Laporan Tugas Kecil 1 IF2211 Strategi Algoritma

Penyelesaian *Word Search Puzzle* dengan Algoritma *Brute Force*

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PROGRAM STUDI TEKNIK INFORMATIKA

SEKOLAH TEKNIK ELEKTRO DAN INFORMATIKA

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I. Algoritma Brute Force

Langkah – langkah yang dilakukan program untuk mencari solusi dari *Word Search Puzzle* yang dimasukkan oleh user adalah sebagai berikut :

1. Membaca file dan memasukkan karakter-karakter dari puzzle word search ke dalam sebuah vektor 2D yang bernama puzzle, serta memasukkan kata-kata yang harus dicari ke dalam sebuah vektor 1D yang bernama wordList.
2. Dilakukan iterasi untuk setiap kata pada wordList. Pencarian dilakukan satu per satu kata hingga telah ditemukan seluruhnya.
3. Pencarian dimulai dengan mencocokkan huruf pertama dari kata dengan setiap karakter pada puzzle. Apabila ditemukan karakter yang cocok, selanjutnya akan dilakukan matching untuk huruf kedua dari kata dengan karakter-karakter tetangganya, yaitu berbagai arah lainnya. Jika cocok, maka pencarian akan dilakukan terus untuk huruf berikutnya sesuai dengan arah yang telah sesuai sebelumnya. Jika ternyata ditemukan huruf dan karakter pada puzzle sudah tidak cocok, maka akan dilanjutkan pencarian dari awal untuk huruf pertama pada puzzle.
4. Apabila telah ditemukan seluruh kata yang ingin dicari, solusi akan dicetak ke layar user. Akan ditampilkan juga total waktu program (proses print tidak termasuk) serta total perbandingan huruf.

II. Source Code

```
// Tucil 1 Strategi Algoritma
// Lyora Felicya - 13520073

#include <bits/stdc++.h>
#include <string>
#include <time.h>
using namespace std;

vector<string> wordList;
vector<vector<char>> puzzle;
int comparison = 0;
time_t startP, endP;
double timePrint;

void loadFile()
{
    int count = 0;

    string fileName;
    cout << "Enter name of the file (without .txt): ";
    cout << " " ;
    cin >> fileName;

    ifstream wordSearchFile;
    wordSearchFile.open(fileName + ".txt");
```

```
    bool puzzleEnd = false;
    string line;

    //Memisahkan string
    while(getline(wordSearchFile, line))
    {
        if (line == "")
        {
            puzzleEnd = true;
        }

        //Menyimpan karakter ke dalam vector 2D puzzle
        if (!puzzleEnd)
        {
            int i,j;
            char str[line.length()+1];
            strcpy(str, line.c_str());
            char *ptr = strtok(str," ");

            puzzle.push_back(vector<char>());
            while(ptr != NULL)
            {
                puzzle[count].push_back(*ptr);
                ptr = strtok(NULL," ");
            }
            count++;
        }

        //Masuk ke list kata yang ingin dicari
        else if(puzzleEnd && line != "")
        {
            string word = line;
            wordList.push_back(word);
        }
    }

    wordSearchFile.close();
}

//CEK KIRI KE KANAN
bool searchRight(string wordToFind, int startI, int startJ)
{
    int i,j,k;

    //Inisiasi vektor 2D Result yang elemennya '-'
    vector<vector<char>> result(puzzle.size(),
vector<char>(puzzle[0].size(), '-'));
```

```
    bool found = false;
    bool match = true;

    for(k = 0; k < wordToFind.length(); k++)
    {
        //Memeriksa boundary
        if (startI < 0 || startI >= puzzle.size() || startJ < 0 ||
startJ >= puzzle[0].size())
        {
            match = false;
            break;
        }
        if(wordToFind[k] == puzzle[startI][startJ])
        {
            result[startI][startJ] = puzzle[startI][startJ];
            startJ += 1;
        }
        else
        {
            match = false;
            break;
        }
        comparison++;
    }

    //Kata ditemukan, print solusi
    if(match)
    {
        time(&startP);
        cout << wordToFind << " found " << endl;
        for(i = 0; i < result.size(); i++)
        {
            for(j = 0;  j < result[i].size(); j++)
            {
                cout << result[i][j] << " ";
            }
            cout << endl;
        }
        found = true;
        cout << "\n";
        time(&endP);
        timePrint = double(endP - startP);
    }
    return found;
}

//CEK KANAN KE KIRI
bool searchLeft(string wordToFind, int startI, int startJ)
{
```

```
    int i,j,k;

    //Inisiasi vektor 2D Result yang elemennya '-'
    vector<vector<char>> result(puzzle.size(),
vector<char>(puzzle[0].size(), '-'));

    bool found = false;
    bool match = true;

    for(k = 0; k < wordToFind.length(); k++)
    {
        //Memeriksa boundary
        if (startI < 0 || startI >= puzzle.size() || startJ < 0 ||
startJ >= puzzle[0].size())
        {
            match = false;
            break;
        }
        if(wordToFind[k] == puzzle[startI][startJ])
        {
            result[startI][startJ] = puzzle[startI][startJ];
            startJ -= 1;
        }
        else
        {
            match = false;
            break;
        }
        comparison++;
    }

    //Kata ditemukan, print solusi
    if(match)
    {
        time(&startP);
        cout << wordToFind << " found " << endl;
        for(i = 0; i < result.size(); i++)
        {
            for(j = 0;  j < result[i].size(); j++)
            {
                cout << result[i][j] << " ";
            }
            cout << endl;
        }
        found = true;
        cout << "\n";
        time(&endP);
        timePrint = double(endP - startP);
```

```
    }
    return found;
}

//CEK ATAS KE BAWAH
bool searchDown(string wordToFind, int startI, int startJ)
{
    int i,j,k;

    //Inisiasi vektor 2D Result yang elemennya '-'
    vector<vector<char>> result(puzzle.size(),
vector<char>(puzzle[0].size(), '-'));

    bool found = false;
    bool match = true;

    for(k = 0; k < wordToFind.length(); k++)
    {
        //Memeriksa boundary
        if (startI < 0 || startI >= puzzle.size() || startJ < 0 ||
startJ >= puzzle[0].size())
        {
            match = false;
            break;
        }
        if(wordToFind[k] == puzzle[startI][startJ])
        {
            result[startI][startJ] = puzzle[startI][startJ];
            startI += 1;
        }
        else
        {
            match = false;
            break;
        }
        comparison++;
    }


    //Kata ditemukan, print solusi
    if(match)
    {
        time(&startP);
        cout << wordToFind << " found " << endl;
        for(i = 0; i < result.size(); i++)
        {
            for(j = 0;  j < result[i].size(); j++)
            {
```

```
                cout << result[i][j] << " ";
            }
            cout << endl;
        }
        found = true;
        cout << "\n";
        time(&endP);
        timePrint = double(endP - startP);
    }
    return found;
}

//CEK BAWAH KE ATAS
bool searchUp(string wordToFind, int startI, int startJ)
{
    int i,j,k;

    //Inisiasi vektor 2D Result yang elemennya '-'
    vector<vector<char>> result(puzzle.size(),
vector<char>(puzzle[0].size(), '-'));

    bool found = false;
    bool match = true;

    for(k = 0; k < wordToFind.length(); k++)
    {
        //Memeriksa boundary
        if (startI < 0 || startI >= puzzle.size() || startJ < 0 ||
startJ >= puzzle[0].size())
        {
            match = false;
            break;
        }
        if(wordToFind[k] == puzzle[startI][startJ])
        {
            result[startI][startJ] = puzzle[startI][startJ];
            startI -= 1;
        }
        else
        {
            match = false;
            break;
        }
        comparison++;
    }

    //Kata ditemukan, print solusi
    if(match)
```

```
    {
        time(&startP);
        cout << wordToFind << " found " << endl;
        for(i = 0; i < result.size(); i++)
        {
            for(j = 0;  j < result[i].size(); j++)
            {
                cout << result[i][j] << " ";
            }
            cout << endl;
        }
        found = true;
        cout << "\n";
        time(&endP);
        timePrint = double(endP - startP);
    }
    return found;
}

//CEK DIAGONAL KIRI KE KANAN ATAS
bool searchD_UpperRight(string wordToFind, int startI, int startJ)
{
    int i,j,k;

    //Inisiasi vektor 2D Result yang elemennya '-'
    vector<vector<char>> result(puzzle.size(),
vector<char>(puzzle[0].size(), '-'));

    bool found = false;
    bool match = true;

    for(k = 0; k < wordToFind.length(); k++)
    {
        //Memeriksa boundary
        if (startI < 0 || startI >= puzzle.size() || startJ < 0 ||
startJ >= puzzle[0].size())
        {
            match = false;
            break;
        }
        if(wordToFind[k] == puzzle[startI][startJ])
        {
            result[startI][startJ] = puzzle[startI][startJ];
            startI -= 1;
            startJ += 1;
        }
        else
        {
```

```
            match = false;
            break;
        }
        comparison++;
    }

    //Kata ditemukan, print solusi
    if(match)
    {
        time(&startP);
        cout << wordToFind << " found " << endl;
        for(i = 0; i < result.size(); i++)
        {
            for(j = 0;  j < result[i].size(); j++)
            {
                cout << result[i][j] << " ";
            }
            cout << endl;
        }
        found = true;
        cout << "\n";
        time(&endP);
        timePrint = double(endP - startP);
    }
    return found;
}

//CEK DIAGONAL KIRI KE KANAN BAWAH
bool searchD_DownRight(string wordToFind, int startI, int startJ)
{
    int i,j,k;

    //Inisiasi vektor 2D Result yang elemennya '-'
    vector<vector<char>> result(puzzle.size(),
vector<char>(puzzle[0].size(), '-'));

    bool found = false;
    bool match = true;

    for(k = 0; k < wordToFind.length(); k++)
    {
        //Memeriksa boundary
        if (startI < 0 || startI >= puzzle.size() || startJ < 0 ||
startJ >= puzzle[0].size())
        {
            match = false;
            break;
        }
```

```
        if(wordToFind[k] == puzzle[startI][startJ])
        {
            result[startI][startJ] = puzzle[startI][startJ];
            startI += 1;
            startJ += 1;
        }
        else
        {
            match = false;
            break;
        }
        comparison++;
    }

    //Kata ditemukan, print solusi
    if(match)
    {
        time(&startP);
        cout << wordToFind << " found " << endl;
        for(i = 0; i < result.size(); i++)
        {
            for(j = 0;  j < result[i].size(); j++)
            {
                cout << result[i][j] << " ";
            }
            cout << endl;
        }
        found = true;
        cout << "\n";
        time(&endP);
        timePrint = double(endP - startP);
    }
    return found;
}

//CEK DIAGONAL KANAN KE KIRI ATAS
bool searchD_UpperLeft(string wordToFind, int startI, int startJ)
{
    int i,j,k;

    //Inisiasi vektor 2D Result yang elemennya '-'
    vector<vector<char>> result(puzzle.size(),
vector<char>(puzzle[0].size(), '-'));

    bool found = false;
    bool match = true;

    for(k = 0; k < wordToFind.length(); k++)
```

```
    {
        //Memeriksa boundary
        if (startI < 0 || startI >= puzzle.size() || startJ < 0 ||
startJ >= puzzle[0].size())
        {
            match = false;
            break;
        }
        if(wordToFind[k] == puzzle[startI][startJ])
        {
            result[startI][startJ] = puzzle[startI][startJ];
            startI -= 1;
            startJ -= 1;
        }
        else
        {
            match = false;
            break;
        }
        comparison++;
    }

    //Kata ditemukan, print solusi
    if(match)
    {
        time(&startP);
        cout << wordToFind << " found " << endl;
        for(i = 0; i < result.size(); i++)
        {
            for(j = 0;  j < result[i].size(); j++)
            {
                cout << result[i][j] << " ";
            }
            cout << endl;
        }
        found = true;
        cout << "\n";
        time(&endP);
        timePrint = double(endP - startP);
    }
    return found;
}

//CEK DIAGONAL KANAN KE KIRI BAWAH
bool searchD_DownLeft(string wordToFind, int startI, int startJ)
{
    int i,j,k;
```

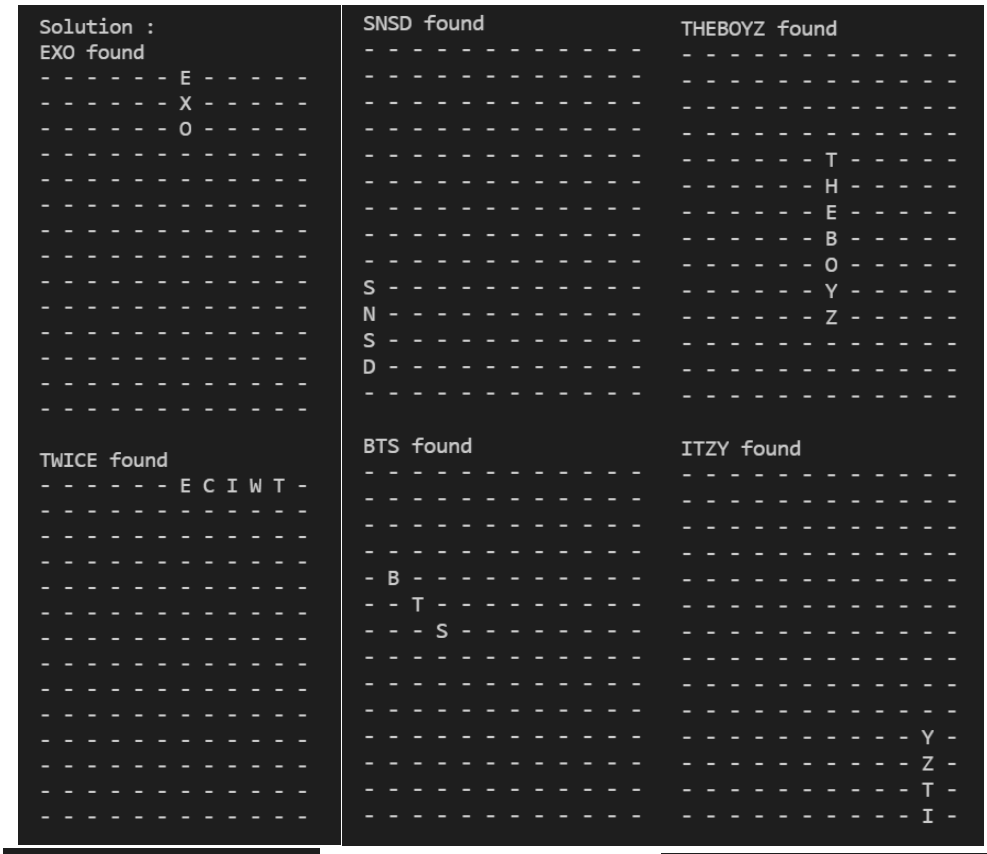
```
    //Inisiasi vektor 2D Result yang elemennya '-'
    vector<vector<char>> result(puzzle.size(),
vector<char>(puzzle[0].size(), '-'));

    bool found = false;
    bool match = true;

    for(k = 0; k < wordToFind.length(); k++)
    {
        //Memeriksa boundary
        if (startI < 0 || startI >= puzzle.size() || startJ < 0 ||
startJ >= puzzle[0].size())
        {
            match = false;
            break;
        }
        if(wordToFind[k] == puzzle[startI][startJ])
        {
            result[startI][startJ] = puzzle[startI][startJ];
            startI -= 1;
            startJ += 1;
        }
        else
        {
            match = false;
            break;
        }
        comparison++;
    }

    //Kata ditemukan, print solusi
    if(match)
    {
        time(&startP);
        cout << wordToFind << " found " << endl;
        for(i = 0; i < result.size(); i++)
        {
            for(j = 0;  j < result[i].size(); j++)
            {
                cout << result[i][j] << " ";
            }
            cout << endl;
        }
        found = true;
        cout << "\n";
        time(&endP);
        timePrint = double(endP - startP);
```

```
    }
    return found;
}

void searchWord()
{
    int N, i, j;
    bool found = false;

    //Iterasi pencarian untuk setiap kata
    for(N = 0; N < wordList.size(); N++)
    {
        //Menelusuri setiap huruf di dalam Puzzle
        for(i = 0; i < puzzle.size(); i++)
        {
            for(j = 0; j < puzzle[i].size(); j++)
            {
                found = searchUp(wordList[N], i, j);
                if (found)
                    continue;
                found = searchD_UpperRight(wordList[N], i, j);
                if (found)
                    continue;
                found = searchRight(wordList[N], i, j);
                if (found)
                    continue;
                found = searchD_DownRight(wordList[N], i, j);
                if (found)
                    continue;
                found = searchDown(wordList[N], i, j);
                if (found)
                    continue;
                found = searchD_DownLeft(wordList[N], i, j);
                if (found)
                    continue;
                found = searchLeft(wordList[N], i, j);
                if (found)
                    continue;
                found = searchD_UpperLeft(wordList[N], i, j);
                if (found)
                    continue;
            }
        }
    }
}

int main()
{
    time_t start,end;
```

```
    loadFile();
    int i,j;
    cout << "Your Word Search Puzzle : " << endl;
    for(i = 0; i < puzzle.size(); i++)
    {
        for(j = 0;  j < puzzle[i].size(); j++)
        {
            cout << puzzle[i][j] << " ";
        }
        cout << endl;
    }
    cout << "\n";
    cout << "Solution : " << endl;

    time(&start);
    searchWord();
    time(&end);

    timePrint = endP - startP;
    double time_taken = double(end - start) - timePrint;

    cout << "Time taken by program is : " << fixed
         << time_taken << setprecision(5);
    cout << " sec " << endl;

    cout << "Total comparison : ";
    cout << comparison;

}
```

