat Ra...
- 13520090\_Rahmat Ra...
- b.txt
- Tugas-Kedi-1-Q(022...)

Kata : BLASPHEMER

-----

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

=====

Total comparison : 1775  
waktu eksekusi : 381732 microseconds

<<<----->>>

Kata : CUBIC

-----

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

=====

Total comparison : 1775  
waktu eksekusi : 381732 microseconds

<<<----->>>

Kata : CUTLERY

-----

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

=====

Total comparison : 1775  
waktu eksekusi : 381732 microseconds

<<<----->>>

The screenshots show the terminal output of a C++ program named fz2.cpp, which prints a grid of letters based on a word provided as input. The program uses a recursive backtracking algorithm to generate the grid.

**CUTLERY**

```
Kata : CUTLERY
      - R E L T U C -
      - - - - - - - -
      - O I T C E L F E D -
      - - - - - - - - - - - -
Total comparison : 88
waktu eksekusi : 38995 microseconds
<<----->>
Kata : DEPOSITION
      - D E P O S I T I O N -
      - - - - - - - - - - - -
      - F U S I O N -
      - - - - - - - - - - - -
Total comparison : 1118
waktu eksekusi : 38998 microseconds
<<----->>
Kata : GARMENT
      - G A R M E N T -
      - - - - - - - - - - - -
      - G E N T L E F O L K -
      - - - - - - - - - - - -
Total comparison : 180
waktu eksekusi : 38624 microseconds
<<----->>
Kata : GENTLEFOLK
      - G E N T L E F O L K -
      - - - - - - - - - - - -
      - U I L -
      - - - - - - - - - - - -
Total comparison : 562
waktu eksekusi : 386274 microseconds
<<----->>
Kata : GUILLOTINE
      - G U I L L O T I N E -
      - - - - - - - - - - - -
      - U I L -
      - - - - - - - - - - - -

```

**DEPOSITION**

**GARMENT**

**GENTLEFOLK**

**GUILLOTINE**

```
File Edit Selection View Go Run Terminal Help
OPEN EDITORS PROBLEMS OUTPUT TERMINAL
TULI_I
> vscode
> extended
> finish
> submitted
> fuz2.cpp
fuz2e
fuz1 (7kB).mt
fuz2 (11kB).mt
fuz3 (14kB).mt
fuz4 (20kB).mt
fuz5 (20kB).mt
fuz6 (30kB).mt
fuz7 (30kB).mt
fuz8 (34kB).mt
51320990_Rahmat.Ru...
13520990_Rahmat.Ru...
13520990_Rahmat.Ru...
b.hst
Tugas-Kecil-1-(2022)...
Kata : GUILLOTINE
<<<----->>>
Kata : GUILLOTINE
U
I
L
O
I
N
E
<<<----->>>
Total comparison : 14
waktu eksekusi : 387032 microseconds
<<<----->>>
Kata : HAYEVER
- H A Y F E V E R -
<<<----->>>
Total comparison : 13
waktu eksekusi : 387997 microseconds
<<<----->>>
Kata : HAZMESS
<<<----->>>
Kata : HAZMESS
<<<----->>>
Total comparison : 2879
waktu eksekusi : 189796 microseconds
<<<----->>>
Kata : MORAL
M
O
R
A
L
<<<----->>>
Total comparison : 2115
waktu eksekusi : 105988 microseconds
<<<----->>>
Kata : PAVILION
P
A
V
I
L
O
N
<<<----->>>
```

This screenshot shows the Visual Studio Code interface with two tabs open. The active tab, 'fuz2.cpp - TULI\_I - Visual Studio Code', displays the output of a C++ program. The program prints a dot matrix representation of the word 'GUILLOTINE'. The output includes timing information: a total of 14 comparisons and a execution time of 387032 microseconds. Below this, another run of the program prints 'HAYEVER' with 13 comparisons and 387997 microseconds. Finally, it prints 'HAZMESS' with 2879 comparisons and 189796 microseconds. The bottom part of the terminal shows the same process for the words 'MORAL' and 'PAVILION'.

```
File Edit Selection View Go Run Terminal Help
OPEN EDITORS PROBLEMS OUTPUT TERMINAL
TULI_I
> vscode
> extended
> finish
> submitted
> fuz2.cpp
fuz2e
fuz1 (7kB).mt
fuz2 (11kB).mt
fuz3 (14kB).mt
fuz4 (20kB).mt
fuz5 (20kB).mt
fuz6 (30kB).mt
fuz7 (30kB).mt
fuz8 (34kB).mt
51320990_Rahmat.Ru...
13520990_Rahmat.Ru...
13520990_Rahmat.Ru...
b.hst
Tugas-Kecil-1-(2022)...
Kata : HAZMESS
<<<----->>>
Kata : HAZMESS
<<<----->>>
Total comparison : 2879
waktu eksekusi : 189796 microseconds
<<<----->>>
Kata : MORAL
M
O
R
A
L
<<<----->>>
Total comparison : 2115
waktu eksekusi : 105988 microseconds
<<<----->>>
Kata : PAVILION
P
A
V
I
L
O
N
<<<----->>>
```

This screenshot shows the Visual Studio Code interface with two tabs open. The active tab, 'fuz2.cpp - TULI\_I - Visual Studio Code', displays the output of a C++ program. The program prints a dot matrix representation of the word 'HAZMESS'. The output includes timing information: a total of 2879 comparisons and a execution time of 189796 microseconds. The bottom part of the terminal shows the same process for the words 'MORAL' and 'PAVILION'.

