



FUNDAMENTALS OF PROGRAMMING

FYP PROJECT REPORT

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Introduction:

A 9x9 crossword puzzle is the project. The code generates a random alphabet matrix. The user is then asked to discover a word in the crossword that of a specified length. The user then looks for the word in the crossword puzzle and inputs it into the console. If the word appears in the crossword, the user's score is increased by one and he is alerted that he has 'won.' If the user types an incorrect word, the application informs him that he has 'lost' and displays the score on the console.

Sources:

YouTube

Peers

www.programwiz.com

Pseudo Code:

Prompting the name of the player.

Generation of random letters in a two-dimensional array.

Insertion of your word bank string array into the puzzle.

Asking to enter the word to be find and tell the player if it is wrong or correct.

Ask the player if he wants to play the puzzle game again or not.

If he doesn't want to play, then we will print out the final score achieved by the player.

Problems Faced and Solutions:

Making the software search for the word in multiple orientations was one of the most difficult challenges. Several cpp methods and libraries were used to fix the direction problem. Another issue was figuring out how to generate a random crossword puzzle such that each time the alphabets were spread in a different way. This problem was easily solved with the rand() method.

CODE:

```
#include<iostream>
#include<stdlib.h>
#include<ctime>
#include<windows.h>
using namespace std;
int main()
{
    string name;
    cout << "Enter Name: ";
    cin >> name;
    cout << endl;
```

```

int score = 0;
char input;
do
{

    system("cls");

    cout
*****CROSS
WORD
PUZZLE*****
endl;

{

    srand(time(NULL));

    string s[10] = { "register" , "copy"
,"safeguard","coding","workshop","house","horse","beaut
y","chair","exams" };

    char puzzle[9][9];

    for (int i = 0; i < 10; i++)
    {

```

```

        for (int j = 0; j < 10; j++)
        {

                do

                        puzzle[i][j] = rand();
                while  (!(puzzle[i][j]  >=  97  &&
puzzle[i][j] <= 122));

        }
}

```

```

int p = rand() % 10;
int r;
int c;
if (s[p].length() % 2 != 0)
{
        r = rand() % 10;
        c = rand() % 1;
        int x;

```

```

        for (x = 0, c; s[p][x] != '\0'; x++, c++)
        {
            puzzle[r][c] = s[p][c];
        }
    }
    else
    {
        r = rand() % 2;
        c = rand() % 10;
        int x;
        for (x = 0, r; s[p][x] != '\0'; x++, r++)
            puzzle[r][c] = s[p][r];
    }
    cout << endl;
    for (int i = 0; i < 10; i++)
    {
        for (int j = 0; j < 10; j++)
            cout << puzzle[i][j] << " ";
        cout << endl;
    }
}