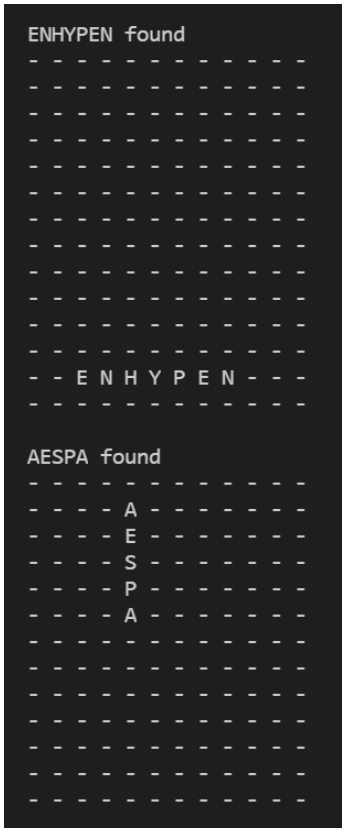
III. Screenshot Hasil Program

1. Ukuran Small
   a. 14x12


Solution :
EXO found
TWICE found
SNSD found
BTS found
THEBOYZ found
ITZY found


SEVENTEEN found
BIGBANG found


APINK found
TREASURE found


ENHYPEN found
AESPA found

```
Time taken by program is : 0.000000 sec
Total comparison : 1015
```

b. 15x15

```
Enter name of the file (without .txt):  small15x15
Your Word Search Puzzle :
P Q G T T X E S P I D O L T O
Q E K G I I S K O N U S Z U Y
Z M N E L P I J X S S T J J D
Q Q E S M B X N J K P F G G M
H H B H I U K U B E U T U N H
E Y N H I L C L N N S E N I U
V L S T A B I L O O S O T C E
L Q I L W R T K O T U E I N T
F E R H H T O Y A I P R N U Z
D F A H U N O B U E A R G R A
S G G F B A I D N L H E N E S
E R G L B L F A H N G T Z P Q
N F N A O P I F N I N K O F J
P I E N X L J D O E E E L B S
Z A P I D F O S A K P H T J Q
```

```
Solution :
BUKU found
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- - - - - - - - - - - - - - -
- - - - - - - - - - - - - - -
- - - - - - - - - - - - - - -
- - - - - U K U B - - - - - -
- - - - - - - - - - - - - - -
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PENA found
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- - - - - - - A - - - - - - -
- - - - - - - - N - - - - - -
- - - - - - - - - E - - - - -
- - - - - - - - - - P - - - -
```

```
PENSIL found
P - - - - - - - - - - - - - -
- E - - - - - - - - - - - - -
- - N - - - - - - - - - - - -
- - - S - - - - - - - - - - -
- - - - I - - - - - - - - - -
- - - - - L - - - - - - - - -
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PENGHAPUS found
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- - - - - - - - - - - - - - -
- - - - - - - - - - - - - - -
- - - - - - - - - - S - - - -
- - - - - - - - - - U - - - -
- - - - - - - - - - P - - - -
- - - - - - - - - - A - - - -
- - - - - - - - - - H - - - -
- - - - - - - - - - G - - - -
- - - - - - - - - - N - - - -
- - - - - - - - - - E - - - -
- - - - - - - - - - P - - - -
```

```
PENGGARIS found
- - - - - - - - - - - - - - -
- - - - - - - - - - - - - - -
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- - I - - - - - - - - - - - -
- - R - - - - - - - - - - - -
- - A - - - - - - - - - - - -
- - G - - - - - - - - - - - -
- - G - - - - - - - - - - - -
- - N - - - - - - - - - - - -
- - E - - - - - - - - - - - -
- - P - - - - - - - - - - - -

SPIDOL found
- - - - - - - S P I D O L - -
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```
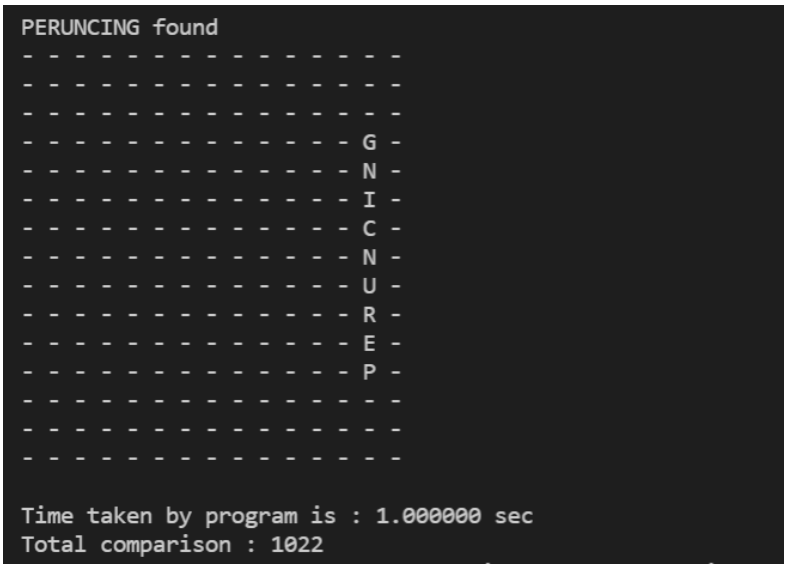


TIPX found
GUNTING found


STABILO found
HEKTER found


PERUNCING found
Time taken by program is : 1.000000 sec
Total comparison : 1022

c. 18x16

```
Enter name of the file (without .txt):  small18x16
Your Word Search Puzzle :
B R A Q I L S S H Y N Y E U O F
Y E S B V T U B E I K Y B K I J
W C A G Y R B D J U D K Q L X D
G N G V U Y O G U X A O U U G F
F A I A P I S C E S R L X Q T B
K C T M X H Y F X S B T E J S R
J J T Y G G R S Q C Z L U O F Y
J G A B D A N I N O U C W M S W
K Y R D D F N E R R V A Q U H Y
S J I Z D H A K O P G C L P R F
E H U J G N Q D C I R X B M M R
W U S U B A U C I O K V J U U D
Z W G Q S X A E R Z O G R W R D
M O E T E A R Y P D G E O Y W Z
S A G P I X I Z A B R M J L D A
M B J D R D U J C W I I O B W N
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Solution :
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TAURUS found
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CANCER found
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VIRGO found
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- - - - - - - - - - - R - - - - -
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LIBRA found
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L I B R A - - - - - - - - - - - -
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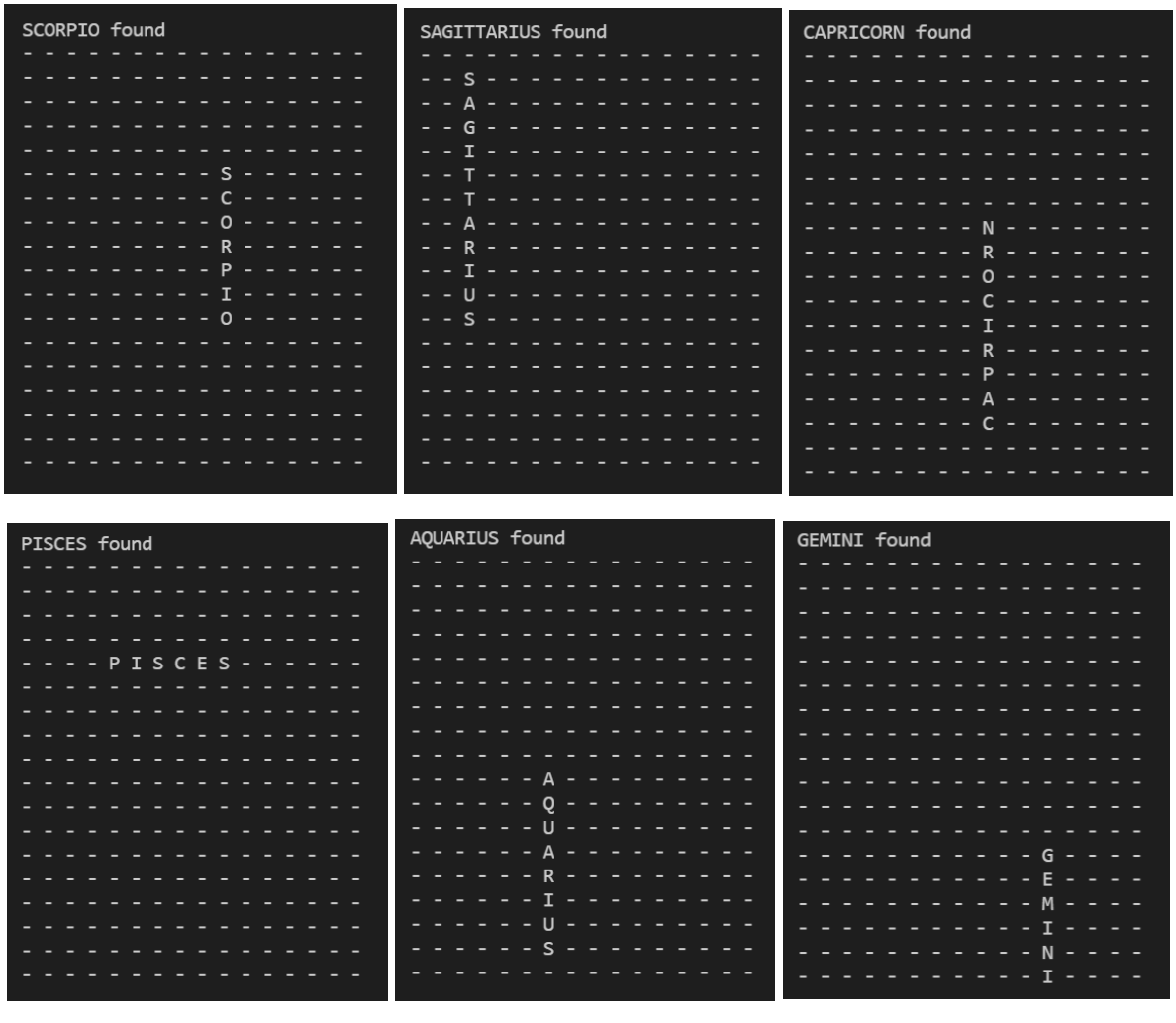
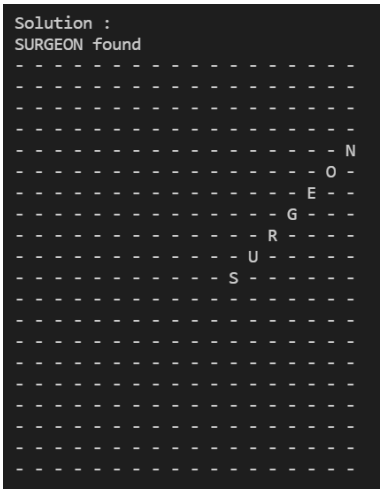
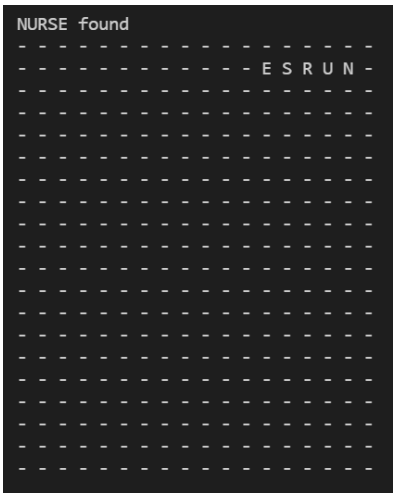
Z

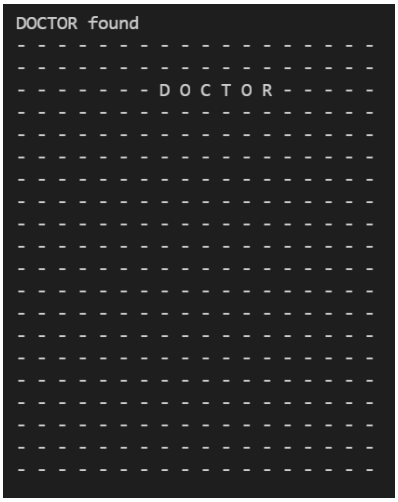


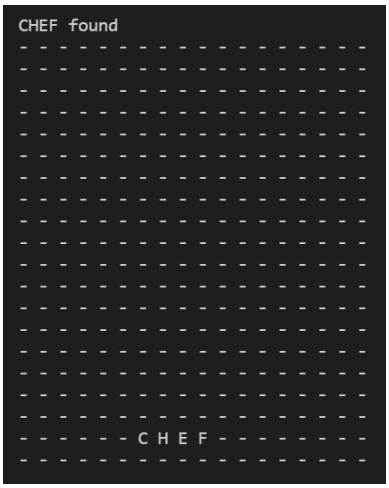

```
Time taken by program is : 1.000000 sec
Total comparison : 1085
```

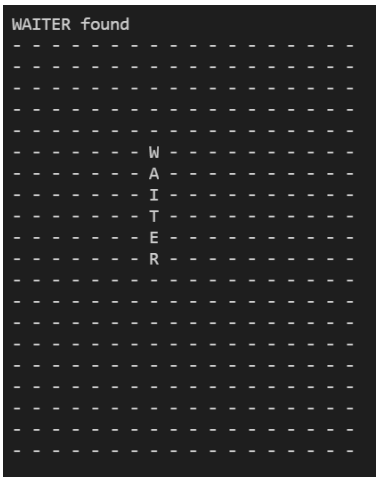
2. Ukuran Medium
   a. 20x18

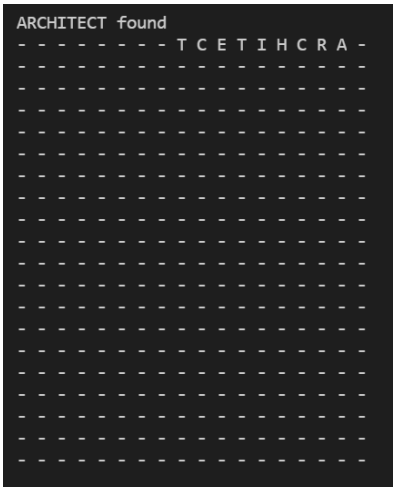


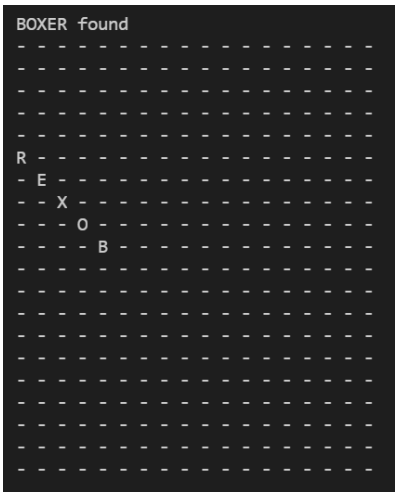





CHEF found
C H E F


WAITER found
W
A
I
T
E
R


ARCHITECT found
T C E T I H C R A


BOXER found
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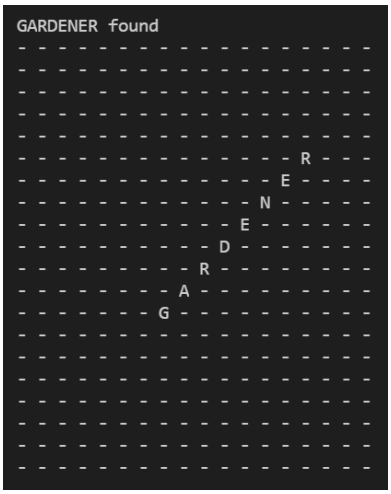
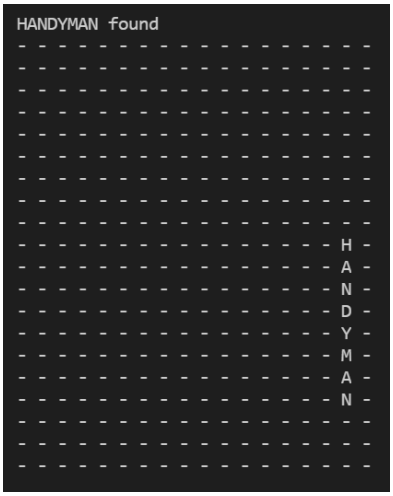

GARDENER found
R
E
N
E
D
R
A
G


HANDYMAN found
H
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Y
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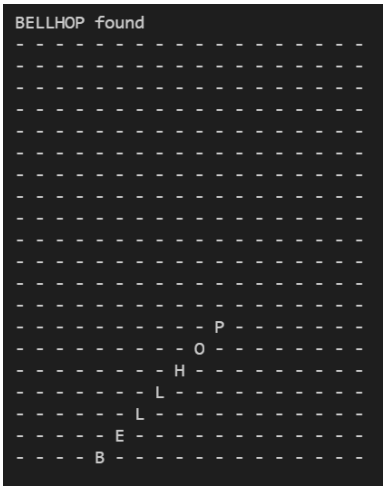
N


BELLHOP found
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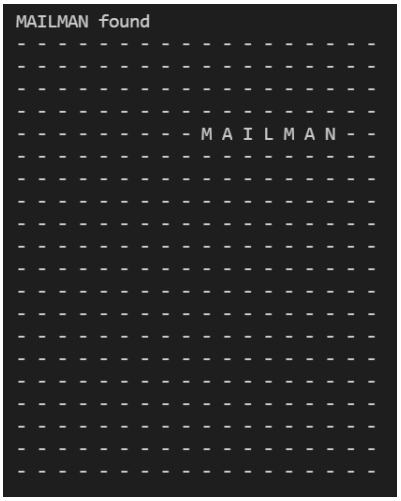
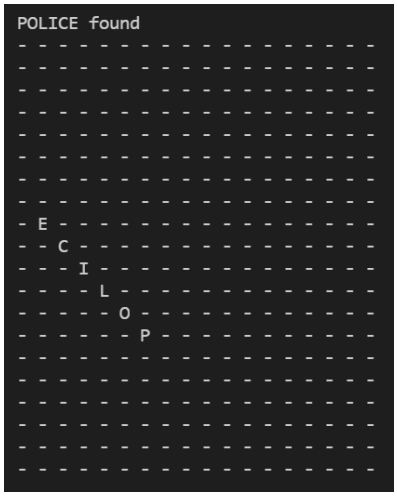