The screenshot shows two separate terminal windows in Visual Studio Code, both running on Windows 10. The top window is titled 'fnc2.cpp - Tugas 1 - Visual Studio Code' and the bottom window is titled 'powershell'. Both terminals are executing a C++ program that performs a search operation on a 30x30 matrix.

**Top Terminal Output:**

```
<<<----->>>
Kata : PAVILION
N O T I L V A P
E - - - - -
G - - - - -
L - - - - -
A - - - - -
E - - - - -
Total comparison : 680
Waktu eksekusi : 385954 microseconds
<<<----->>>
Kata : REGULATE
E - - - - -
G - - - - -
L - - - - -
A - - - - -
E - - - - -
Total comparison : 1397
Waktu eksekusi : 386996 microseconds
<<<----->>>
Kata : RELEASABLE
E - - - - -
B - - - - -
A - - - - -
I - - - - -
E - - - - -
R - - - - -
Total comparison : 1959
Waktu eksekusi : 386996 microseconds
<<<----->>>
Total semua comparison : 19394
Waktu total eksekusi : 1940721 microseconds
PS D:\...\Tugas 1\Tugas 1\submited>
```

**Bottom Terminal Output:**

```
<<<----->>>
Kata : RELEASABLE
E - - - - -
B - - - - -
A - - - - -
I - - - - -
E - - - - -
R - - - - -
Total comparison : 1959
Waktu eksekusi : 386996 microseconds
<<<----->>>
Total semua comparison : 19394
Waktu total eksekusi : 1940721 microseconds
PS D:\...\Tugas 1\Tugas 1\submited>
```

## 7. Large (30 x 30)

```

1 Z B E Y D A J N Y S P E A A E F N H E E I F S E B S N C R
2 L V Z B M J C Z L R S Q C L N A N O S S T V F C U X N N R C
3 R I G I L K E N T U M S R N M B Y R Y U R E Q P N R P R Y K
4 K T Z A G S Y T E C C F U I E I E Y A C H U O A M R F N C I
5 X U Q T H I P G U X Z A X L H F A H B M O N W U H Q O Y C D
6 W L Q J Y Q L T I S D Y I A R F L P F P A R Z Q V P I T P Q
7 H G X Y G E T R F V G Q V M G A D E L C W X P F Z G V Y S T
8 K P A E T Q T O K Q F A N R M F N G T A T Q N D Q K M C L A
9 S J O E N A V B Z C D Q T O H T K Y O L C W E Z G A U J A P
10 E Z B C L B N F H Q M N F L W R O N W S W I A X J B N Y E V
11 J H D L G N Y F O G T H B K T B R O V I O U D R B E X L S J
12 G X E V B C U J J T X Q Z J A B M A R H C G F U Z Q L U Z L
13 B B S R W D T E B U O O R A M D F E X T W Y D D S A V H D K
14 S E R A T N A E L N A T H M K I G Y M A Y E K J L N Y L Z W
15 K Y S G U U M J C C S X D Y H G M S O N R S O Y N P I Y S
16 M V E Q B W F F U G T V L E G I R O F W E N U R E X V U X S
17 U M R L P H Y R B A Z E C M O C R U S I G E Q O K U M T V H
18 V L P G Q D F A U U L G J Y T R A M I A U F A N U L C P G B
19 S A M Y D Q X H A K N A P T Q T N C T U L E Y Y S L Z N W U
20 U U R T Q F X L K X H D L Z K F U X I L U D Q B J O P E R M
21 I C Q C P W D S T H A D A R D B Q N Y P S A Q T V P T J U N
22 R S R C T E Q P O V Z N G G J S Q T R H S X L A L U A H S G
23 I Y B G B U A F H W H A T G A J M R G R P E X T H V V S N L
24 S Q S A Z A R Z V P M N Q S M R S L N X P W D P A D P X H W
25 C H R J L I J U T Y O J Q L S R M F P A V P L D R I L U Z R
26 W A W N P L R D S N N C C K R M E O D D K K O F T R J B X
27 N G A U W F Y U W Q L C S W D B A H C P R E J V P S L B A R
28 U I L D M U V X S V V Q I Z P A A Z W K J Y Q Q X H A D E N
29 R D H U K R T S F U B M Y R Q R R K D Z Y R G U M M U Y G
30 K M F H Z F W Z Q F W Z F W A H G E P O P X T O I O H D G G
31
32 ACRUX
33 ADHARA
34 ALDEBARAN
35 ALNAIR
36 ALNILAM
37 ALTAIR
38 ANTARES
39 ARCTURUS
40 BELLATRIX
41 BETELGEUSE
42 CANOPUS
43 ELNATH
44 FOMALHAUT
45 HADAR
46 MIAPLACIDUS
47 MIMOSA
48 POLLUX

```

The screenshot shows the Visual Studio Code interface with the following details:

- File Explorer:** Shows a file named "f6z.cpp" with a size of 30 bytes.
- Code Editor:** Displays the matrix pattern for the star name "ACRUX". The matrix is 30x30 characters in size.
- Status Bar:** Shows the message "DRAWN MATRIX : 30 x 30".
- Bottom Status Bar:** Shows "Total compilation: 43 ms" and "Wall clock: 237.291 microseconds".
- Bottom Right:** Shows the date "15/12/2020", time "10:15", and a battery icon.

