

Laporan Tugas Kecil 1
IF2211 Strategi Algoritma



Penyelesaian Word Search Puzzle dengan Algoritma *Brute Force*

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BAB I

Algoritma *Brute Force*

1.1 Deskripsi Langkah-Langkah Penggunaan Algoritma *Brute Force*

Membaca file text lalu menghitung banyak baris dan kolom pada puzzle serta menghitung banyak kata yang ingin dicari. Setelah menemukan baris dan kolom, matriks dibuat dengan ukuran baris dan kolom tersebut lalu menge-*assign* huruf-huruf yang ada ke matriks.

Dilakukan iterasi sebanyak kata yang ada untuk mencari kata tersebut di puzzle. Pencarian dimulai dari huruf yang ada di pojok kiri atas (puzzle[0][0]) dan dibandingkan dengan huruf pertama kata, jika sama maka akan dilanjutkan ke huruf di sebelah kanan puzzle serta dibandingkan dengan huruf kedua pada kata, namun jika berbeda, huruf yang ada di puzzle[0][1] akan dibandingkan ke huruf pertama kata yang ingin dicari. Begitu seterusnya, jika dipertengahan kata ada huruf yang berbeda, maka perbandingan akan diulang dari huruf pertama kata.

Jika kata telah ditemukan di, maka warna akan di-*assign* ke huruf yang ada di puzzle. Jika dengan perbandingan ke kanan tidak ditemukan, akan dilakukan perbandingan ke arah yang lain yaitu, kanan-bawah, bawah, kiri-bawah, kiri, kiri-atas, atas, dan kanan-atas. Langkah pada setiap perbandingan sama dengan langkah yang ada di perbandingan kanan.

Dengan asumsi **bahwa setiap kata yang ingin dicari ada di puzzle**, setelah menemukan kata pertama, maka dilanjutkan ke kata selanjutnya hingga semua kata ditemukan dipuzzle, lalu puzzle akan ditampilkan.

BAB II

Source Code Program dengan C++

2.1 Header File

```
#include <iostream>
#include <string>
#include <fstream>
#include <vector>
#include <chrono>

#define RED "\x1B[31m"
#define GREEN "\x1B[32m"
#define YELLOW "\x1B[33m"
#define BLUE "\x1B[34m"
#define MAGENTA "\x1B[35m"
#define CYAN "\x1B[36m"
#define BLACK "\x1B[0m"

struct Alpha{ // To assign the color to letter
    char Alphabet;
    const char* color;
};

using namespace std;
using namespace std::chrono;
```

2.2 displayPuzzle

```
void displayPuzzle(vector<vector<Alpha>> puzzle, int row, int col){
    for(int i = 1; i<row+1; i++){
        for(int j = 0; j < col; j++){
            cout << puzzle[i][j].color << puzzle[i][j].Alphabet << ' ';
        }
        cout << "\n";
    }
}
```

2.3 generateColor

```
const char* generateColor(){
    const char* color[6] = {RED, GREEN, YELLOW, BLUE, MAGENTA, CYAN};
    int idx = rand()%6;
    return color[idx];
}
```

2.4 Check

2.4.1 check2Right

```
bool check2Right(vector<vector<Alpha>> &puzzle, string word, bool flag, int
idxX, int idxY, int row, int col, int &comp){
    if(!flag && (idxY + (int) word.size()) <= col){
        int y = idxY;
        int idxWord = 0;
        int wordSize = word.size();
        bool found = false;
```

```

        while(puzzle[idxX+1][y].Alphabet == word[idxWord] && idxWord < wordSize
&& !found){
            comp++;
            y++;
            idxWord++;
            if (idxWord == wordSize){
                found = true;
            }
        }
        const char* color = generateColor();
        if (found == true){
            int idx = idxY;
            for(int i = 0; i < wordSize; i++){
                puzzle[idxX+1][idx].color = color;
                idx++;
            }
        }
        return found;
    }else if (flag == true){
        return true;
    }else{
        return false;
    }
}

```

2.4.2 check2Left

```

bool check2Left(vector<vector<Alpha>> &puzzle, string word, bool flag, int idxX,
int idxY, int row, int col, int &comp){
    if(!flag && (idxY + 1 - (int) word.size()) >= 0){
        int y = idxY;
        int idxWord = 0;
        int wordSize = word.size();
        bool found = false;
        while(puzzle[idxX+1][y].Alphabet == word[idxWord] && idxWord < wordSize
&& !found){
            comp++;
            y--;
            idxWord++;
            if (idxWord == wordSize){
                found = true;
            }
        }
        const char* color = generateColor();
        if (found == true){
            int idx = idxY;
            for(int i = 0; i < wordSize; i++){
                puzzle[idxX+1][idx].color = color;
                idx--;
            }
        }
        return found;
    }else if (flag == true){
        return true;
    }
}