MAILMAN found
M A I L M A N


POLICE found
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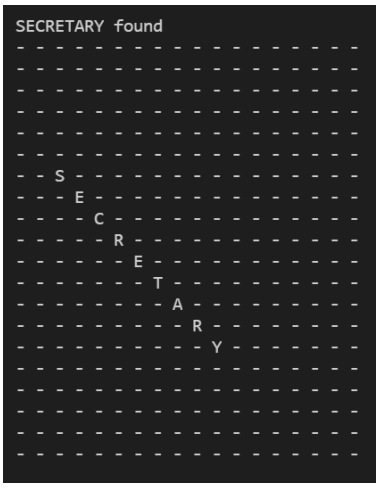

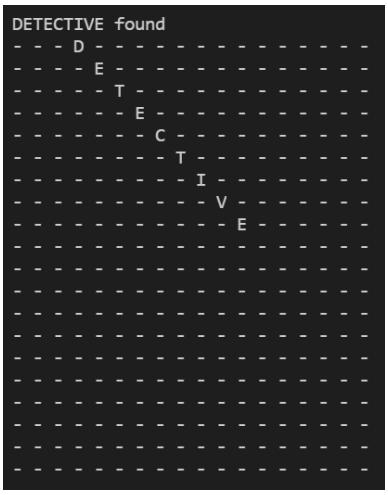

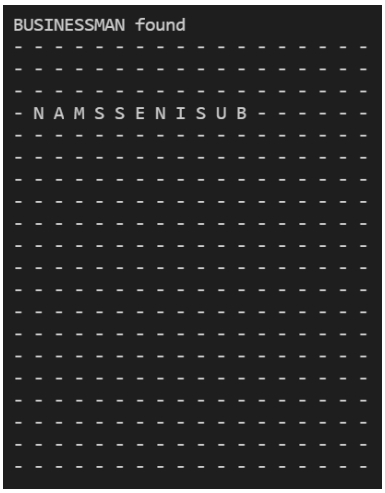

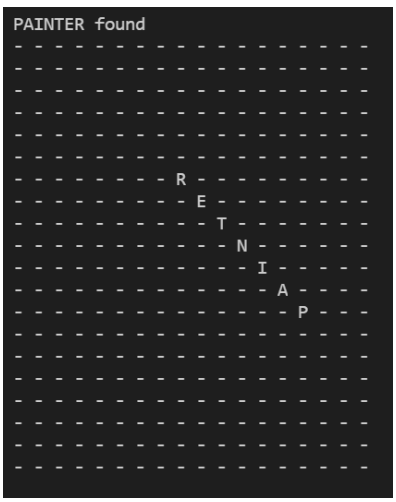

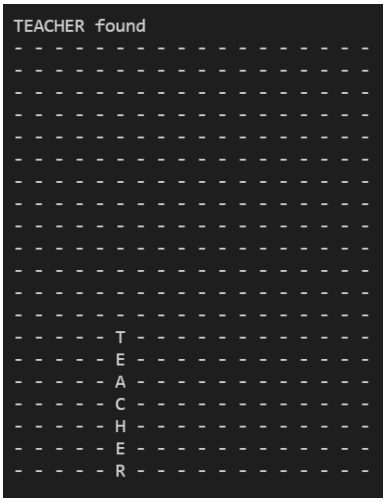

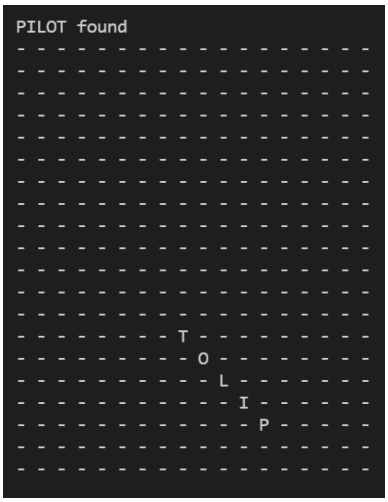

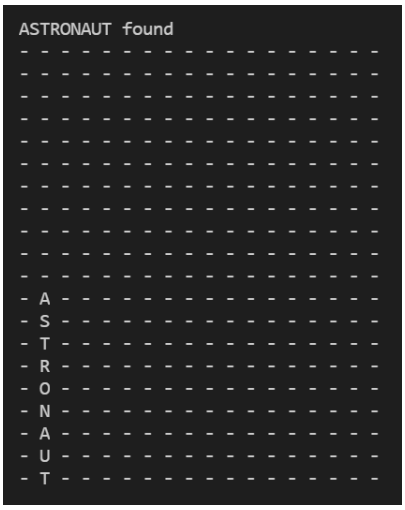

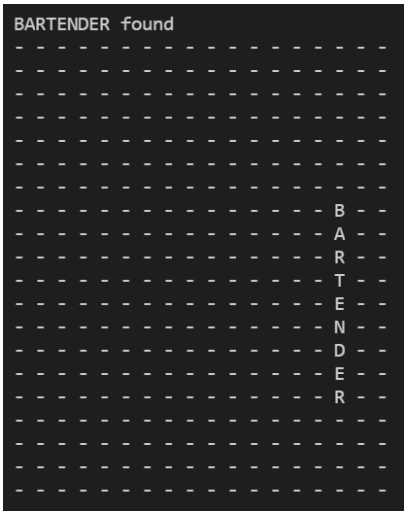


```
Time taken by program is : 2.000000 sec
Total comparison : 2585
```