The screenshots show the execution of a C++ program named `testf` in Visual Studio Code across five different names: ADAMIA, ALDEBARI, ALMAR, ALTAYA, and ARCTURS. Each execution results in a unique dot matrix pattern and provides performance metrics.

**ADAMIA:**

- Total comparison : 3333
- Waktu eksekusi : 303000 microseconds

**ALDEBARI:**

- Total comparison : 3323
- Waktu eksekusi : 38995 microseconds

**ALMAR:**

- Total comparison : 4882
- Waktu eksekusi : 392999 microseconds

**ALTAYA:**

- Total comparison : 89
- Waktu eksekusi : 303243 microseconds

**ARCTURS:**

- Total comparison : 4241
- Waktu eksekusi : 342400 microseconds

**Output:**

```
Kata : ADAMIA
.
.
.
Kata : ALDEBARI
.
.
.
Kata : ALMAR
.
.
.
Kata : ALTAYA
.
.
.
Kata : ARCTURS
```

testf[0-9].txt - Test 1 - Visual Studio Code

File Edit Selection View Go Run Terminal Help

PROBLEMS OUTPUT TERMINAL

OPEN EDITOR

Kata : ARCTURUS

Total comparison : 3202  
Matchs okokoul : 38980 microseconds

Kata : BELATRICK

Total comparison : 3819  
Matchs okokoul : 38980 microseconds

Kata : BETELGEUSE

Total comparison : 3878  
Matchs okokoul : 38996 microseconds

Kata : CANOPUS

Total comparison : 958  
Matchs okokoul : 38980 microseconds

Kata : ELMATH

Total comparison : 2599  
Matchs okokoul : 389798 microseconds

Kata : ELNATH

Total comparison : 2599  
Matchs okokoul : 389798 microseconds

Kata : Fomalhaut

Total comparison : 1207  
Matchs okokoul : 38996 microseconds

Kata : HADAR

LN 17 Col 80 Spaces 4 UFF 4 CLIF Open in int R

File Edit Selection View Go Run Terminal Help

PROBLEMS OUTPUT TERMINAL

OPEN EDITOR

task 1

Kata : HADAM

total comparison : 4208  
total executed : 588999 microseconds

H A D A M

Kata : HADAMUS

total comparison : 295  
total executed : 191999 microseconds

Kata : HADMSA

File Edit Selection View Go Run Terminal Help

PROBLEMS OUTPUT TERMINAL

OPEN EDITOR

task 1

Kata : HADMSA

total comparison : 2296  
total executed : 187994 microseconds

Kata : HADMSA

total comparison : 4108  
total executed : 400000 microseconds

Kata : HADMSA

## 8. Large (34 x 34)

```

1 P J M M N B O X N A O V W S P W J R V W E Y C C U Q Q J I N I J I E A
2 N I S A H A Q A I C Q B S J Q T E X I G V L J L O S E J K J K Y R M
3 O P H F V Z Y Y R D I O K R I S R Q F Y T T C O A V O K E P U A O E
4 B O B S T A R R F E R V F G U A S X E K Y T L O G D S O X K R V G I
5 R H N C D W N A O C P R Y A H I S H I A K E B O N O D O I U E C U S
6 U Y D D Z L Y O R V O H A S O I B N Q V H V W E D Q N U L Z R H
7 O Y F U Y X O M T R I N H M N U Q O L A H G N I K S G O R N L T E I O
8 B K F M A T A G I O N J A T P K S E C G B J D H D B A R Y L T I C D
9 O S L B Z M H C Y A P B E S E S F T H R Y E Y Q X I H O L P T U H A O
10 N N B X A J E T C T S G H M M R G I A G J K E A 3 G S L P O A H A P T
11 D O W N T N S G A P G M U V C F N D V Z U M W I Q H D E N S K I O
12 H I X B I N I N Q U R H B V N H E N Z X A M I N I V I I A E X
13 J E D D O U Q T E E U A V A X M Q S A G F K L I Z M A C G I D W
14 H S M D U V Y X I S S M Y E R V E R A C E L Y U N E I U I T
15 O R Z I S K V I Z E M A G A M D M Z Z E Z F B D A C C P A F X N
16 Q T O S K N S O F F Q S N U I H E V V N N P A D H Z Q P R T Z X N
17 J A U S W X S Z F U T Q L S Q P O H A T T H A G C C I T H W V V X O I
18 H F E U Y U N D R U S N J Z R R M N G A E O R P T H N C H E A U K C N
19 S K L I N E E X I S K N D T E B N A L Y F U I G U E A Q V Z W Y H G