```

```

    }else{
        return false;
    }
}

```

2.4.3 check2Down

```

bool check2Down(vector<vector<Alpha>> &puzzle, string word, bool flag, int
idxX, int idxY, int row, int col, int &comp){
    if(!flag && (idxX + (int) word.size()) <= row){
        int x = idxX+1;
        int idxWord = 0;
        int wordSize = word.size();
        bool found = false;
        while(puzzle[x][idxY].Alphabet == word[idxWord] && idxWord < wordSize &&
!found){
            comp++;
            x++;
            idxWord++;
            if(idxWord == wordSize){
                found = true;
            }
        }
        const char* color = generateColor();
        if (found == true){
            int idx = idxX+1;
            for(int i = 0; i < wordSize; i++){
                puzzle[idx][idxY].color = color;
                idx++;
            }
        }
        return found;
    }else if (flag == true){
        return true;
    }else{
        return false;
    }
}

```

2.4.4 check2Up

```

bool check2Up(vector<vector<Alpha>> &puzzle, string word, bool flag, int idxX,
int idxY, int row, int col, int &comp){
    if(!flag && (idxX + 1 - (int) word.size()) >= 0){
        int x = idxX+1;
        int idxWord = 0;
        int wordSize = word.size();
        bool found = false;
        while(puzzle[x][idxY].Alphabet == word[idxWord] && idxWord < wordSize &&
!found){
            comp++;
            x--;
            idxWord++;
        }
    }
}

```

```

        if (idxWord == wordSize){
            found = true;
        }
    }
    const char* color = generateColor();
    if (found == true){
        int idx = idxX+1;
        for(int i = 0; i < wordSize; i++){
            puzzle[idx][idxY].color = color;
            idx--;
        }
    }
    return found;
}else if (flag == true){
    return true;
}else{
    return false;
}
}

```

2.4.5 check2RightUp

```

bool check2RightUp(vector<vector<Alpha>> &puzzle, string word, bool flag, int
idxX, int idxY, int row, int col, int &comp){
    if(!flag && (idxX + 1 - (int) word.size()) >= 0 && (idxY + (int)
word.size()) <= col){
        int x = idxX+1;
        int y = idxY;
        int idxWord = 0;
        int wordSize = word.size();
        bool found = false;
        while(puzzle[x][y].Alphabet == word[idxWord] && idxWord < wordSize &&
!found){
            comp++;
            x--;
            y++;
            idxWord++;
            if (idxWord == wordSize){
                found = true;
            }
        }
        const char* color = generateColor();
        if (found == true){
            int tempX = idxX+1;
            int tempY = idxY;
            for(int i = 0; i < wordSize; i++){
                puzzle[tempX][tempY].color = color;
                tempX--;
                tempY++;
            }
        }
        return found;
    }else if (flag == true){
        return true;
    }else{
        return false;
    }
}

```

```

    }
}

```

2.4.6 check2RightDown

```

bool check2RightDown(vector<vector<Alpha>> &puzzle, string word, bool flag, int
idxX, int idxY, int row, int col, int &comp){
    if(!flag && (idxX + (int) word.size()) <= row && (idxY + (int) word.size())
<= col){
        int x = idxX+1;
        int y = idxY;
        int idxWord = 0;
        int wordSize = word.size();
        bool found = false;
        while(puzzle[x][y].Alphabet == word[idxWord] && idxWord < wordSize &&
!found){
            comp++;
            x++;
            y++;
            idxWord++;
            if (idxWord == wordSize){
                found = true;
            }
        }
        const char* color = generateColor();
        if (found == true){
            int x = idxX+1;
            int y = idxY;
            for(int i = 0; i < wordSize; i++){
                puzzle[x][y].color = color;
                x++;
                y++;
            }
        }
        return found;
    }else if (flag == true){
        return true;
    }else{
        return false;
    }
}

```

2.4.7 check2LeftDown

```

bool check2LeftDown(vector<vector<Alpha>> &puzzle, string word, bool flag, int
idxX, int idxY, int row, int col, int &comp){
    if(!flag && (idxX + (int) word.size()) <= row && (idxY + 1 - (int)
word.size()) >= 0){
        int x = idxX+1;
        int y = idxY;
        int idxWord = 0;
        int wordSize = word.size();
        bool found = false;