b. 20x20

```
Enter name of the file (without .txt):  medium20x20
Your Word Search Puzzle :
Q F F Z U L A I V P J Q E A M B B G L I
L P P L E O P B E S A Q G J M N P K I Y
B Y D N J D T N F B T P G U A V A P M E
X F M B A V O C A D O O A X K Z W Q E H
K F R C O C O N U T N C G Y X O G N A M
H I S V F Z M D P O E M F K A P H H C O
Z E W X K O O E L S T R A W B E R R Y Q
X Y K I W G A E U D P I N E A P P L E L
S R R P L R M X W L P T K K V P U O N D
M H A R C R P A S V U B X M E B N H D K
K X H F E P F Y E T A N A R G E M O P P
N T Y T E H C R I J T Y N O F G M D X P
M H A A E M C D R K R B R Z Y Q S H G E
W W C J Y K A C R R Y A Y X Z X M Z R T
N H F E F N K S E D N H Z F I B F L A N
A Y U I A W H B B G T O C I R P A S P G
E U H N G O P V E T Z O E Y W I J L E G
M K A X R S T I U R F R A T S W U H Y B
I B L U A A O S L Z N X P R W M N D R P
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KIWI found

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Solution :
AVOCADO found

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BANANA found

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- B - - - - - - - - - - - - - - - - -
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MANGO found

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STRAWBERRY found

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- - - - - - - - - S T R A W B E R R Y -
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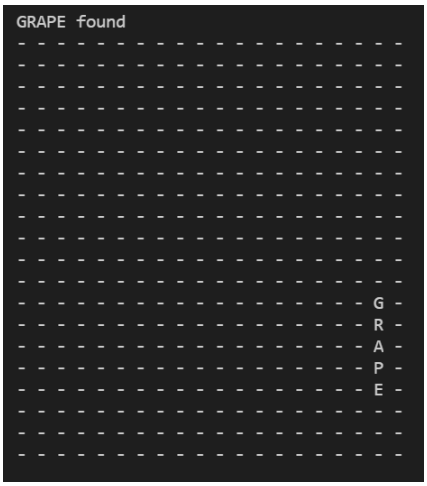

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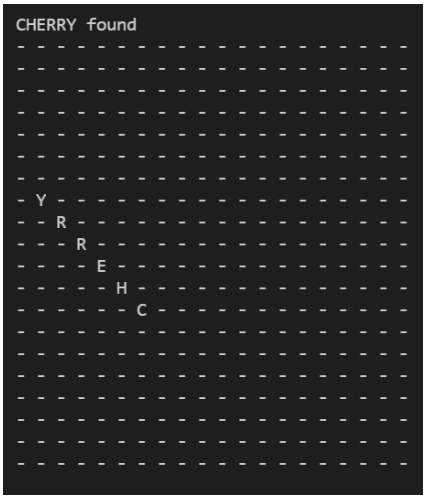

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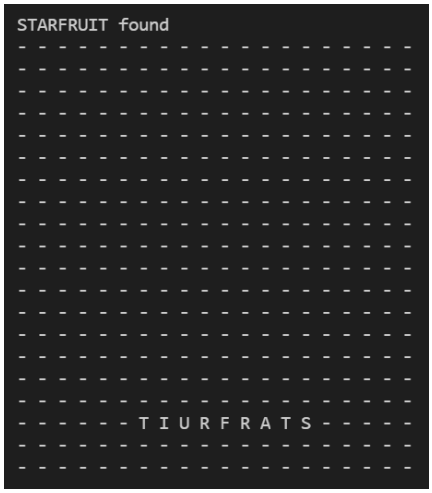

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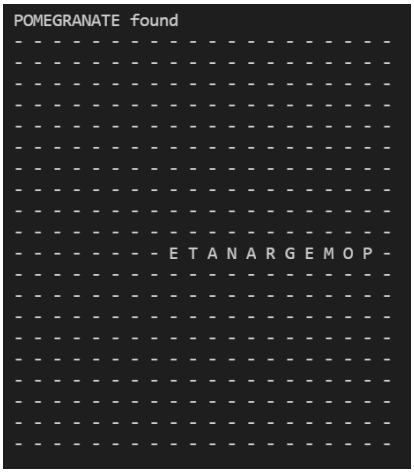

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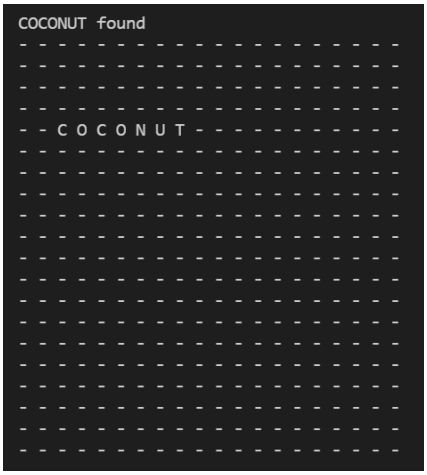

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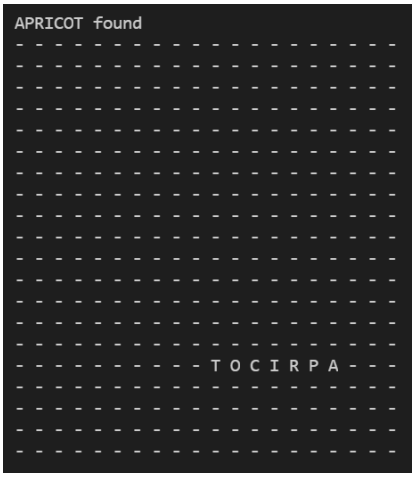

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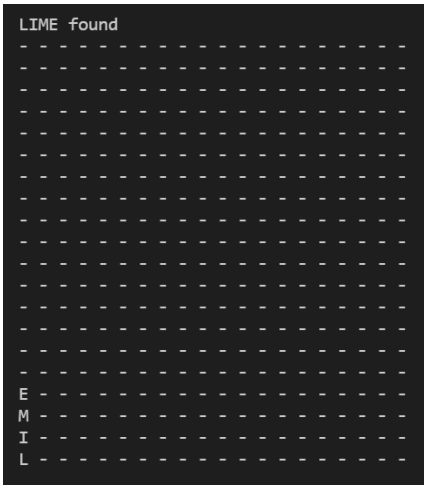

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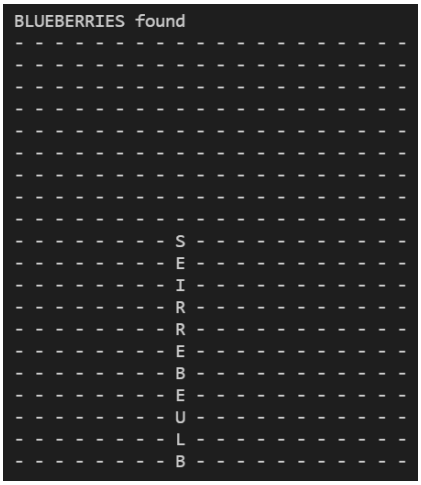

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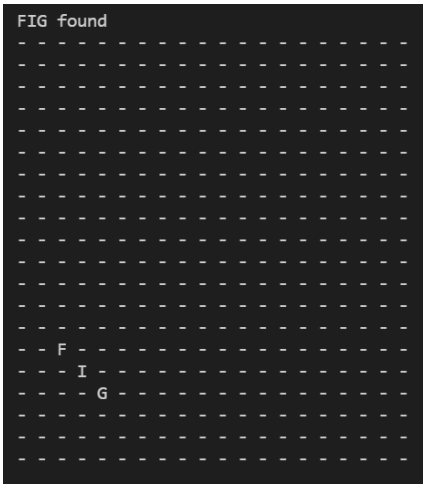

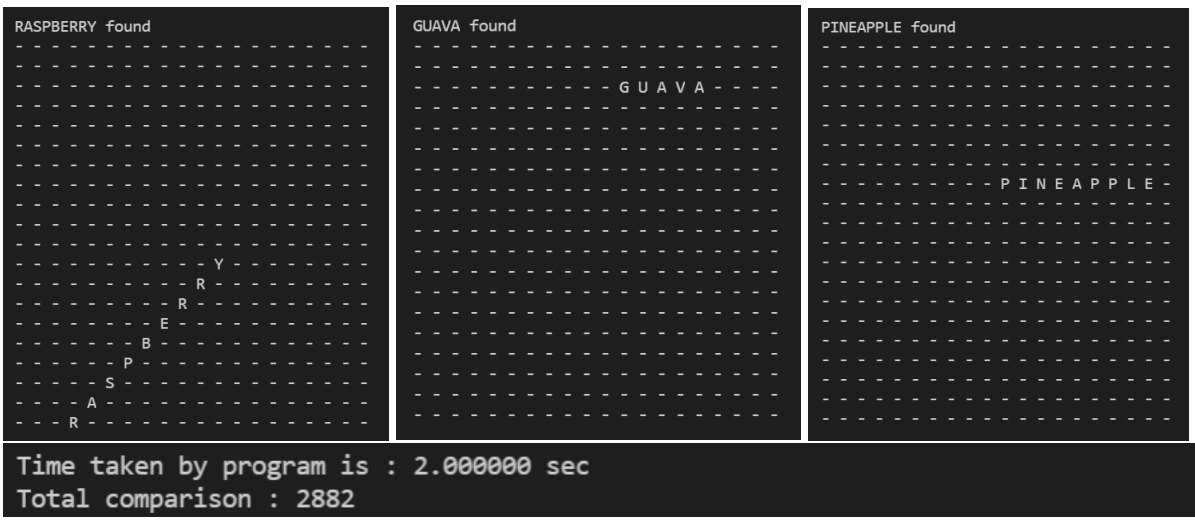

c. 22x22

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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
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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
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A U J A G N K I X Y L T A E I L C S I O N N
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Z A K U E S Y E A M E A N J Y G I N A A G A
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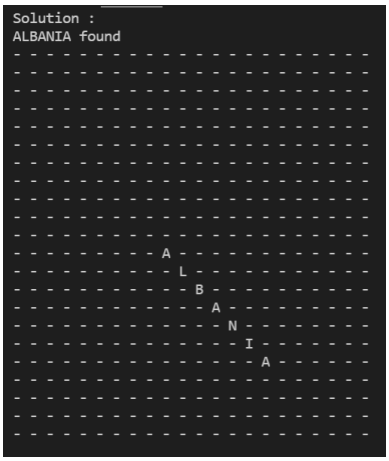
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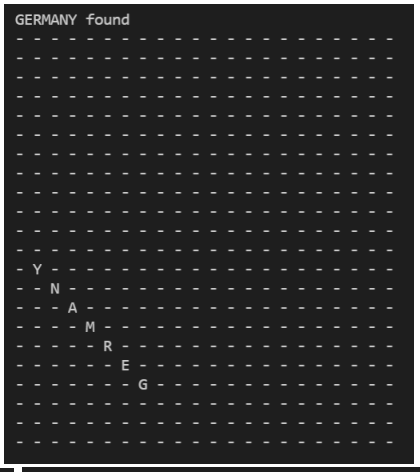
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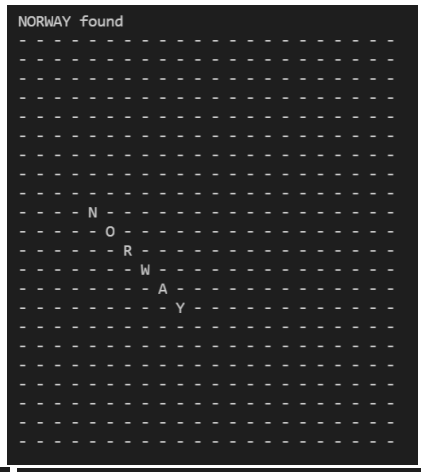
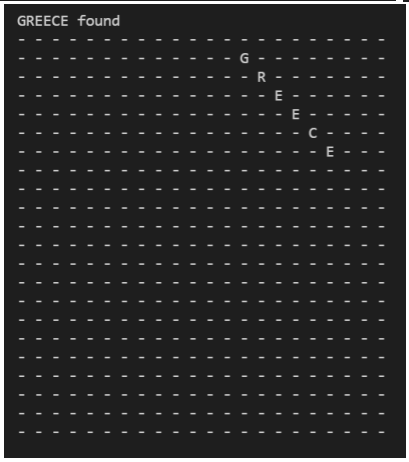

NORWAY found


ANDORRA found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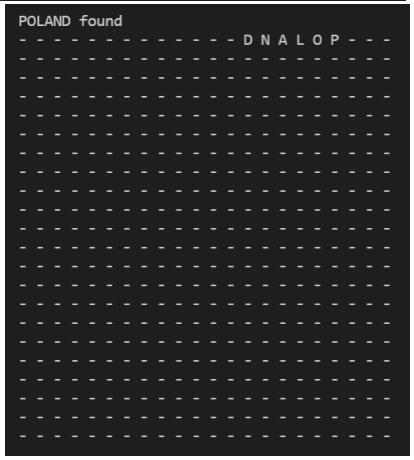