20 I R R C U S Z I I A N P N J T E K R Q G A G F V J R Z T H O A K E T
21 P E Q N C X U V V N R L C I S S U A T Q U E H Z B Z R E R T Q D J G I
22 M V H O A B R F C G E R A T Z C K L L R S X T A E M U P V Z A U K A C
23 U S V I V E A A X S O N A U S T T S Y X O E Z W O K C W B X H N A K
24 S Y P T X B M I S D S C S A R X N A R I T A T A I S H I N H A N D E
25 J L O E K A I A O C H E M T F K F L O D U R I L O M Y S I C C A T
26 O F H R C Q K I Z Y C I M A T I K A N E F U K U K I T A R U X B V M
27 Q D Q W N I E B O N A V W J N E E U Q C M O R Z J E M B D P C Y J I
28 J M J E C R A N E D O N I H S U K A B A R U K A S T A A F I V S Q L
29 S M A R T F A L C O N W O K K R A O E S T O K A I T E I O S I L C C
30 Q V S A M F I M M Y O R B O R O N N E Z X A C V I G I F 3 Y S C A M
31 N W O O L S R V F E L A T V L P A J 3 L X C M R Q M H E N K N V V P
32 K P T N R P O H G H E J Z W Y T S U V E P I A F R N U Q P E D P A K
33 W Q N E T S V E J R Y K E V O R G R I A N O V T I C O L O G Y R A
34 P J J A C N O K D Q G F G Q B W F V E I S H I N F L A S H L K X W E
35
36 AGNESDIGITAL
37 AGNESTACHYON
38 AIRGROOVE
39 BIMAHAYAHIDE
40 CURRENCCHAN
41 DAINASCARLET
42 EISHINFLASH
43 ELCONDORPASA
44 FINEMOTION
45 FUJIKISEKI
46 GOLDACITY
47 GOLDSHIP
48 GRASSMONDER
49 HARUARARA
50 HISIKAEBONO
51 HISIAMAON
52 INESFUIN
53 KAMAKAMIPRINCESS
54 KINGHALO

```

File Edit Selection View Go Run Terminal Help test8 (34x34).txt - Tucil 1 - Visual Studio Code

OPEN EDITORS

- `fix2.cpp submitted`
- `x test8 (34x34).txt...`

TUCIL 1

- `> vscode`
- `> extended`
- `> finish`
- `> submitted`
  - `fix2.cpp`
  - `fix2.exe`
  - `test1 (7x8).txt`
  - `test2 (11x1).txt`
  - `test3 (14x16).txt`
  - `test4 (20x20).txt`
  - `test5 (20x24).txt`
  - `test6 (22x22).txt`
  - `test7 (30x30).txt`
  - `test8 (34x34).txt`
- `b.txt`
- `13520090_Rahmat Ra...`
- `13520090_Rahmat Ra...`
- `-> Tugas-Kecil-1-(2022)...`

Kata : AGNESDIGITAL

```
----->>>>
-----<<<<
```

Total comparison : 375  
Waktu eksekusi : 234263 microseconds

Kata : AGNESTACHYON

```
----->>>>
-----<<<<
```

Total comparison : 2728  
Waktu eksekusi : 287737 microseconds

Kata : AIRGROOVE

```
----->>>>
-----<<<<
```

File Edit Selection View Go Run Terminal Help test8 (34x34).txt - Tucil 1 - Visual Studio Code

OPEN EDITORS

- `fix2.cpp submitted`
- `x test8 (34x34).txt...`

TUCIL 1

- `> vscode`
- `> extended`
- `> finish`
- `> submitted`
  - `fix2.cpp`
  - `fix2.exe`
  - `test1 (7x8).txt`
  - `test2 (11x1).txt`
  - `test3 (14x16).txt`
  - `test4 (20x20).txt`
  - `test5 (20x24).txt`
  - `test6 (22x22).txt`
  - `test7 (30x30).txt`
  - `test8 (34x34).txt`
- `b.txt`
- `13520090_Rahmat Ra...`
- `13520090_Rahmat Ra...`
- `-> Tugas-Kecil-1-(2022)...`

Kata : AGNESTACHYON

```
----->>>>
-----<<<<
```

Total comparison : 2728  
Waktu eksekusi : 287737 microseconds

Kata : AIRGROOVE

```
----->>>>
-----<<<<
```

File Edit Selection View Go Run Terminal Help test8 (34x34).txt - Tucil 1 - Visual Studio Code

OPEN EDITORS

- `fix2.cpp submitted`
- `x test8 (34x34).txt...`

TUCIL 1

- `> vscode`
- `> extended`
- `> finish`
- `> submitted`
  - `fix2.cpp`
  - `fix2.exe`
  - `test1 (7x8).txt`
  - `test2 (11x1).txt`
  - `test3 (14x16).txt`
  - `test4 (20x20).txt`
  - `test5 (20x24).txt`
  - `test6 (22x22).txt`
  - `test7 (30x30).txt`
  - `test8 (34x34).txt`
- `b.txt`
- `13520090_Rahmat Ra...`
- `13520090_Rahmat Ra...`
- `-> Tugas-Kecil-1-(2022)...`