```



```

        while(puzzle[x][y].Alphabet == word[idxWord] && idxWord < wordSize &&
!found){
            comp++;
            x++;
            y--;
            idxWord++;
            if (idxWord == wordSize){
                found = true;
            }
        }
        const char* color = generateColor();
        if (found == true){
            int x = idxX+1;
            int y = idxY;
            for(int i = 0; i < wordSize; i++){
                puzzle[x][y].color = color;
                x++;
                y--;
            }
        }
        return found;
    }else if (flag == true){
        return true;
    }else{
        return false;
    }
}

```

2.4.8 check2LeftUp

```

bool check2LeftUp(vector<vector<Alpha>> &puzzle, string word, bool flag, int
idxX, int idxY, int row, int col, int &comp){
    if(!flag && (idxX + 1 - (int) word.size()) >= 0 && (idxY + 1 - (int)
word.size()) >= 0){
        int x = idxX+1;
        int y = idxY;
        int idxWord = 0;
        int wordSize = word.size();
        bool found = false;
        while(puzzle[x][y].Alphabet == word[idxWord] && idxWord < wordSize &&
!found){
            comp++;
            x--;
            y--;
            idxWord++;
            if (idxWord == wordSize){
                found = true;
            }
        }
        const char* color = generateColor();
        if (found == true){
            int x = idxX+1;
            int y = idxY;
            for(int i = 0; i < wordSize; i++){
                puzzle[x][y].color = color;
                x--;
            }
        }
    }
}

```

```

        y--;
    }
}
return found;
}else if (flag == true){
    return true;
}else{
    return false;
}
}

```

2.5 Main

```

int main(int argc, char const *argv[])
{
    //To count the Row and Column of the puzzle
    string myText;
    string filename;

    cout << "Filename (in test Folder) : ";
    cin >> filename;
    ifstream MyReadFile("../test\\" + filename);

    int row = 0;
    int col = 0;
    int word2Find = 0;
    cout << "\n***** WORD SEARCH PUZZLE *****\n\n";
    while (getline(MyReadFile, myText)){
        cout << myText << endl;
        if (myText[1] == ' '){
            row ++;
            int tempCol = 0;
            for (int j = 0; j < myText.length(); j++){
                if (myText[j] != ' '){
                    tempCol++;
                }
            }
            if (tempCol > col){
                col = tempCol;
            }
        }else{
            word2Find++;
        }
    }
    MyReadFile.close();

    //Initialization Matrtix
    vector<vector<Alpha>> puzzle (row+2, vector<Alpha>(col));
    std::vector<std::string> wordAcco {};

    string newText;
    ifstream newReadText("../test\\" + filename);
    int idxRow = 1;
    int idxCol = 0;
    while (getline(newReadText, newText)){

```

```

        if(newText[1] == ' '){ //assign Puzzle to matriks
            for(int i = 0; i < newText.length(); i++){
                if(newText[i] != ' '){
                    puzzle[idxRow][idxCol].Alphabet = newText[i];
                    puzzle[idxRow][idxCol].color = BLACK;
                    idxCol++;
                    if(idxCol == col){
                        idxCol = 0;
                        idxRow++;
                    }
                }
            }
        }else{ //assign Word to Array
            wordAcco.push_back(newText);
        }
    }

    //Upper-Bottom Padding
    for(int i = 0; i < col; i++){
        puzzle[0][i].Alphabet = '-';
        puzzle[row+1][i].Alphabet = '-';
    }
    newReadText.close();
    //Start Comparison
    auto start = high_resolution_clock::now();
    int countComp = 0; //Count comparison
    //Check the puzzle
    for(int k = 0; k < word2Find; k++){
        int i = 0;
        int j = 0;
        bool found = false;
        while(i < row && !found){
            while(j < col && !found){
                found = check2Right(puzzle, wordAcco[k], false, i, j, row, col,
countComp);
                found = check2Left(puzzle, wordAcco[k], found, i, j, row, col,
countComp);
                found = check2Down(puzzle, wordAcco[k], found, i, j, row, col,
countComp);
                found = check2Up(puzzle, wordAcco[k], found, i, j, row, col,
countComp);
                found = check2RightUp(puzzle, wordAcco[k], found, i, j, row,
col, countComp);
                found = check2RightDown(puzzle, wordAcco[k], found, i, j, row,
col, countComp);
                found = check2LeftDown(puzzle, wordAcco[k], found, i, j, row,
col, countComp);
                found = check2LeftUp(puzzle, wordAcco[k], found, i, j, row, col,
countComp);
                j++;
                if (j == col){
                    j = 0;
                    i++;
                }
            }
        }
    }
}