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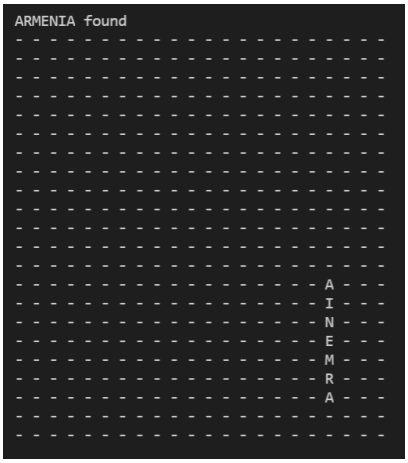
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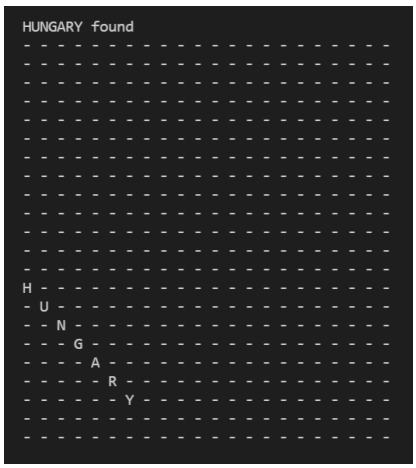
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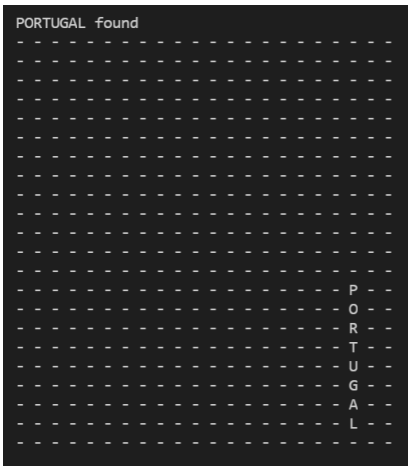
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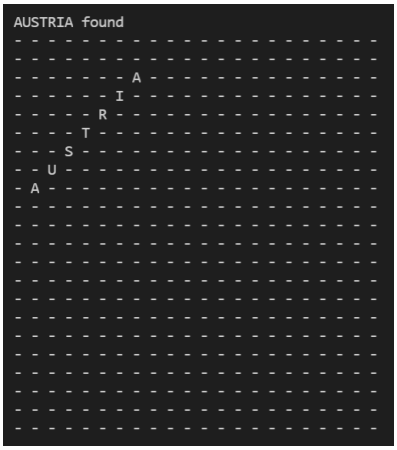
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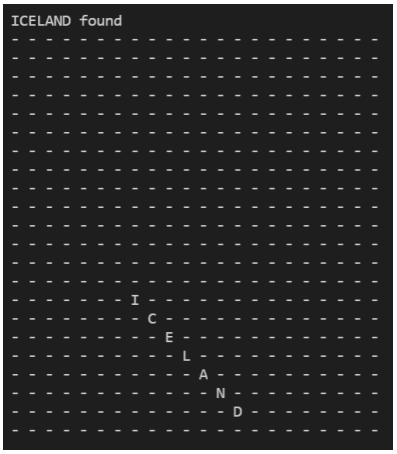
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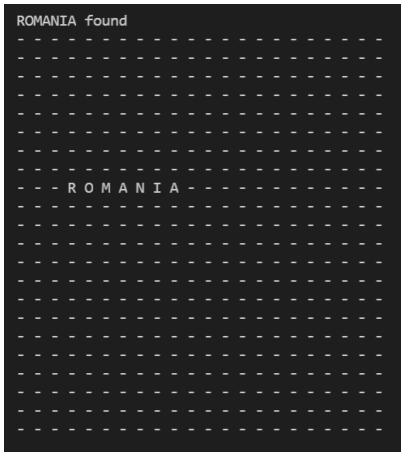
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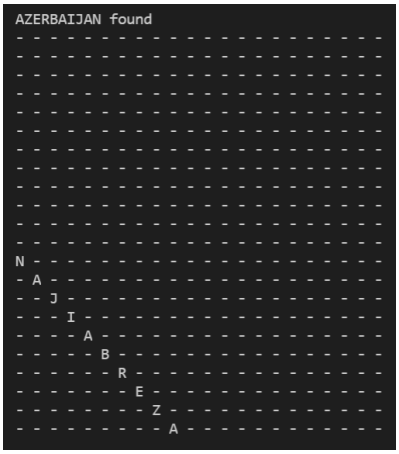
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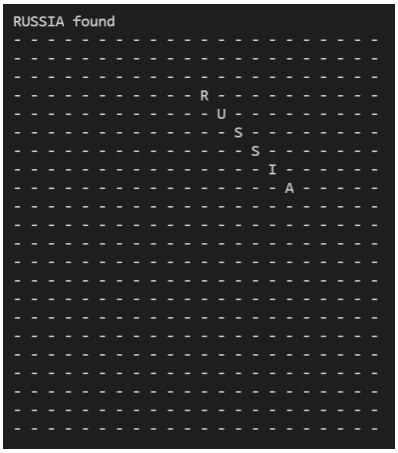
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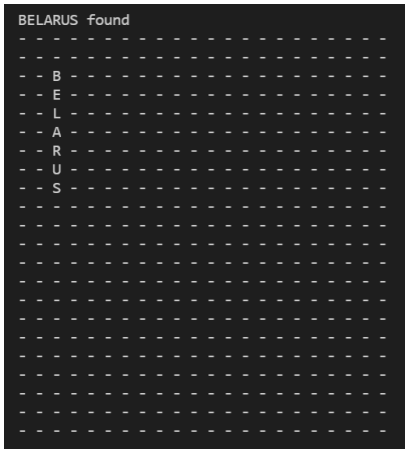
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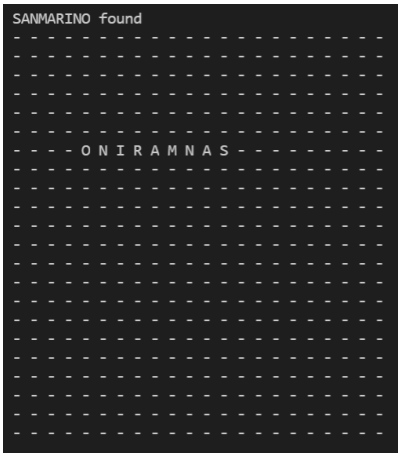
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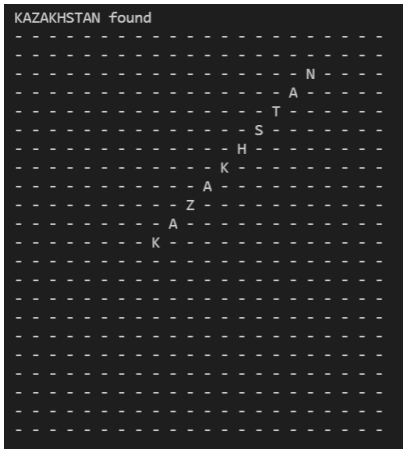
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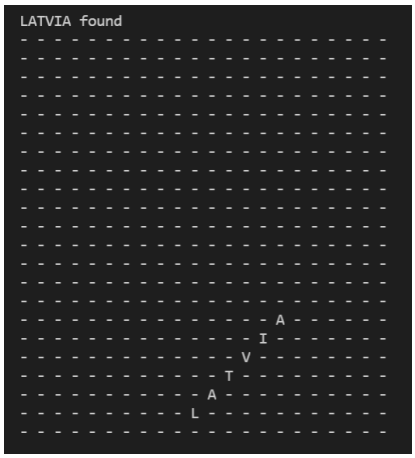
BOSNIAHERZEGOVINA found
BOSNIAHERZEGOVINA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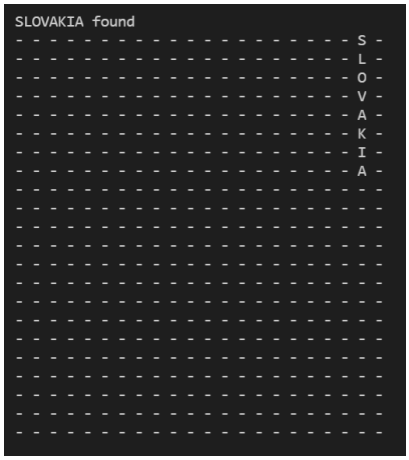
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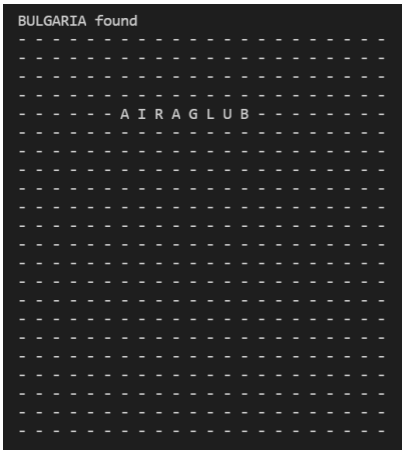
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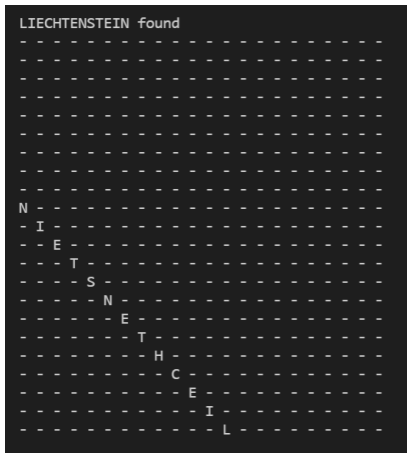
LIECHTENSTEIN found
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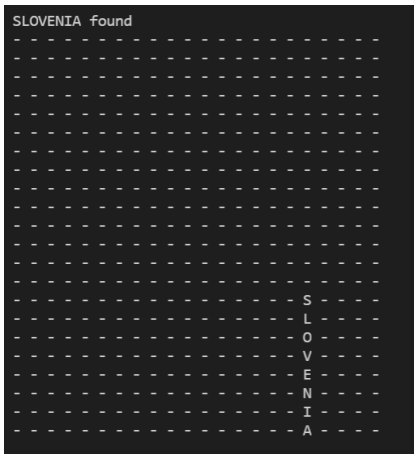
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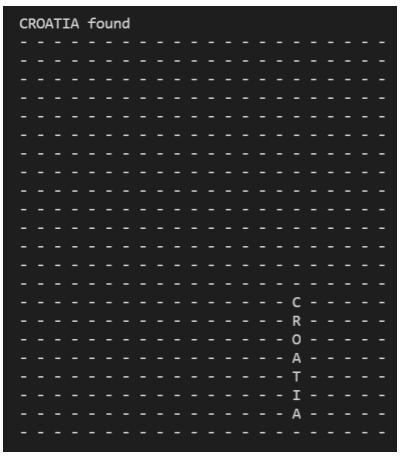
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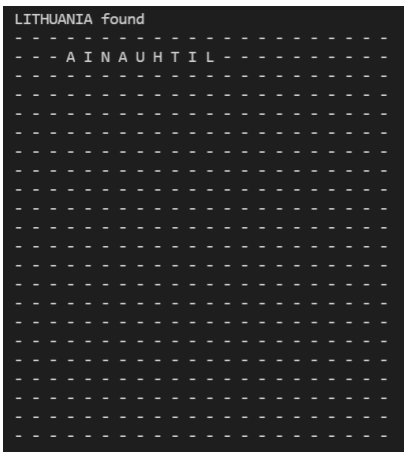
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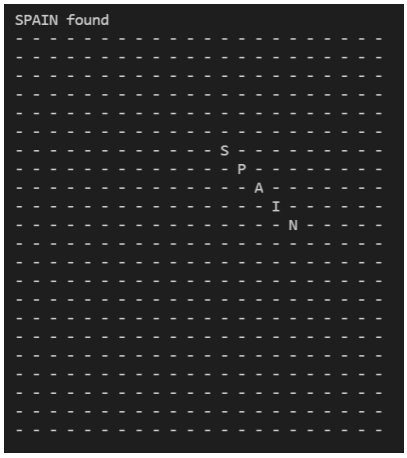
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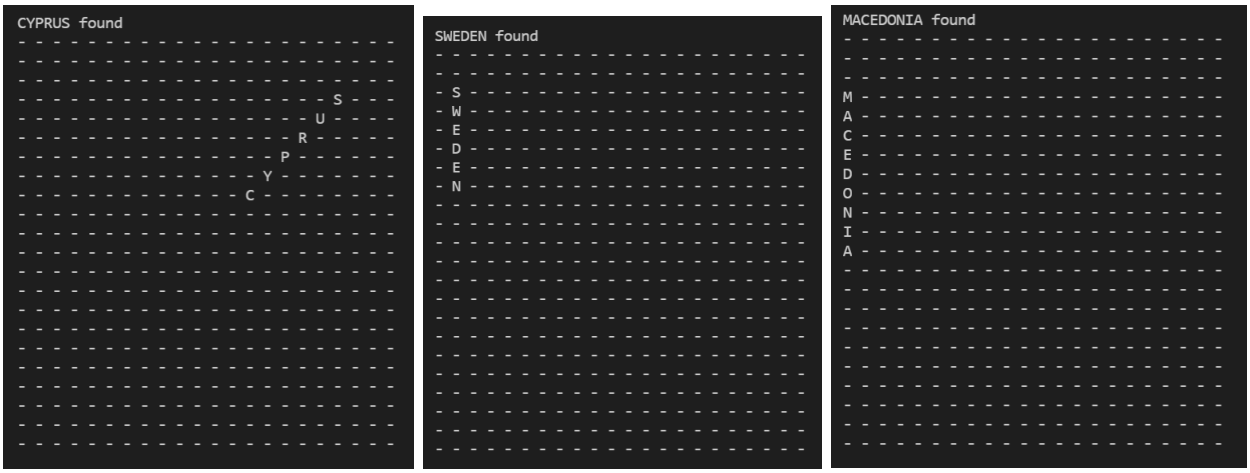


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3. Ukuran Large
   a. 32x30

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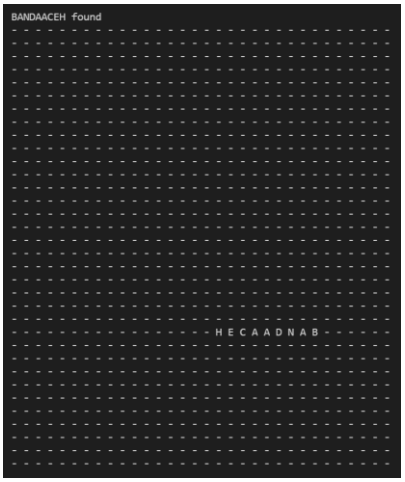
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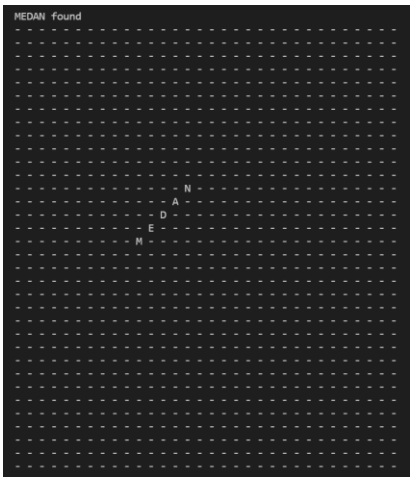
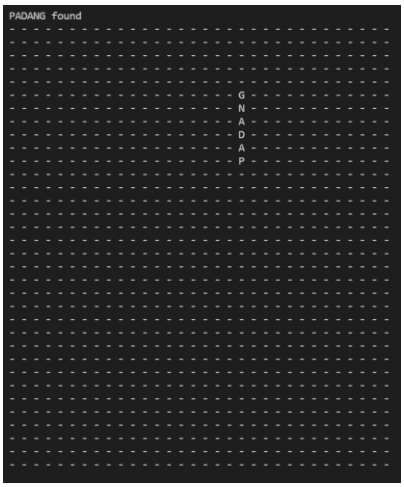
HECAADNAB


MEDAN found
N
A
D
E
M


PADANG found
G
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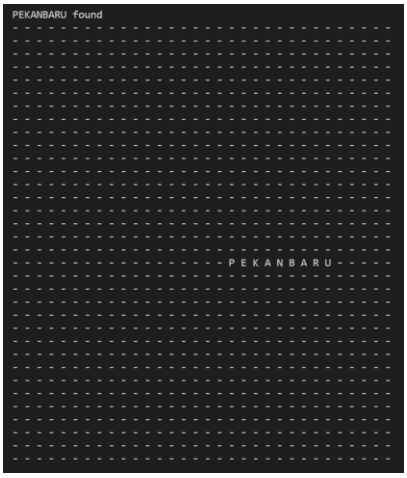
D
A
P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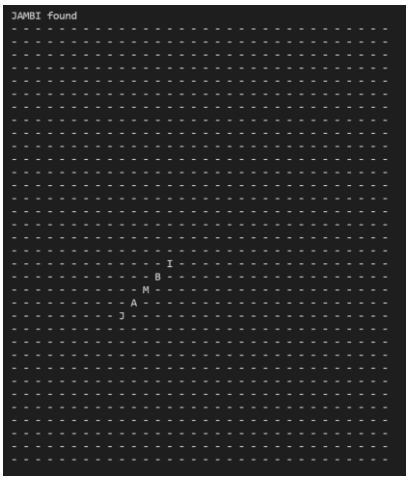
PEKANBARU


JAMBI found
I
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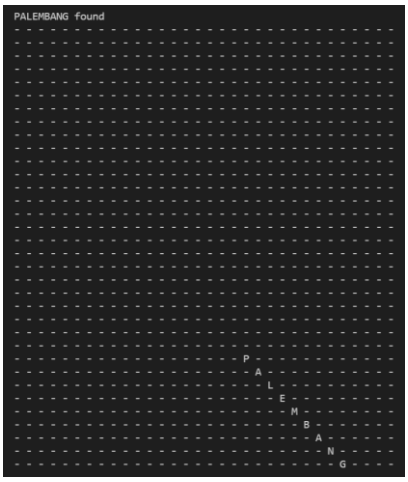
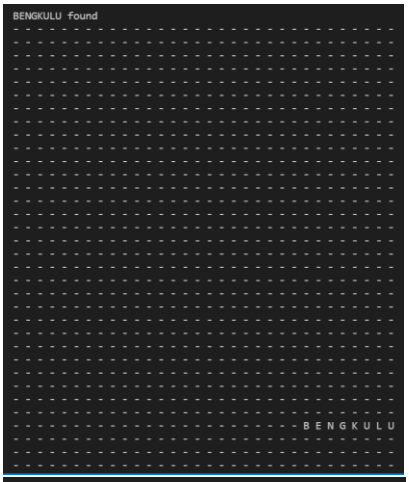
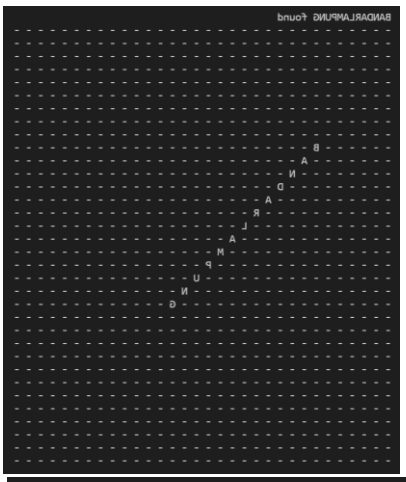
M
A
J


PALEMBANG found
P
A
L
E
M
B
A
N
G


BENGKULU found
B E N G K U L U


found
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M
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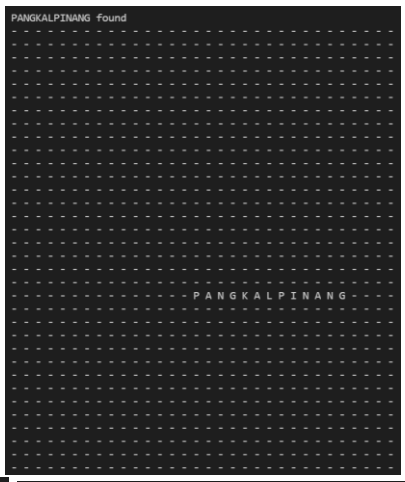
U
И
D


PANGKALPINANG found
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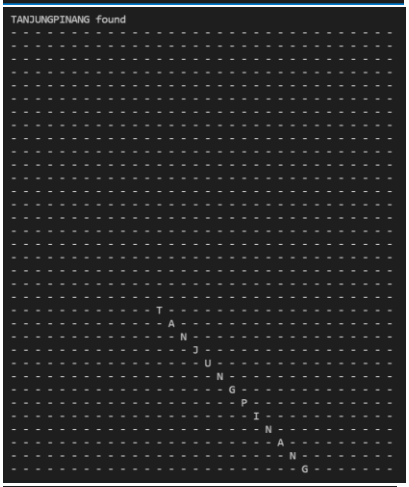
TANJUNGPINANG found
T
A