Kata : AIRGROOVE

```
----->>>>
-----<<<<
```

File Edit Selection View Go Run Terminal Help test8 (34x34).txt - Tucil 1 - Visual Studio Code

EXPLORER PROBLEMS OUTPUT TERMINAL

<<< ----->>>

Kata : AIRGROOVE

- E V O O R G R I A

Total comparison : 6566  
Waktu eksekusi : 245801 microseconds  
<<< ----->>>

Kata : BIWAHAYAHIDE

Ln 54, Col 9 Spaces: 4 UTF-8 CRLF Django.txt

File Edit Selection View Go Run Terminal Help test8 (34x34).txt - Tucil 1 - Visual Studio Code

EXPLORER PROBLEMS OUTPUT TERMINAL

<<< ----->>>

Kata : BIWAHAYAHIDE

E  
D  
I  
H  
A  
Y  
H  
A  
M  
T  
B

Total comparison : 4210  
Waktu eksekusi : 246884 microseconds  
<<< ----->>>

Kata : CURRENCHAN

Ln 54, Col 9 Spaces: 4 UTF-8 CRLF Django.txt

File Edit Selection View Go Run Terminal Help test8 (34x34).txt - Tucil 1 - Visual Studio Code

EXPLORER PROBLEMS OUTPUT TERMINAL

<<< ----->>>

Kata : CURRENCHAN

N  
A  
I  
C  
N  
E  
R  
U  
C

Total comparison : 4359  
Waktu eksekusi : 245807 microseconds  
<<< ----->>>

Kata : DAIWASCARLET

Ln 54, Col 9 Spaces: 4 UTF-8 CRLF Django.txt

```
File Edit Selection View Go Run Terminal Help test8 (34x34).txt - Tucil 1 - Visual Studio Code powershell +> <> <<< >>> EXPLORE PROBLEMS OUTPUT TERMINAL DAIWASCARLET test8 (34x34).txt TUCIL 1 .vscode extended finish submitted fix2.cpp fix2.exe test1 (7x8).txt test2 (11x11).txt test3 (4x16).txt test (20x20).txt test5 (20x24).txt test6 (22x22).txt test7 (0x30).txt test (34x34).txt ~$520090_Rahmat Ra... 13520090_Rahmat Ra... 13520090_Rahmat Ra... b.txt Tugas-Kecil-1-(2022)... Total comparison : 4587 Waktu esekusi : 292958 microseconds <<< >>> EISHINFLASH <<< >>> EISHINFLASH
```

The screenshot shows a Visual Studio Code interface with the following details:

- File Explorer:** Shows a tree view of files and folders. Under "TUCI 1", there are several files including "fix2.cpp", "fix2.exe", and multiple "testX" files (e.g., test1, test2, test3, test4, test5, test6, test7). A file named "test8 (34x34).txt" is currently selected.
- Terminal:** The active tab is "TERMINAL". The output shows the following text:

```
<<<----- EISHINFLASH ----->>>
Kata : EISHINFLASH

Total comparison : 5884
Waktu eksekusi : 247721 microseconds
<<<----- ECONDOPASA ----->>>
Kata : ECONDOPASA
```
- Status Bar:** Shows "Ln 54, Col 9" and "Spaces: 4" at the bottom left. On the right, it shows "UTF-8", "CRLF", "Django.txt", and icons for "powershell", "git", and "refresh".

The screenshot shows a Visual Studio Code interface with the following details:

- File Explorer:** Shows a tree view of files and folders, including 'TULI 1' which contains 'fix2.cpp', 'fix2.exe', and several test files like 'test1.txt' through 'test7.txt'. A file named 'test8 (34x34).txt' is currently selected.
- Terminal:** The active tab in the top navigation bar. It displays the output of a program named 'Kata'. The output includes:
  - A grid of characters (E, L, C, O, N, D, O, R, P, A, S, A) arranged in a 12x12 pattern.
  - Total comparison : 96
  - Waktu eksekusi : 251245 microseconds
- Status Bar:** Shows the current file is 'test8 (34x34).txt', the line number is Ln 54, column is Col 9, and the encoding is UTF-8.

Kata : FINEMOTION

```
<<<----->>>
Total comparison : 1167
Waktu eksekusi : 254169 microseconds
<<<----->>>
```

Kata : FUJIKISEKI

```
<<<----->>>
```

Total comparison : 1526  
Waktu eksekusi : 242122 microseconds

<<<----->>>

Kata : GOLD CITY

```
<<<----->>>
```

Total comparison : 6626  
Waktu eksekusi : 243015 microseconds

<<<----->>>

Kata : GOLD SHIP

```
P -  
- T -  
- H -
```

Kata : FUJIKISEKI

```
<<<----->>>
```

Kata : GOLD CITY

```
<<<----->>>
```

Total comparison : 1526  
Waktu eksekusi : 242122 microseconds

<<<----->>>

Kata : GOLD CITY

```
<<<----->>>
```

Kata : GOLD CITY

```
<<<----->>>
```

Kata : GOLD SHIP

```
P -  
- T -  
- H -
```

File Edit Selection View Go Run Terminal Help test8 (34x34).txt - Tucil 1 - Visual Studio Code