```

```
    }  
    string answer;  
    cout << "\nEnter word that is of length " <<  
s[p].length() << endl;  
    cin >> answer;  
    if (answer == s[p])  
    {  
        score = score + 1;  
        cout << "you won!!!" << endl;  
    }  
    else  
    {  
        cout << "You lost!!!" << endl;  
    }  
}  
cout << "Play again? (y/n)";  
cin >> input;
```

```

    } while (input != 'n');

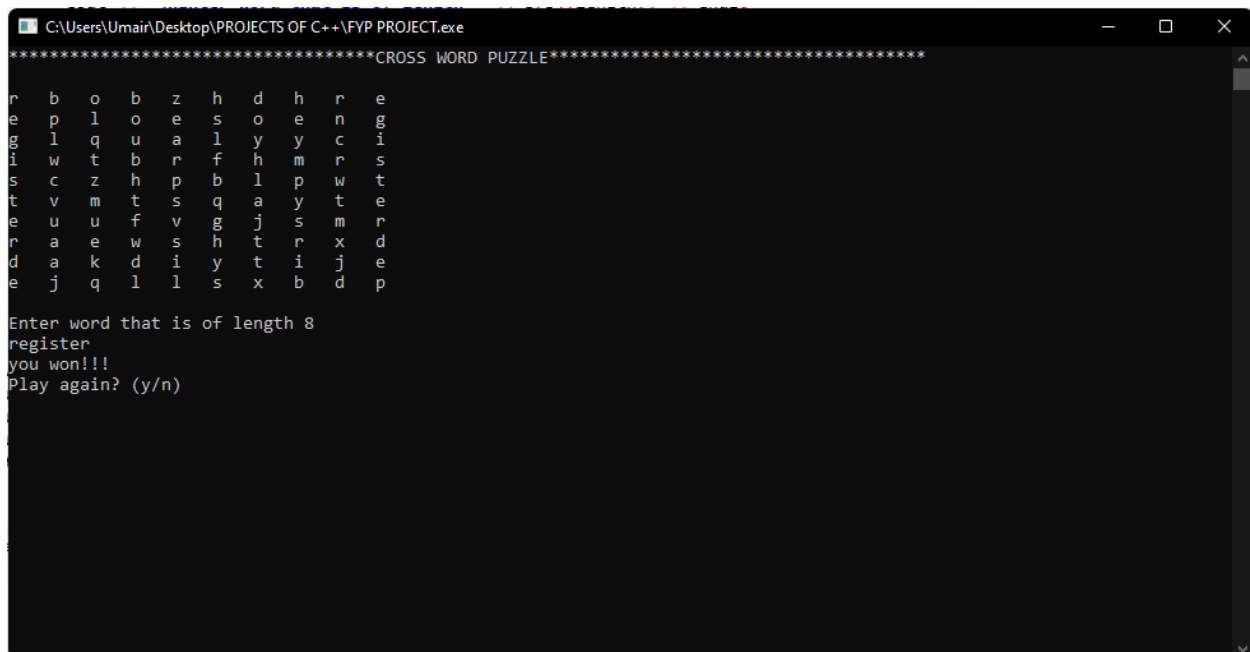
    cout<<"*****"<<"GAME
OVER"<<"*****"<<endl;

    cout << name << endl << "Your score is: " << score;
    cout << endl << endl << endl;

    return 0;
}

```

RESULT:



```

C:\Users\Umai\Desktop\PROJECTS OF C++\FYP PROJECT.exe
*****CROSS WORD PUZZLE*****
r  b  o  b  z  h  d  h  r  e
e  p  l  o  e  s  o  e  n  g
g  l  q  u  a  l  y  y  c  i
i  w  t  b  r  f  h  m  r  s
s  c  z  h  p  b  l  p  w  t
t  v  m  t  s  q  a  y  t  e
e  u  u  f  v  g  j  s  m  r
r  a  e  w  s  h  t  r  x  d
d  a  k  d  i  y  t  i  j  e
e  j  q  l  l  s  x  b  d  p

Enter word that is of length 8
register
you won!!!
Play again? (y/n)

```


*****CROSS WORD PUZZLE*****

```
s  a  f  e  g  u  a  r  d  j
j  v  m  n  e  l  q  z  o  d
d  w  c  j  o  d  o  z  x  e
e  d  q  r  k  z  i  v  f  v
v  e  o  w  t  b  h  o  o  p
p  g  c  w  r  o  k  h  j  i
i  p  m  o  v  k  x  c  p  n
n  a  n  w  e  i  f  d  k  g
g  p  p  l  f  s  w  k  g  r
r  p  v  r  s  z  h  y  f  l
```

Enter word that is of length 9

safeguard

you won!!!

Play again? (y/n)

*****CROSS WORD PUZZLE*****

```
x  v  a  z  d  a  x  a  t  s
s  x  o  u  w  c  w  j  b  o
o  j  u  o  n  x  w  i  t  r
r  h  t  y  o  y  h  z  d  k
k  l  k  q  n  w  u  r  z  s
s  c  o  v  o  o  u  w  e  h
h  w  k  f  x  m  h  s  i  o
o  d  x  y  q  k  d  k  l  p
p  z  r  y  w  o  w  v  b
    l  p  r  g  h  r  q  o  t
```

Enter word that is of length 8

asfag

You lost!!!

Play again? (y/n)n

*****GAME OVER*****

Umairrr

Your score is: 1

Press any key to continue . . .