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J
U
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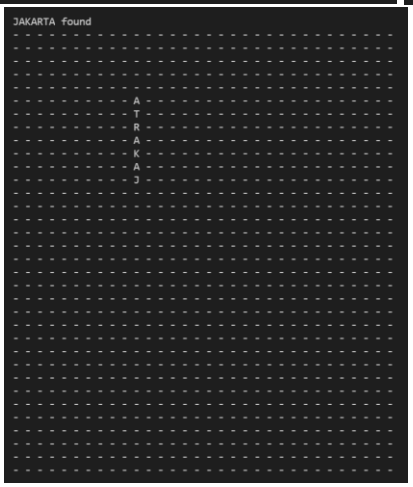
A
N
G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A
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R
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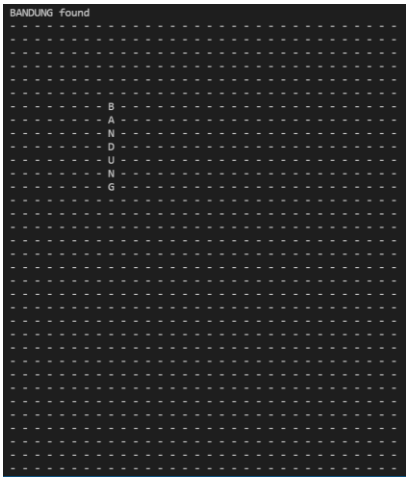
J


BANDUNG found
B
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D
U
N
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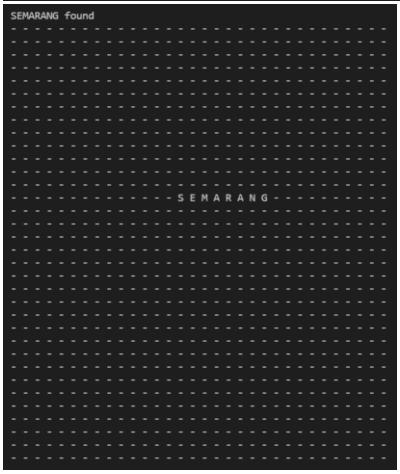
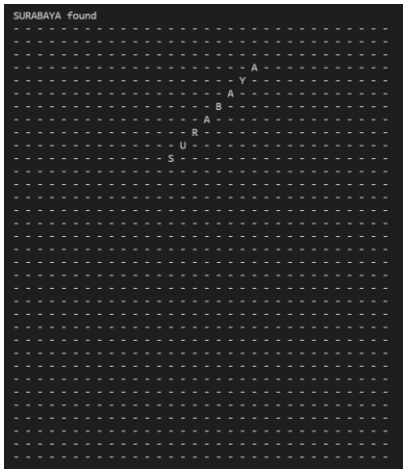

SEMARANG found
S E M A R A N G


SURABAYA found
A
Y
A
B
A
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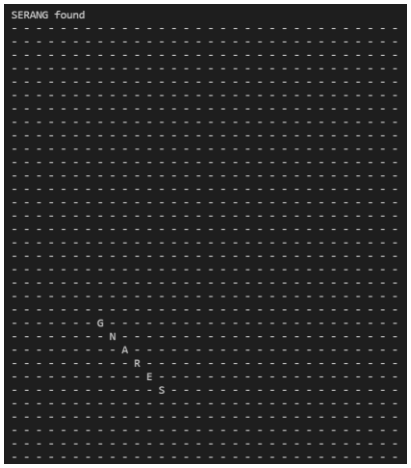
U
S


SERANG found
G
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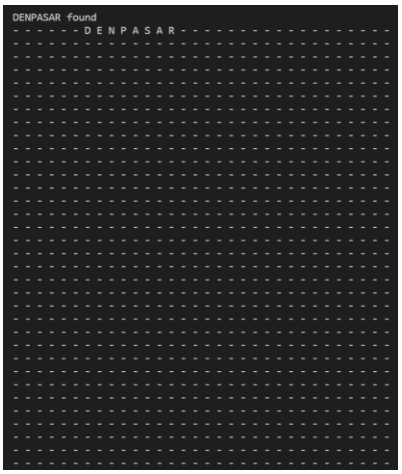
R
E
S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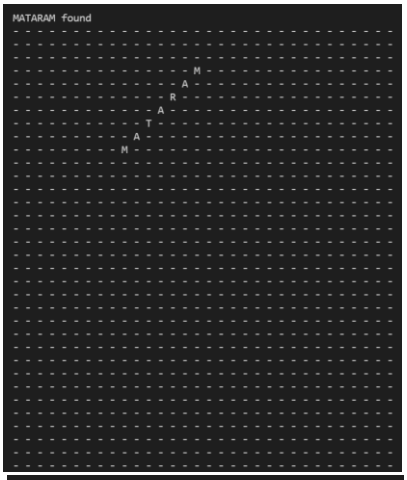
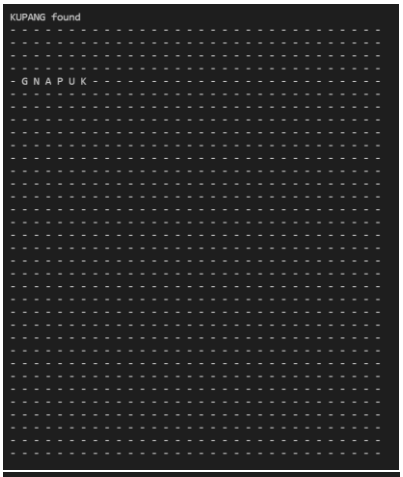
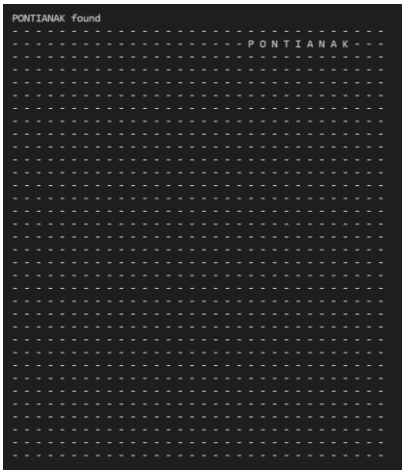
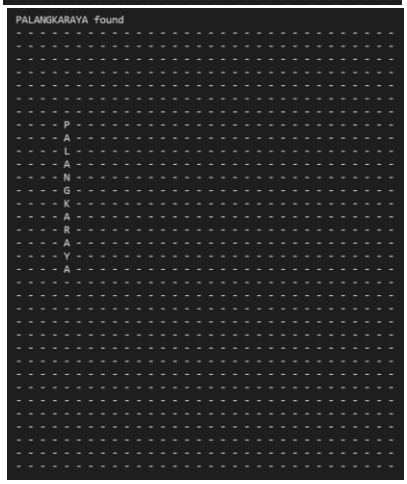
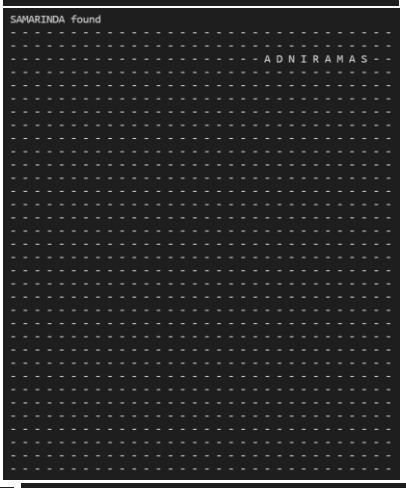
DENPASAR


MATARAM found
MARAM


KUPANG found
GNAPUK


PONTIANAK found
PONTIANAK


PALANGKARAYA found
PALANGKARAYA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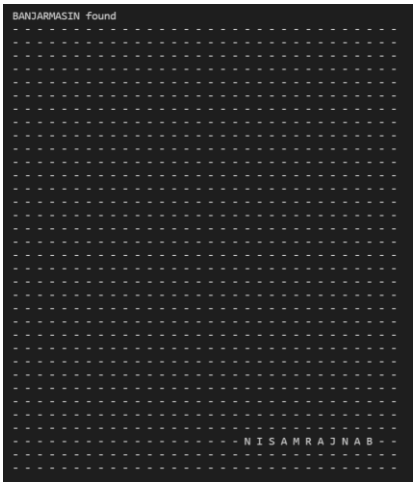
ADNIRAMAS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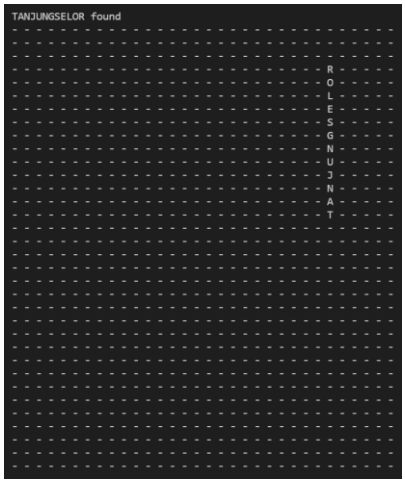
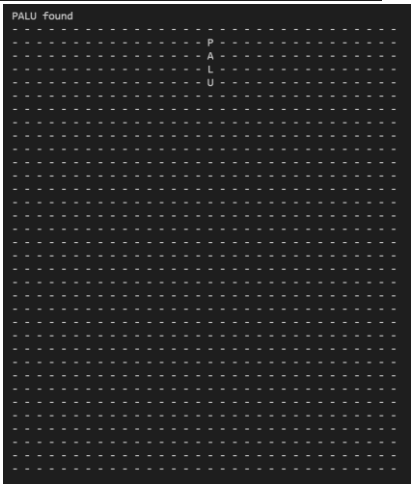

TANJUNGSELOR found
ROLESGNUJNAT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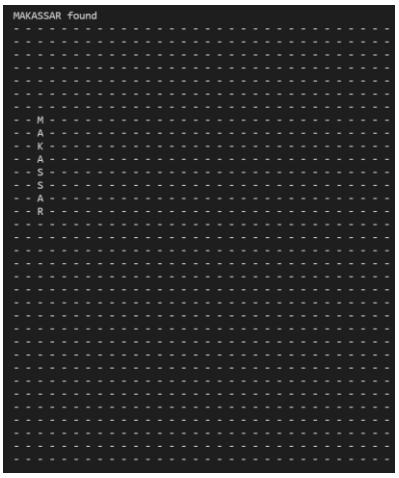

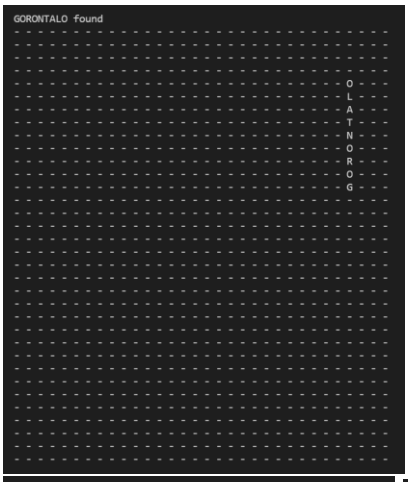

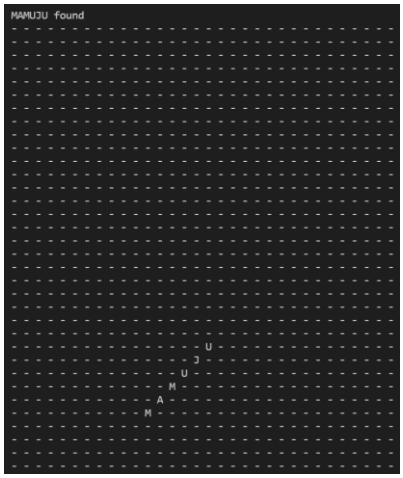

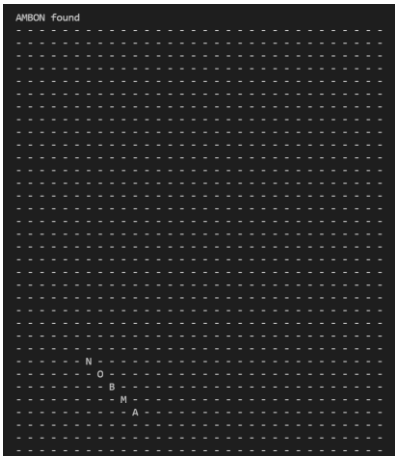

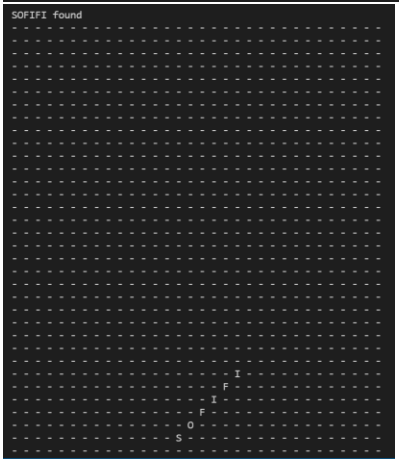

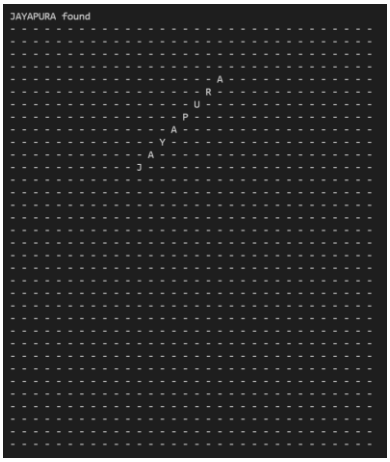


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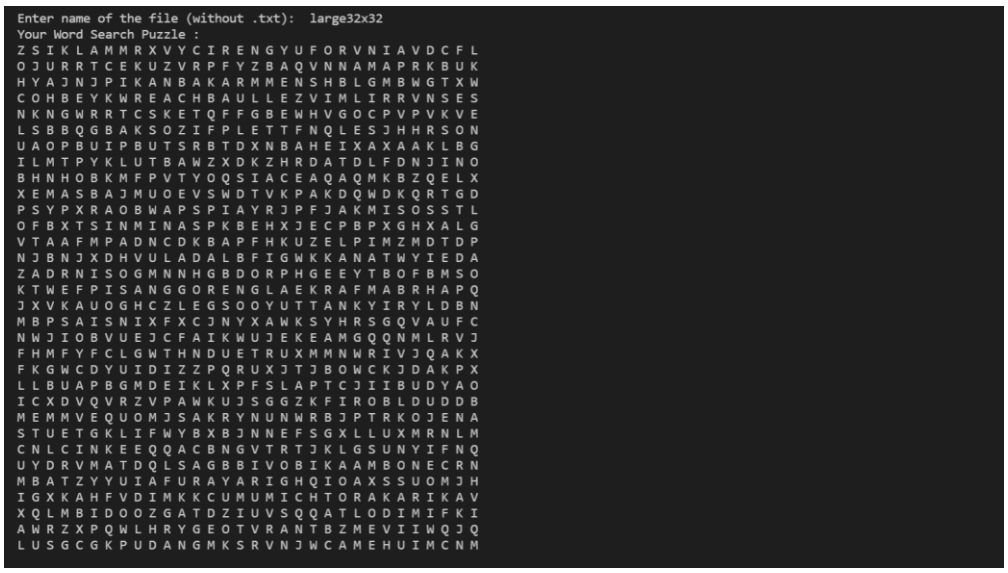
b. 32x32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Your Word Search Puzzle :
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O J U R R T C E K U Z V R P F Y Z B A Q V N N A M A P R K B U K
H Y A J N J P I K A N B A K A R M M E N S H B L G M B W G T X W
C O H B E Y K W R E A C H B A U L L E Z V I M L I R R V N S E S
N K N G W R R T C S K E T Q F F G B E W H V G O C P V P V K V E
L S B B Q G B A K S O Z I F P L E T T F N Q L E S J H H R S O N
U A O P B U I P B U T S R B T D X N B A H E I X A X A A K L B G
I L M T P Y K L U T B A W Z X D K Z H R D A T D L F D N J I N O
B H N H O B K M F P V T Y O Q S I A C E A Q A Q M K B Z Q E L X
X E M A S B A J M U O E V S W D T V K P A K D Q W D K Q R T G D
P S Y P X R A O B W A P S P I A Y R J P F J A K M I S O S S T L
O F B X T S I N M I N A S P K B E H X J E C P B P X G H X A L G
V T A A F M P A D N C D K B A P F H K U Z E L P I M Z M D T D P
N J B N J X D H V U L A D A L B F I G W K K A N A T W Y I E D A
Z A D R N I S O G M N N H G B D O R P H G E E Y T B O F B M S O
K T W E F P I S A N G G O R E N G L A E K R A F M A B R H A P Q
J X V K A U O G H C Z L E G S O O Y U T T A N K Y I R Y L D B N
M B P S A I S N I X F X C J N Y X A W K S Y H R S G Q V A U F C