EXPLORER PROBLEMS OUTPUT TERMINAL

<<< ----->>>

Kata : GOLDSHIP

P -  
I -  
H -  
S -  
D -  
L -  
O -  
G -

Total comparison : 1082  
Waktu eksekusi : 242221 microseconds  
<<< ----->>>

Kata : GRASSMONDER

R -  
E -  
D -  
N -  
O -  
W -  
S -  
S -  
A -  
R -  
G -

Total comparison : 3811  
Waktu eksekusi : 246801 microseconds  
<<< ----->>>

Kata : HARUURARA

A -  
R -  
A -  
R -  
A -

Total comparison : 1359  
Waktu eksekusi : 243187 microseconds  
<<< ----->>>

Kata : HISHIAKEBONO

A -  
R -  
A -  
R -  
A -  
U -  
U -  
R -  
A -  
H -

Ln 54, Col 9 | Spaces: 4 | UTF-8 | CRLF | Django.txt | powershell + v | 🔍 | ⌂ | ENG | 10:26 | 1

File Edit Selection View Go Run Terminal Help test8 (34x34).txt - Tucil 1 - Visual Studio Code

EXPLORER PROBLEMS OUTPUT TERMINAL

<<< ----->>>

Kata : GRASSMONDER

R -  
E -  
D -  
N -  
O -  
W -  
S -  
S -  
A -  
R -  
G -

Total comparison : 3811  
Waktu eksekusi : 246801 microseconds  
<<< ----->>>

Kata : HARUURARA

A -  
R -  
A -  
R -  
A -

Total comparison : 1359  
Waktu eksekusi : 243187 microseconds  
<<< ----->>>

Kata : HISHIAKEBONO

A -  
R -  
A -  
R -  
A -  
U -  
U -  
R -  
A -  
H -

Ln 54, Col 9 | Spaces: 4 | UTF-8 | CRLF | Django.txt | powershell + v | 🔍 | ⌂ | ENG | 10:27 | 1

File Edit Selection View Go Run Terminal Help test8 (34x34).txt - Tucil 1 - Visual Studio Code

EXPLORER PROBLEMS OUTPUT TERMINAL

<<< ----->>>

Kata : HARUURARA

A -  
R -  
A -  
R -  
A -  
U -  
U -  
R -  
A -  
H -

Total comparison : 1359  
Waktu eksekusi : 243187 microseconds  
<<< ----->>>

Kata : HISHIAKEBONO

A -  
R -  
A -  
R -  
A -  
U -  
U -  
R -  
A -  
H -

Ln 54, Col 9 | Spaces: 4 | UTF-8 | CRLF | Django.txt | powershell + v | 🔍 | ⌂ | ENG | 10:27 | 1

The screenshot shows a Visual Studio Code interface with the following details:

- File Explorer:** Shows a folder named "TUCIL 1" containing files like ".vscode", "extended", "fix2.cpp", "fix2.exe", and several "testX" files (e.g., test1, test2, test3, test4, test5, test6, test7, test8).
- Terminal:** The active tab is "TERMINAL". It displays the output of a string comparison program. The output includes:
  - A large grid of characters (H, I, S, A, M, Z, O, N) arranged in a 3x34 pattern.
  - Timing information: "Total comparison : 1068" and "Waktu eksekusi : 243082 microseconds".
  - Text "Kata : HISHIZAMON" at the top.
  - Text "Kata : INESFUIJIN" near the bottom.
- Status Bar:** Shows "In 54, Col 9" and "Spaces: 4" along with icons for LITE-B, CRLF, and Diagonal ht.

The screenshot shows a Visual Studio Code interface with the following details:

- File Explorer:** Shows a tree view of files and folders under "TULI 1".
  - Submitted files include: fix2.cpp, fix2.exe, test1 (7x0).txt, test2 (1x11).txt, test3 (1x16).txt, test4 (20x20).txt, test5 (20x24).txt, test6 (2x22).txt, test7 (30x30).txt, and test8 (34x34).txt.
  - Recent files: -S20090\_Rahmat Ra..., 13520090\_Rahmat Ra..., 13520090\_Rahmat Ra..., b.txt, Tugas-Kecil-1-(2022)....
- Terminal:** The active tab is "TERMINAL". It displays the output of a Kata challenge.

```
<<< ----- >>>
Kata : INESFUIJIN
-----
I N
E S
F U
J I
N

-> $20090_Rahmat Ra...
13520090_Rahmat Ra...
13520090_Rahmat Ra...
b.txt
Tugas-Kecil-1-(2022)...

Total comparison : 2214
Waktu eksekusi : 243004 microseconds
<<< ----- >>>

Kata : KAWAKAMIPRINCESS
-----
```
- Status Bar:** Shows file number 10/28, language English (ENG), and the date 10/28.

```
Kata : KAWAKAMI PRINCESS
A
A
W
A
K
M
I
P
R
T
N
C
S
E
Total comparison : 1011
Waktu eksekusi : 289745 microseconds
Kata : KINGHALO
```