```

```

        }
    }
    auto stop = high_resolution_clock::now();
    auto duration = duration_cast<microseconds>(stop - start);
    cout << "\nTime taken: " << duration.count() << " microseconds" << endl;
    cout << "Number of letter Comparison : " << countComp << " times" << endl;
    cout << "\n==== RESULT : =====\n" << endl;
    displayPuzzle(puzzle, row, col);
    return 0;
}

```

Bab III

Screenshot Test Case

3.1 Small

3.1.1 Small1.txt

```
Filename (in test Folder) : Small1.txt

***** WORD SEARCH PUZZLE *****

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

EARTH
JUPITER
MARS
MERCURY
NEPTUNE
SATURN
URANUS
VENUS

Time taken: 0 microseconds
Number of letter Comparison : 80 times

===== RESULT : =====

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
```

Gambar 3.1.1 : Hasil Eksekusi Small1.txt

3.1.2 Small2.txt

```
Filename (in test Folder) : Small2.txt

***** WORD SEARCH PUZZLE *****

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

ADA
FORTRAN
PHP
ALGOL
JAVA
PYTHON
ASSEMBLY
LABVIEW
SMALLTALK
BASIC
LOGO
VISUALC
COBOL
PASCAL
DELPHI
PERL

Time taken: 6719 microseconds
Number of letter Comparison : 397 times

===== RESULT : =====

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

Gambar 3.1.2 : Hasil Eksekusi Small2.txt

3.1.3 Small3.txt

```
Filename (in test Folder) : Small3.txt

***** WORD SEARCH PUZZLE *****

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

ADHERENCE
AMUSE
BIBLICAL
BRAID
BRINY
DISHONEST
FINAL
INSCRIBED
IRREGULAR
JUNE
PERJURY
PRESCRIBED
RECOVER
SACKING
SHOWER
SOLID
SPATULA
TOTALLY
URUGUAY

Time taken: 7999 microseconds
Number of letter Comparison : 1186 times
```

```

===== RESULT : =====

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

```

Gambar 3.1.3 : Hasil Eksekusi Small3.txt

3.2 Medium

3.2.1 Medium1.txt

```

Filename (in test Folder) : Medium1.txt

***** WORD SEARCH PUZZLE *****

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

ANDROMEDA
ANTLIA

```



```

AQUARIUS
ARIES
CANCER
CAPRICORNUS
CARINA
CASSIOPEIA
CETUS
CONSTELLATIONS
DRACO
GEMINI
HERCULES
HYDRA
LEO
LEPUS
LIBRA
LYNX
LYRA
NORMA
ORION
PAVO
PEGASUS
PHOENIX
PISCES
SAGITTARIUS
SCORPIUS
SCULPTOR
SERPENS
STARS
TAURUS
VIRGO

Time taken: 5444 microseconds
Number of letter Comparison : 2343 times

===== RESULT : =====

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

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Gambar 3.2.1 : Hasil Eksekusi Medium1.txt

3.2.2 Medium2.txt

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Filename (in test Folder) : Medium2.txt

***** WORD SEARCH PUZZLE *****

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

ALBANIA
GERMANY
NORWAY
ANDORRA
GREECE
POLAND
ARMENIA
HUNGARY
PORTUGAL
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AUSTRIA
ICELAND
ROMANIA
AZERBAIJAN
IRELAND
RUSSIA
BELARUS
ITALY
SANMARINO
BELGIUM
KAZAKHSTAN
SERBIA
BOSNIAHERZEGOVINA
LATVIA
SLOVAKIA
BULGARIA
LIECHTENSTEIN
SLOVENIA
CROATIA
LITHUANIA
SPAIN
CYPRUS
LUXEMBOURG
SWEDEN
CZECHIA
MACEDONIA
SWITZERLAND
DENMARK
MALTA
TURKEY
ESTONIA
MOLDOVA
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MOLDOVA
UKRAINE
FINLAND
MONACO
UNITEDKINGDOM
FRANCE
MONTENEGRO
VATICANCITY
GEORGIA
NETHERLANDS

Time taken: 16252 microseconds
Number of letter Comparison : 3477 times

===== RESULT : =====

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

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Gambar 3.2.2 : Hasil Eksekusi Medium2.txt

3.2.3 Medium3.txt

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Filename (in test Folder) : Medium3.txt