N W J I O B V U E J C F A I K W U J E K E A M G Q Q N M L R V J
F H M F Y F C L G W T H N D U E T R U X M M N W R I V J Q A K X
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L L B U A P B G M D E I K L X P F S L A P T C J I I B U D Y A O
I C X D V Q V R Z V P A W K U J S G G Z K F I R O B L D U D D B
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S T U E T G K L I F W Y B X B J N N E F S G X L L U X M R N L M
C N L C I N K E E Q Q A C B N G V T R T J K L G S U N Y I F N Q
U Y D R V M A T D Q L S A G B B I V O B I K A A M B O N E C R N
M B A T Z Y Y U I A F U R A Y A R I G H Q I O A X S S U O M J H
I G X K A H F V D I M K K C U M U M I C H T O R A K A R I K A V
X Q L M B I D O O Z G A T D Z I U V S Q Q A T L O D I M I F K I
A W R Z X P Q W L H R Y G E O T V R A N T B Z M E V I I W Q J Q
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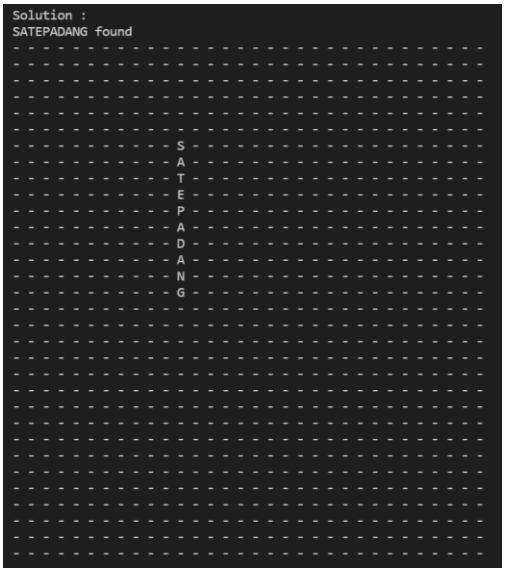
Solution :
SATEPADANG found
S
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T
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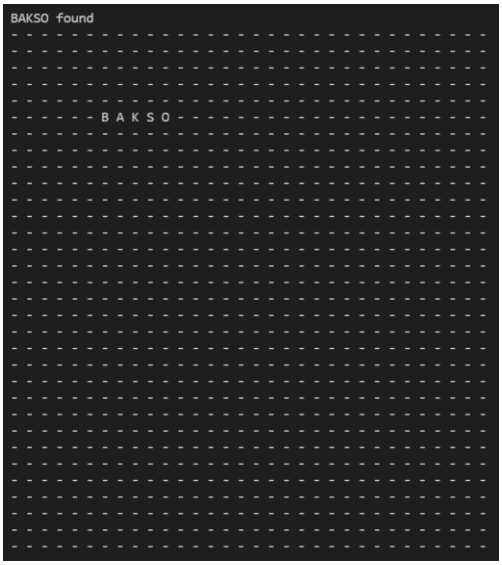
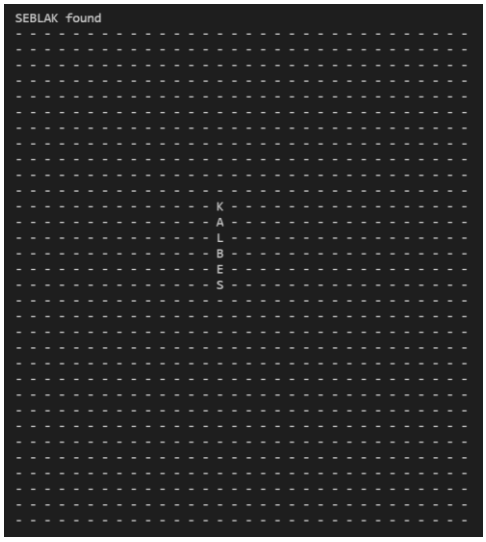
G


BAKSO found
B A K S O


SEBLAK found
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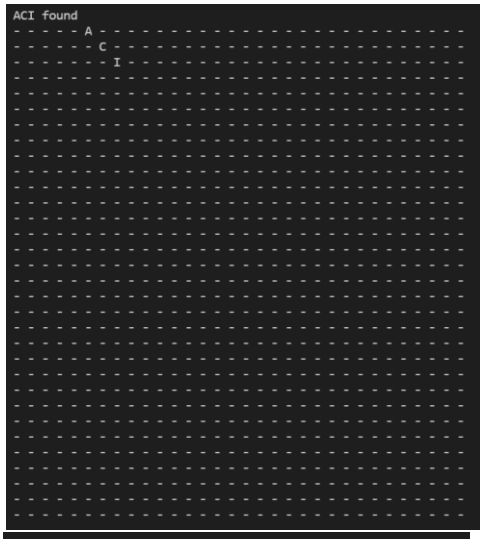
ACI found
A
C
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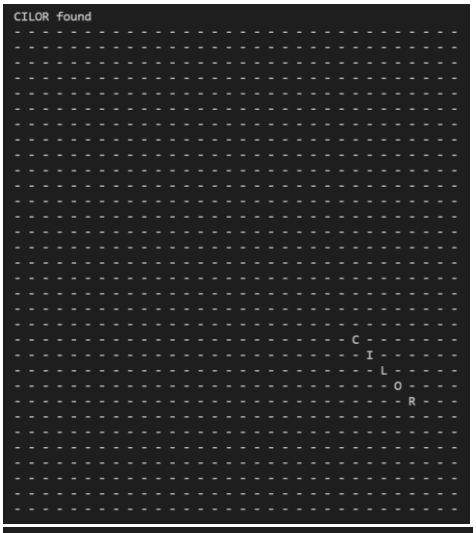
CILOR found
C
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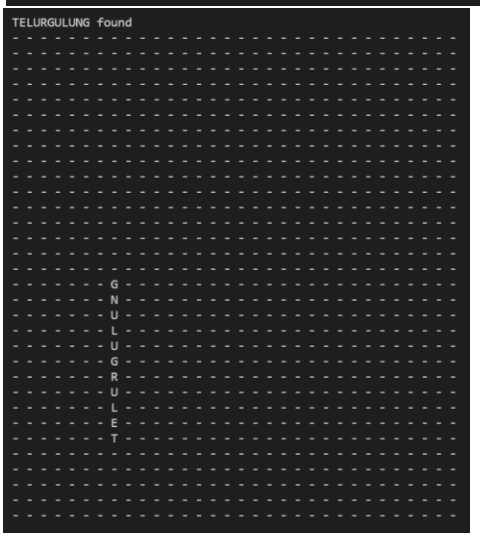
L
O
R


TELURGULUNG found
G
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L
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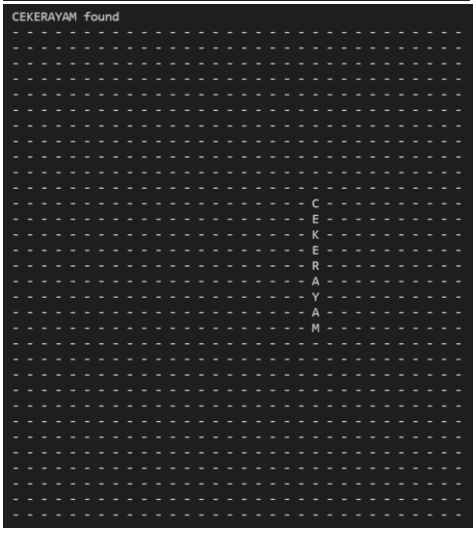
CEKERAYAM found
C
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K
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R
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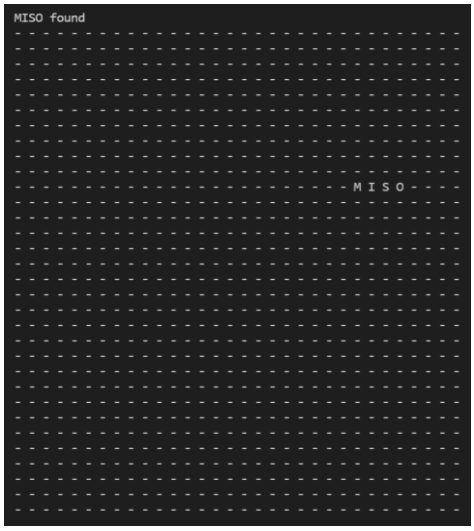
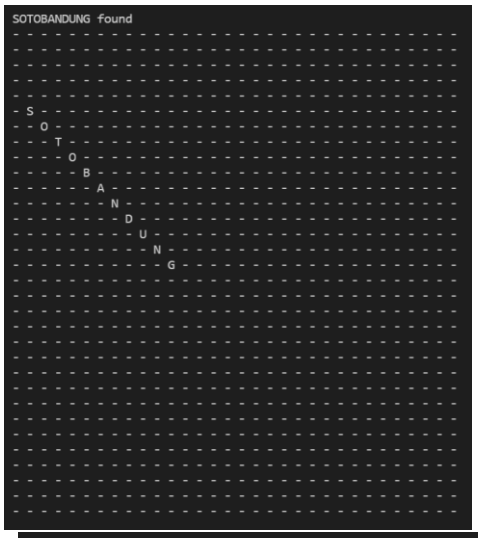
A
M


MISO found
M I S O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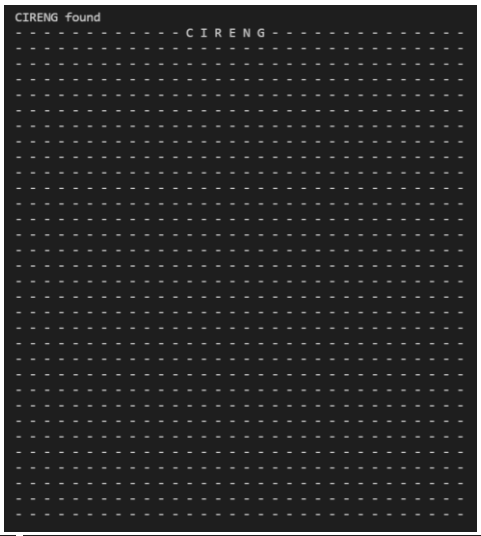
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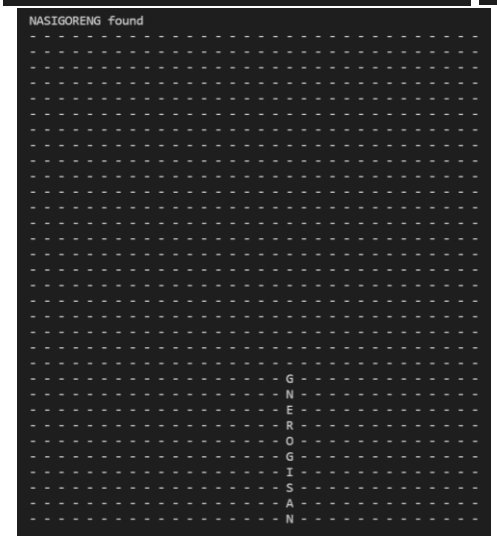
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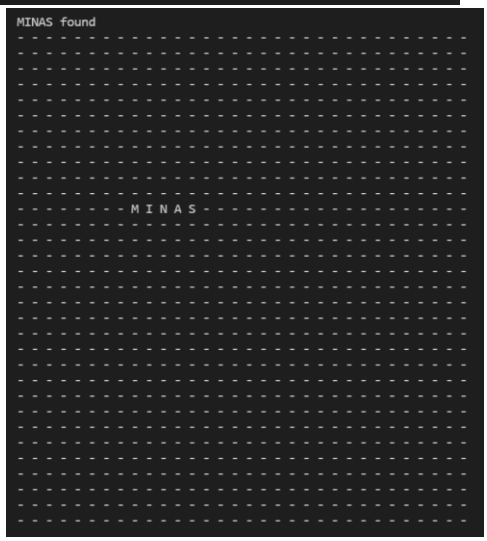
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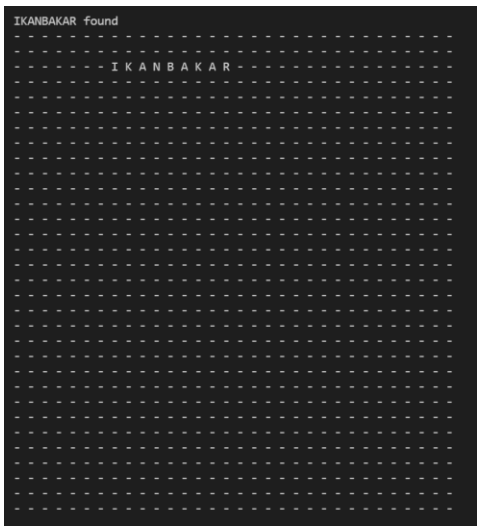
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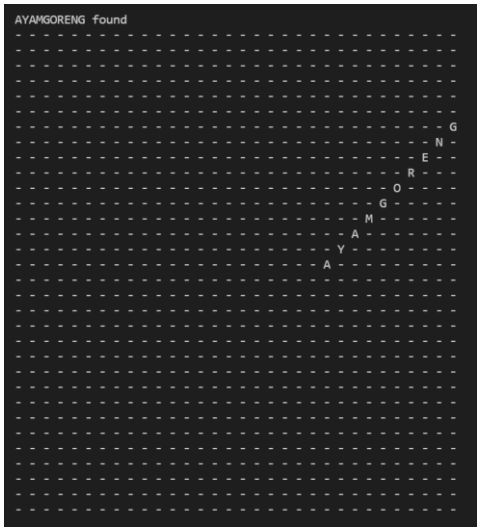
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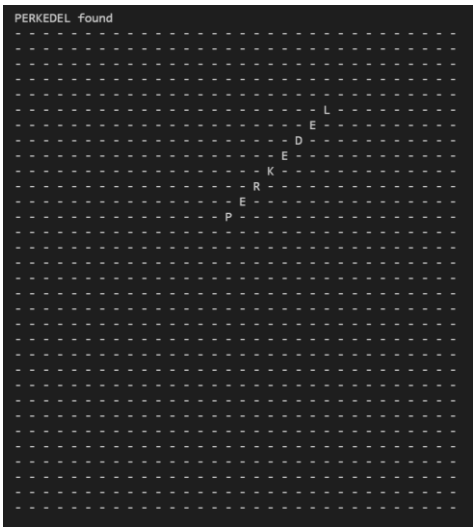
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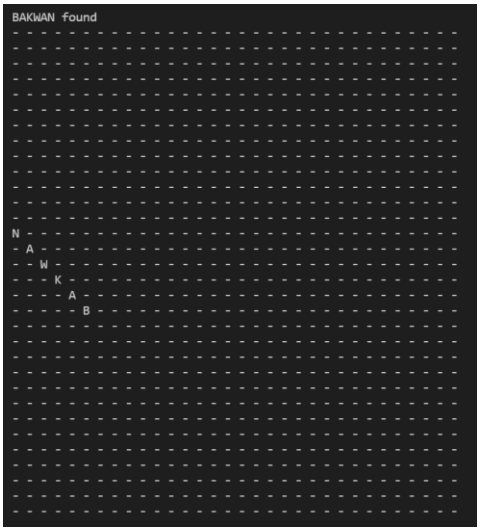
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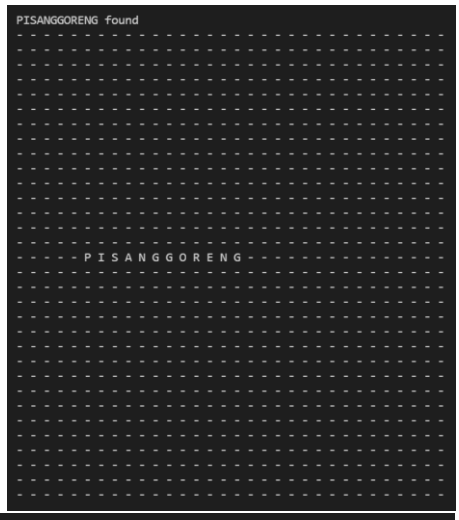

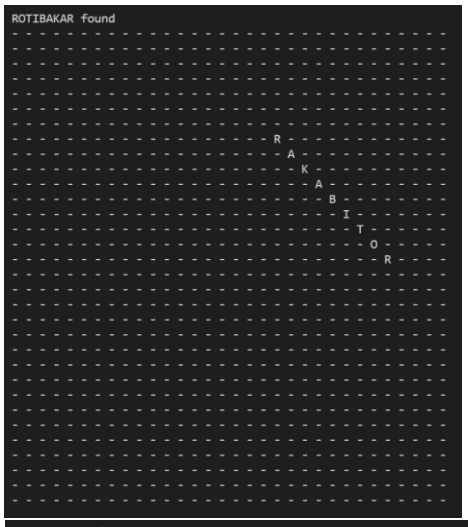

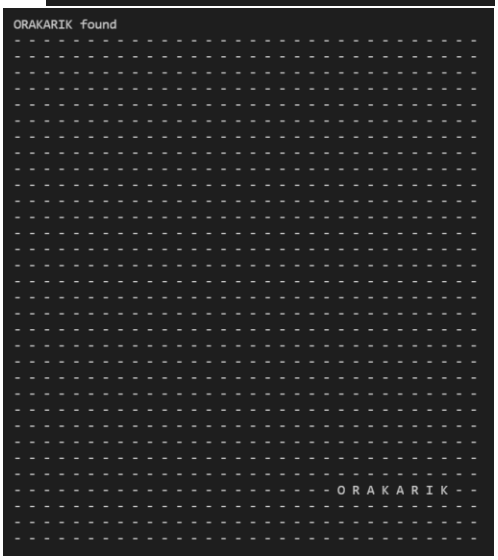

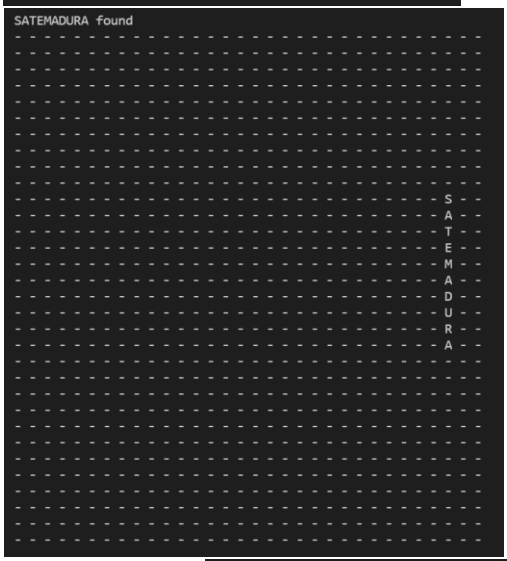

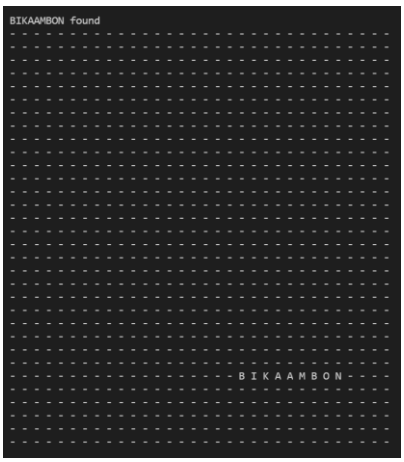

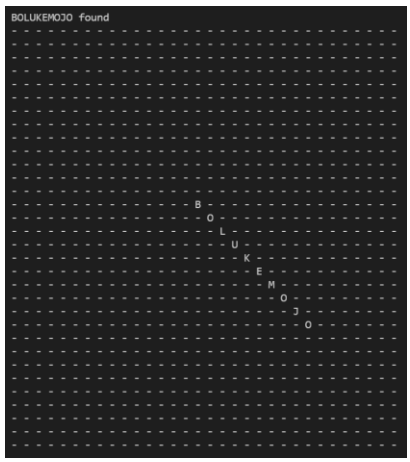

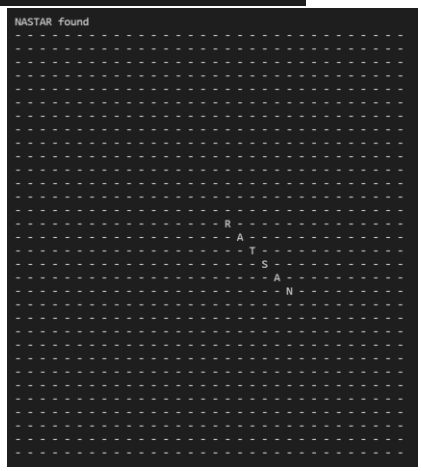


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Time taken by program is : 9.000000 sec
Total comparison : 11003
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c. 34x32