This screenshot shows the Visual Studio Code interface with the terminal tab active. The terminal window displays the output of a program named "KAWAKAMI PRINCESS". The output consists of a grid of letters and some performance statistics. The grid includes letters like A, W, K, M, I, P, R, T, N, C, S, and E. Below the grid, it shows a total of 1011 comparisons and an execution time of 289745 microseconds.

```
Kata : KINGHALO
O
L
A
H
G
N
I
K

Total comparison : 995
Waktu eksekusi : 241537 microseconds
Total semua comparison : 50159
Waktu total eksekusi : 4773942 microseconds
PS D:\() IF SMT 4\$TIMA\Tucil 1\submitted
```

This screenshot shows the Visual Studio Code interface with the terminal tab active. The terminal window displays the output of a program named "KINGHALO". The output consists of a grid of letters and some performance statistics. The grid includes letters like O, L, A, H, G, N, I, and K. Below the grid, it shows a total of 995 comparisons and an execution time of 241537 microseconds. It also indicates a total of 50159 comparisons and a total execution time of 4773942 microseconds.

## 9. Large (31 x 31)

```

1 K T Y Q D A J J O Q I U I R Q P F B S N O F F N Q K H C U B B
2 J U H O A J Y J G H I Z U J S G D I O B N N N K Q G O G I H O
3 V W K Y L H P H D F I D W O I C H M J F T C N V X F N U H I B
4 F G Q X D T C L H A H S I O M O T Z O W X D F Y R N G Q Q S Q
5 V Q J J S Z X A U H R F K I I L H X H W V A L D Q V T E D H I
6 U W Z J L L H N M V V P T P V T N H D W X S C M P K M X O O O
7 I I J R L Y P J E A C V K W T M I O H S Z U M H P E C Z S W J
8 N K G A J K H W K T O N D C Y P T L K L A C E W G A V J U O G
9 P O H H X M P Y Z N F Z A C Y P J W E O S C C R W K U I H R G
10 K E B A B J D V M Y F R N M W N M P G X K E B Z W H V J A C W
11 C N A P Q L W C J E S K D V T R U L L O Z R J W X Y A F K C W
12 U G P Z X Y L D T U O S M B K S K B A P E Z H E I S X F O Y A
13 G G B W A Z V B G Q W K M X I P C A U P N E P A C E U Z I C
14 M F W P P V A I N M F N F J U W O W V M E H Z Y I R H Q D Z S
15 X L E C P D Z L O M D F J L F Z Z B X R V T M O Q H N V L O X
16 X W U W V S T I O H Y G G Q G K L W K X T L D P K Q I T W T R
17 X T S K W K Q E Q Q Z F K O Z T Q A W A E A S Q B L P P R E G
18 L P X I I R F Q T B L X X T R F L Y N E J H Y U F G V Z J O D
19 K A M T J L I Z C T A W S S B N J T C X G Q W H S Q A Z Z M Z
20 S V H U N A S G O R X K C U R Q M D E G E I S E U T B J U F P
21 B E C P K H Q W D X U O S B D K S X U Y E W Q P H N W H I A J
22 Y L Z K R U R B U U Z D B O G O W U P B D U M K I E E D E B J
23 D D U G Q A R X C B V A P A T B K A F F Q X Z X H Q S M H Y
24 X G G B B Q B G K D K Z L O H H D Q W C G H W P T V Q X Y W S
25 D X A D L Y N M H Z X C C T I C A D H J Q L I M D M X C E X Y
26 V J Z Q I P L I G N I B U W W J U U G N D R T I U H C R D M X
27 O G Z J C R Z R M D G M U J Q K O U I G E W L A C T Y R O S E
28 V M I A J C S W D M N Y A T Q L Y A W G R N W Y H D D W N V E
29 B R P J N O J B V W H L B J Q Z Z G R B T G P A R O L R E E K
30 D J Y H V C D R C W R Z R U R P F U V V N R W M P W S R E N G
31 Z G N H G A H X I B X K S N E R B Z D L F G E T D M F E Y O O
32
33 NASGOR
34 BAKSO
35 MIAYAM
36 SOTO
37 BIHUN
38 BJAG
39 PIZZA
40 BURGER
41 KEBAB

```

File Edit Selection View Go Run Terminal Help fix2.cpp - Tucil 1 - Visual Studio Code

EXPLORER PROBLEMS OUTPUT TERMINAL

||||< >>>>

Kata : NASGOR

- - - - -

fix2.cpp submitted

> vscode > extended > finish

> submitted

fix2.cpp

fix2.exe

test1 (7x8).txt

test2 (11x1).txt

test3 (14x16).txt

test4 (20x20).txt

test5 (20x24).txt

test6 (22x22).txt

test7 (30x30).txt

test8 (34x34).txt

test9 (31x31).txt

-\$520090\_Rahmat Ra...

13520090\_Rahmat Ra...

b.txt

Tugas-Kecil-1-(2022)...