***** WORD SEARCH PUZZLE *****

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

ALBANY
DOVER
OKLAHOMACITY
ANNAPOLIS
FRANKFORT
OLYMPIA
ATLANTA
HARRISBURG
PHOENIX
AUGUSTA
HARTFORD
PIERRE
AUSTIN
HELENA
PROVIDENCE
BATONROUGE
HONOLULU
RALEIGH
BISMARCK
INDIANAPOLIS
RICHMOND
BOISE
JACKSON
SACRAMENTO
BOSTON
JEFFERSONCITY
SAINTPAUL
CARSONCITY
JUNEAU
SALEM
CHARLESTON
LANSING
SALTLAKECITY
CHEYENNE
LINCOLN

SANTAFE
COLUMBIA
LITTLEROCK
SPRINGFIELD
COLUMBUS
MADISON
TALLAHASSEE
CONCORD
MONTGOMERY
TOPEKA
DENVER
MONTPELIER
TRENTON
DESMOINES
NASHVILLE

Time taken: 23994 microseconds
Number of letter Comparison : 4388 times
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===== RESULT : =====

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

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Gambar 3.2.3 : Hasil Eksekusi Medium3.txt

3.3 Big

3.3.1. Big1.txt

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***** WORD SEARCH PUZZLE *****

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

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AKIROSE
AME
ANYA
AQUA
AYAME
AZKI
BOTAN
CALLI
CERES
CHLOE
CHOCO
COCO
FLARE
FUBUKI
GURA
HAACHAMA
INA
IOFI
IROHA
IRYS
KANATA
KIARA
KORONE
KOYORI
KRONII
LAMY
LAPLUS
LUI
LUNA
MARINE
MATSURI
MEL
MIKO
MIO
MOONA
MUMEI
NENE
NOEL
OKAYU
OLLIE
PEKORA
POLKA
REINE
RISU
ROBOCO
RUSHIA
SANA
SHION
SORA
SUBARU
SUISEI
TOWA
WATAME

Time taken: 32000 microseconds
Number of letter Comparison : 9327 times

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

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Gambar 3.3.1 : Hasil Eksekusi Big1.txt

3.3.2. Big2.txt

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

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AGNESDIGITAL
AGNESTACHYON
AIRGROOVE
BIWAHAYAHIDE
CURRENCHAN
DAIWASCARLET
EISHINFLASH
ELCONDORPASA
FINEMOTION
FUJIKISEKI
GOLDCITY
GOLDSHIP
GRASSWONDER
HARURARA
HISHIAKEBONO
HISHIAMAZON
INESFUJIN
KAWAKAMIPRINCESS
KINGHALO
MANHATTANCAFE
MARUZENSKY
MATIKANETANNHAUSER
MATIKANEFUKUKITARU
MAYANOTOPGUN
MEISHODO
MEJIRODOBER
MEJIROMCQUEEN
MEJIROYAN
MIHONOBORON
NARITABRIAN
NARITATAISHIN
NICENATURE
OGURICAP
RICESHOWER
SAKURABAKUSHINO
SAKURACHIYONOO
SEIUNSKY
SILENCESUZUKA
SMARTFALCON
SPECIALWEEK
SUPERCREEK
SYMBOLIRUDOLF
TMOPERA
TAIKISHUTTLE
TAMAMOCROSS
TOKAITEIO
VODKA
WINNINGTICKET
YUKINOBIJIN
ZENNOROBROY

Time taken: 31992 microseconds
Number of letter Comparison : 6387 times


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===== RESULT : =====

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

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Gambar 3.3.2 : Hasil Eksekusi Big2.txt

3.3.3. Big3.txt

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Filename (in test Folder) : big3.txt

***** WORD SEARCH PUZZLE *****

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

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ACRUX
ADHARA
ALDEBARAN
ALNAIR
ALNILAM
ALTAIR
ANTARES
ARCTURUS
BELLATRIX
BETELGEUSE
CANOPUS
ELNATH
FOMALHAUT
HADAR
MIAPLACIDUS
MIMOSA
POLLUX
PROCYON
REGULUS
RIGEL
RIGILKENT
SHAULA
SIRIUS
SPICA
VEGA

Time taken: 15994 microseconds
Number of letter Comparison : 3404 times

===== RESULT : =====

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

```

Gambar 3.3.3 : Hasil Eksekusi Big3.txt

Bab IV

Alamat GitHub

<https://github.com/afrizasebastian/Tugas-STIMA/tree/main/Tucil1>

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. | √ | |