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Enter name of the file (without .txt):  large34x32
Your Word Search Puzzle :
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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
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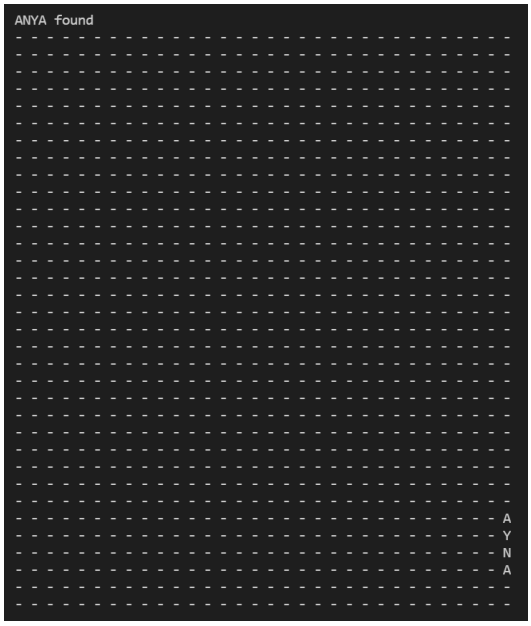
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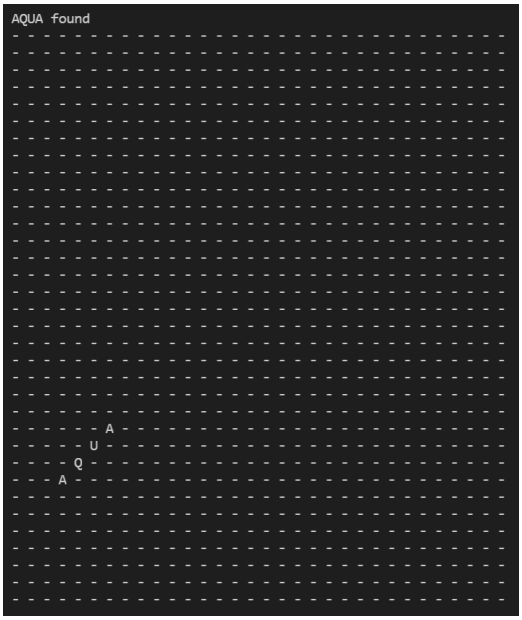
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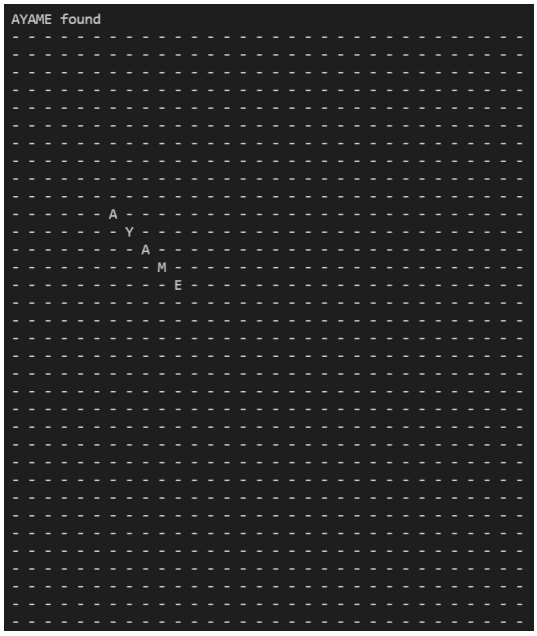
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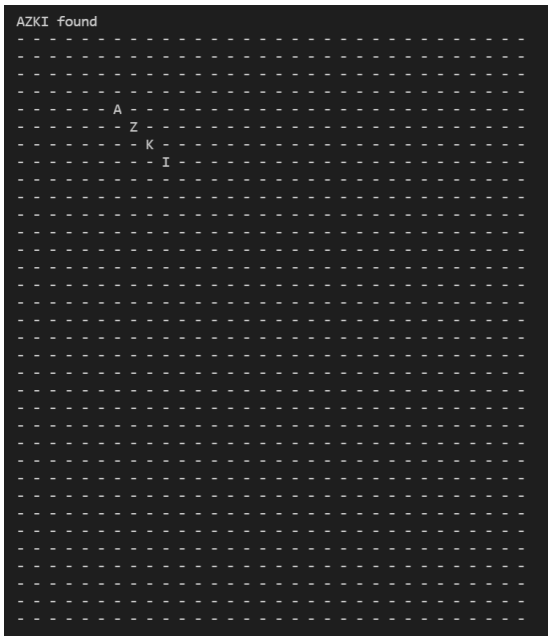
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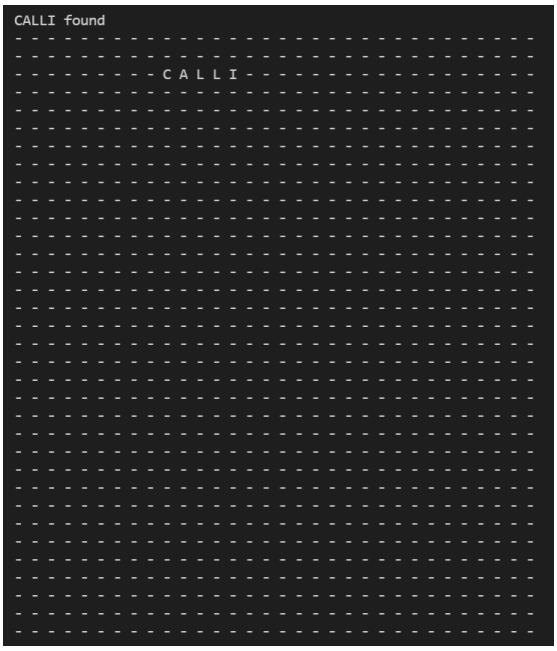
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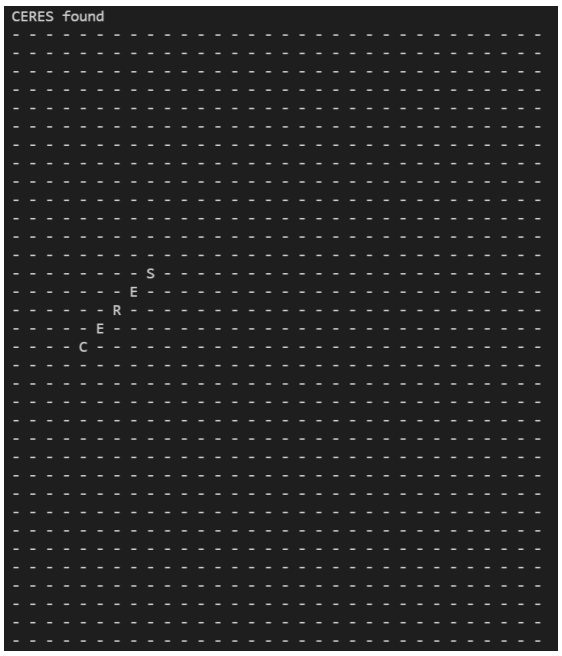
CERES found
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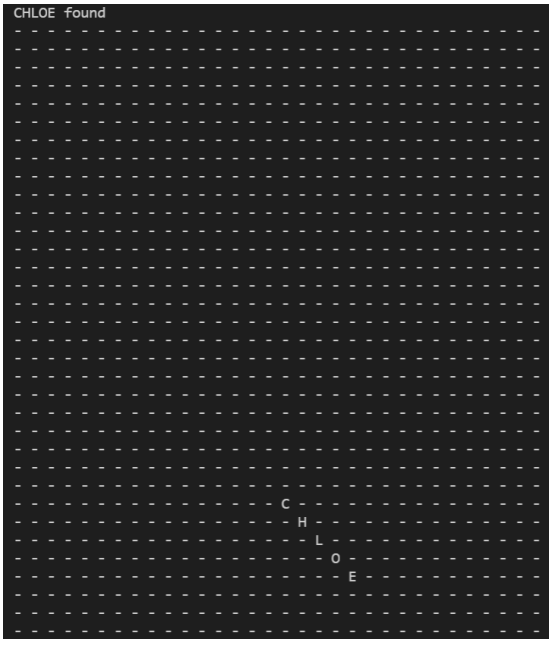
CHLOE found
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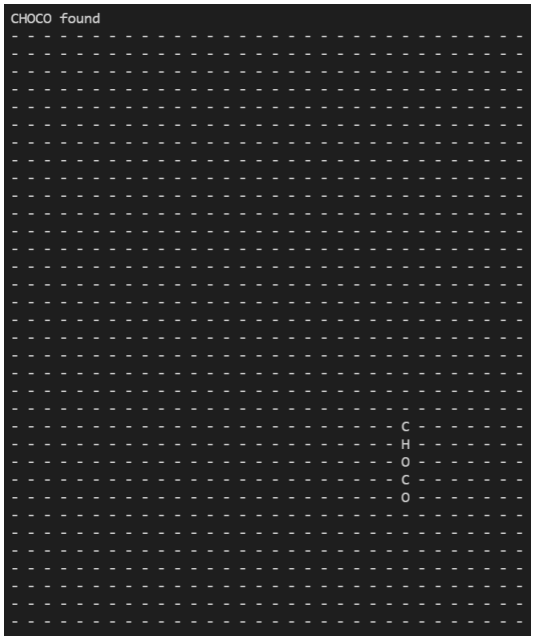
CHOCO found
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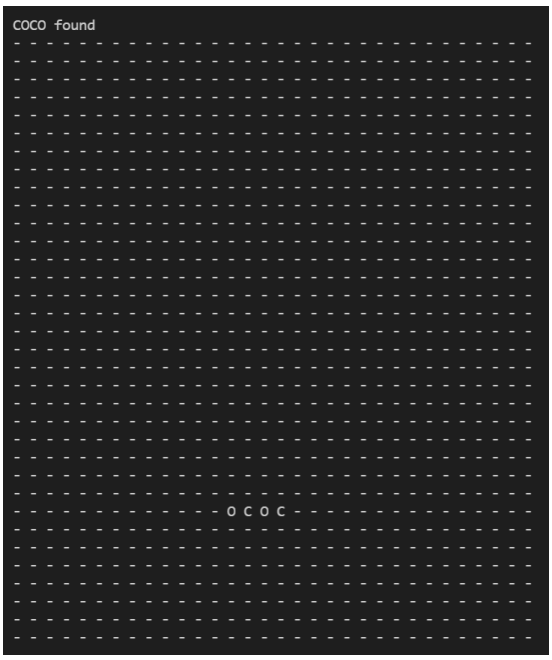
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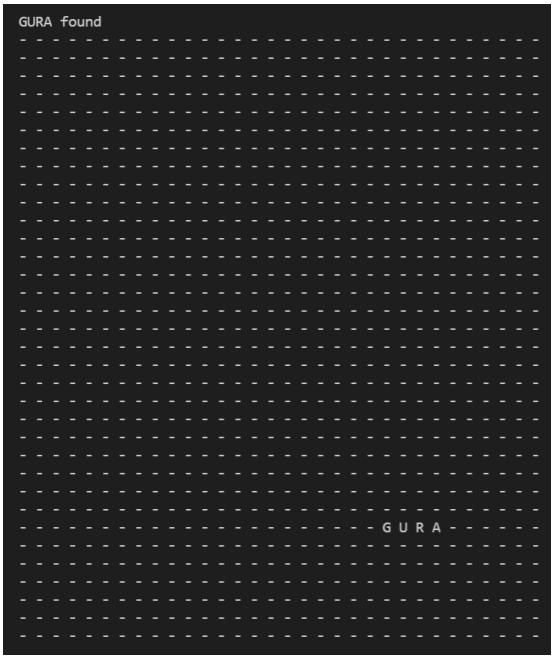
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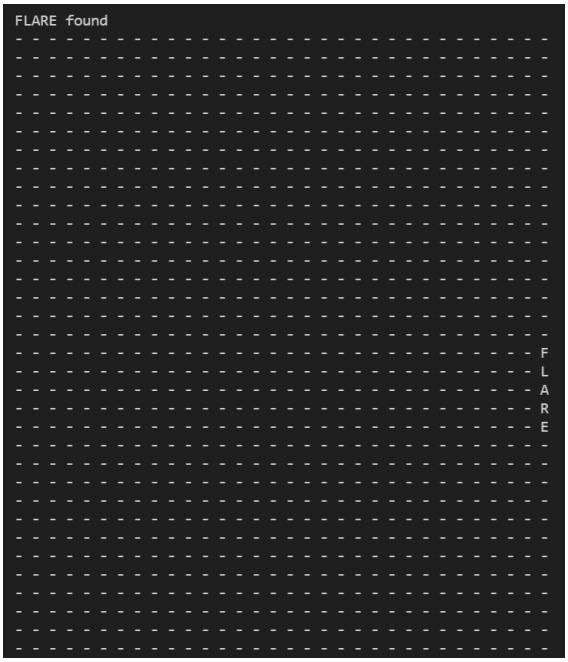
G U R A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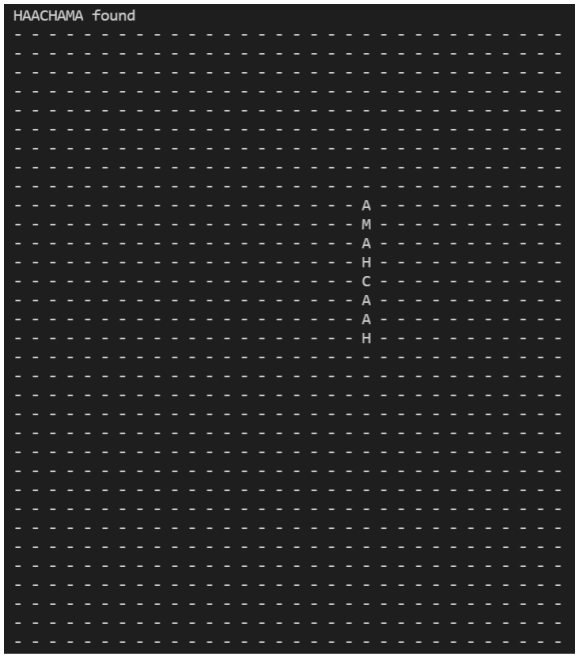
HAACHAMA found
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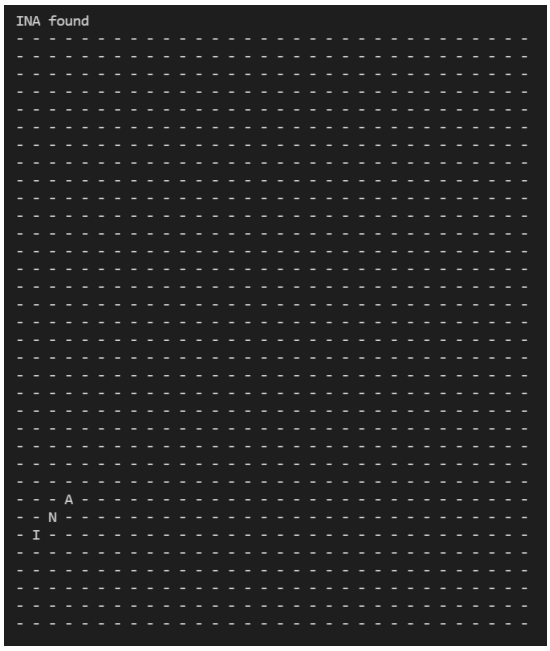
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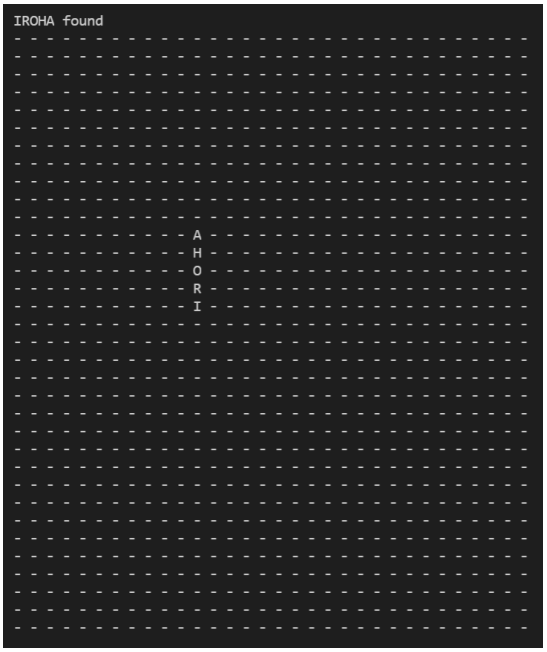
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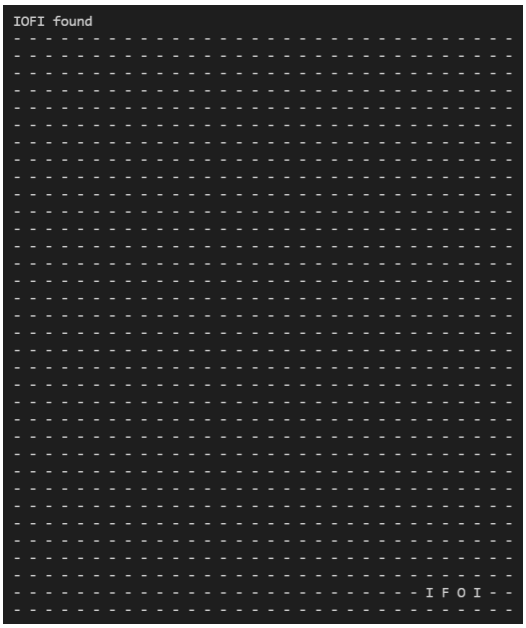
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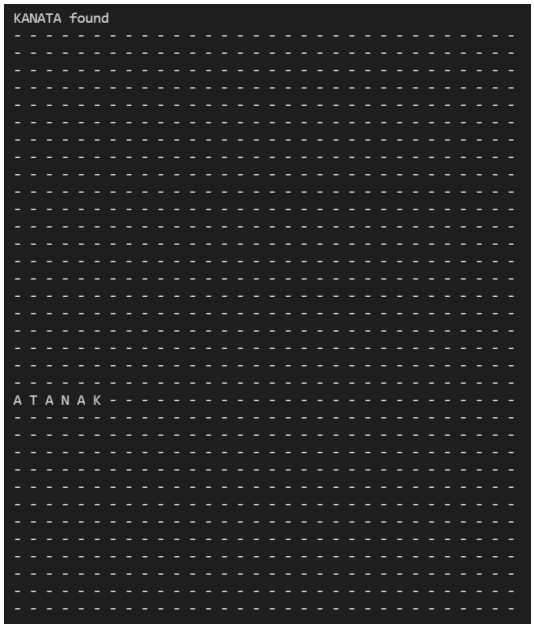
I F O I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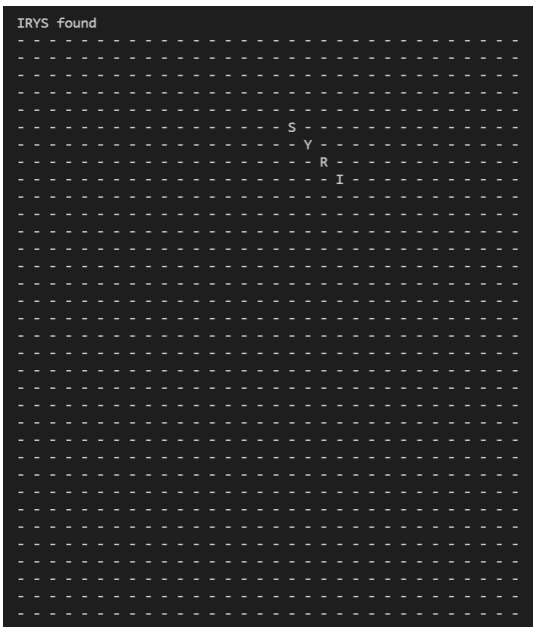
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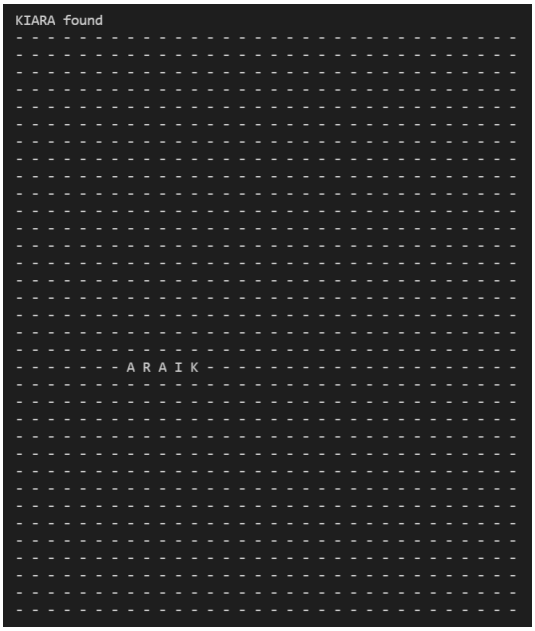
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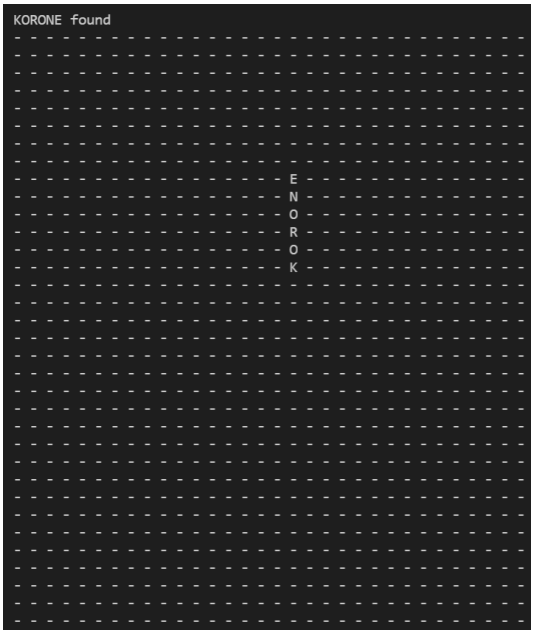
A R A I K


KORONE found
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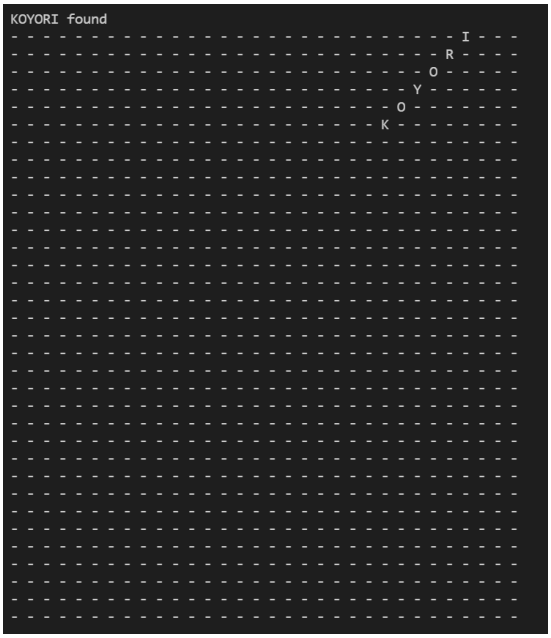
KOYORI found
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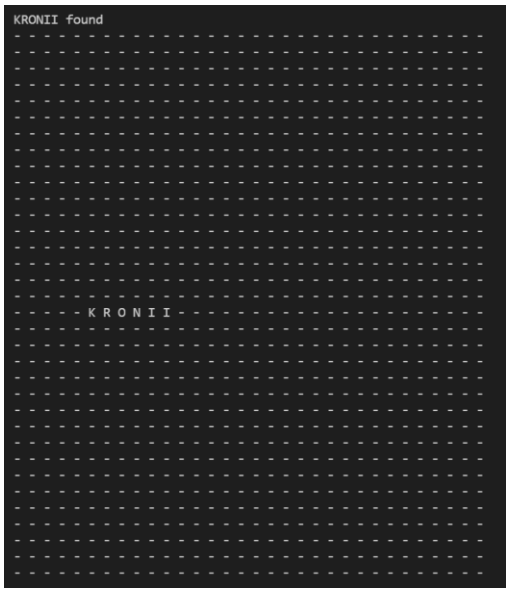
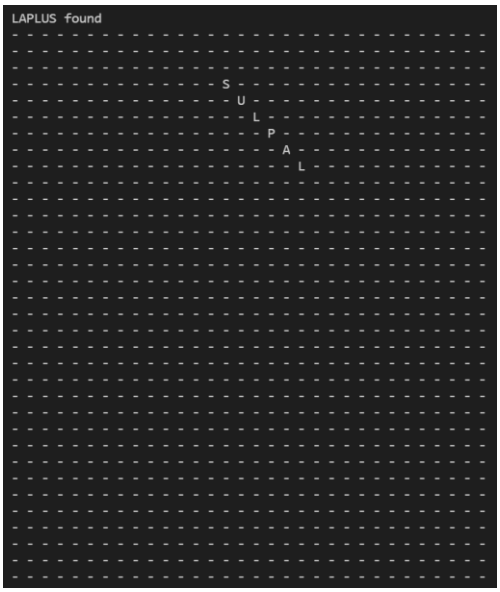

KRONII found
K R O N I I


LAPLUS found
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U
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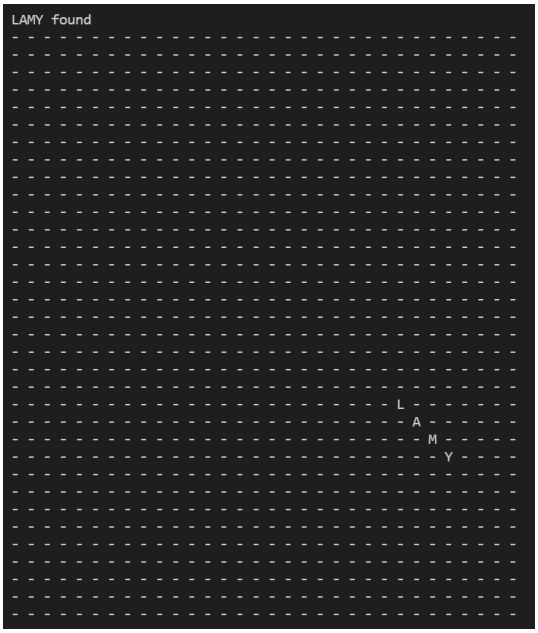
LAMY found
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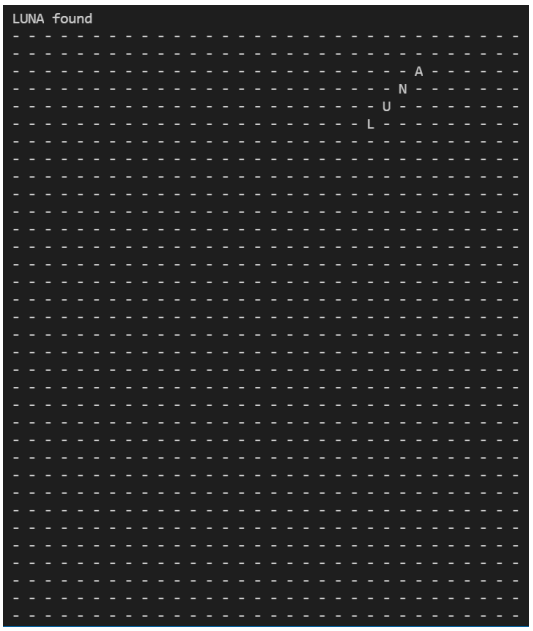
M
Y


LUNA found
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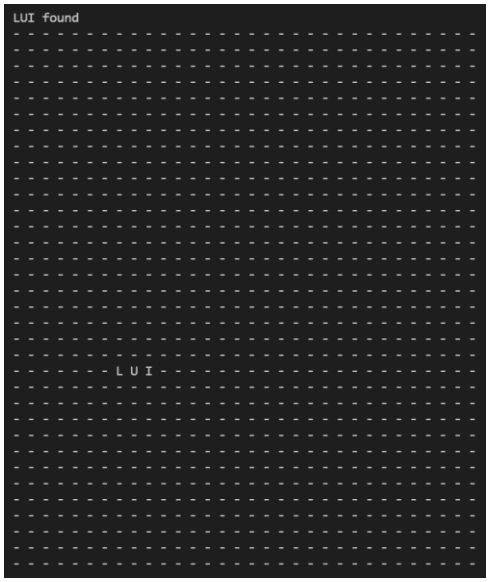
N
U
L

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Time taken by program is : 12.000000 sec
Total comparison : 13345
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IV. Alamat Drive yang Berisi Kode Program

https://drive.google.com/drive/folders/19a4dEOxKofPF_w5vLkzbDnaeJ1oeJ-sJ?usp=sharing

V. Check List

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	√	