Total comparison : 3899  
Waktu eksekusi : 253088 microseconds  
<<<->>>

Kata : BAKSO

- - - - -

OUTLINE

File Edit Selection View Go Run Terminal Help fix2.cpp - Tucil 1 - Visual Studio Code

EXPLORER PROBLEMS OUTPUT TERMINAL

Waktu eksekusi : 253088 microseconds  
<<<->>>

Kata : BAKSO

- - - - -

fix2.cpp submitted

> vscode > extended > finish

> submitted

fix2.cpp

fix2.exe

test1 (7x8).txt

test2 (11x1).txt

test3 (14x16).txt

test4 (20x20).txt

test5 (20x24).txt

test6 (22x22).txt

test7 (30x30).txt

test8 (34x34).txt

test9 (31x31).txt

-\$520090\_Rahmat Ra...

13520090\_Rahmat Ra...

b.txt

Tugas-Kecil-1-(2022)...

Total comparison : 3634  
Waktu eksekusi : 211337 microseconds  
<<<->>>

Kata : MIAYAM

- - - - -

OUTLINE

File Edit Selection View Go Run Terminal Help fix2.cpp - Tucil 1 - Visual Studio Code

EXPLORER PROBLEMS OUTPUT TERMINAL

Waktu eksekusi : 253088 microseconds  
<<<->>>

Kata : BAKSO

- - - - -

fix2.cpp submitted

> vscode > extended > finish

> submitted

fix2.cpp

fix2.exe

test1 (7x8).txt

test2 (11x1).txt

test3 (14x16).txt

test4 (20x20).txt

test5 (20x24).txt

test6 (22x22).txt

test7 (30x30).txt

test8 (34x34).txt

test9 (31x31).txt

-\$520090\_Rahmat Ra...

13520090\_Rahmat Ra...

b.txt

Tugas-Kecil-1-(2022)...

Total comparison : 3634  
Waktu eksekusi : 211337 microseconds  
<<<->>>

Kata : MIAYAM

- - - - -

OUTLINE

fix2.cpp - Tucil 1 - Visual Studio Code

File Edit Selection View Go Run Terminal Help

OPEN EDITORS

PROBLEMS OUTPUT TERMINAL

Waktu eksekusi : 211337 microseconds  
<<<-->>>

Kata : MIAYAM

- M  
- I  
- A  
- Y  
- A  
- M

Total comparison : 5170  
Waktu eksekusi : 208752 microseconds  
<<<-->>>

Kata : SOTO

- S  
- O  
- T  
- O

N U H I B

In 226, Col 25 Spaces: 4 UTF-8 CRLF C++ Win32 ⚡ 🔍 ENG 10:58

fix2.cpp - Tucil 1 - Visual Studio Code

File Edit Selection View Go Run Terminal Help

OPEN EDITORS

PROBLEMS OUTPUT TERMINAL

Total comparison : 5170  
Waktu eksekusi : 208752 microseconds  
<<<-->>>

Kata : SOTO

- S  
- O  
- T  
- O

Total comparison : 4659  
Waktu eksekusi : 215886 microseconds  
<<<-->>>

Kata : BIHUN

- N  
- U  
- H  
- I  
- B

N U H I B

In 226, Col 25 Spaces: 4 UTF-8 CRLF C++ Win32 ⚡ 🔍 ENG 10:58

fix2.cpp - Tucil 1 - Visual Studio Code

File Edit Selection View Go Run Terminal Help

OPEN EDITORS

PROBLEMS OUTPUT TERMINAL

Total comparison : 4659  
Waktu eksekusi : 215886 microseconds  
<<<-->>>

Kata : BIHUN

- N  
- U  
- H  
- I  
- B

N U H I B

Total comparison : 439  
Waktu eksekusi : 206750 microseconds  
<<<-->>>

Kata : BIJAG

- B  
- I  
- J  
- A  
- G

N U H I B

In 226, Col 25 Spaces: 4 UTF-8 CRLF C++ Win32 ⚡ 🔍 ENG 10:58

```
Total comparison : 439
Waktu eksekusi : 206750 microseconds
<<<----->>>
Kata : BIRJAG

Total comparison : 4740
Waktu eksekusi : 220545 microseconds
<<<----->>>
Kata : PIZZA
```

```
Total comparison : 4740
Waktu eksekusi : 220545 microseconds
<<<----->>>
Kata : PIZZA

Total comparison : 6095
Waktu eksekusi : 241214 microseconds
<<<----->>>
Kata : BURGER
```

```

Total comparison : 6095
Waktu eksekusi : 241214 microseconds
<<<----->>>
Kata : BURGER

```

```

Total comparison : 6097
Waktu eksekusi : 202746 microseconds
<<<----->>>
Kata : KEBAB

```

K E B A B

## D. LINK

Source code dan laporan dapat diakses melalui:

[https://github.com/Amike31/WORD\\_SEARCH\\_PUZZLE-BRUTE\\_FORCE\\_SOLVER](https://github.com/Amike31/WORD_SEARCH_PUZZLE-BRUTE_FORCE_SOLVER)

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