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SE-4-D

EXPERIMENT N0-2

1. Write a function that takes a word and changes all vowels to the next vowel (cyclically): a to e; e to I; I to o; o to u; u to a.

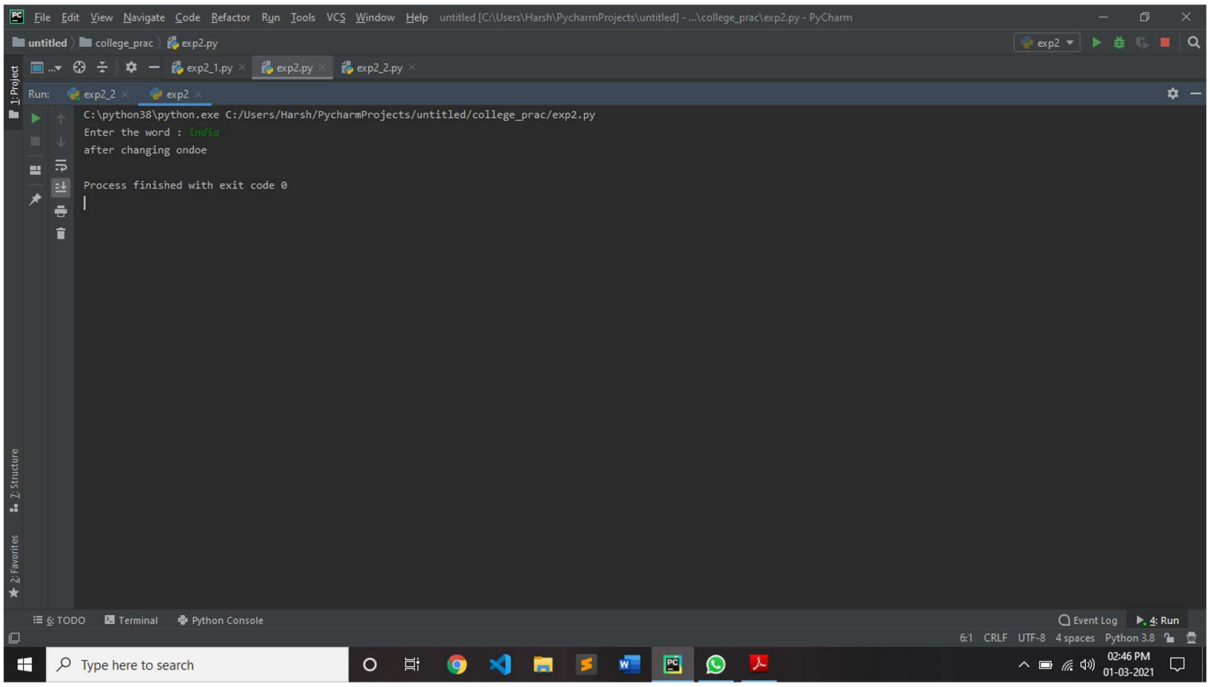
CODE:

```
def vowels(word1):
    x = ""
    l = list(word1)
    for i in range(len(l)):
        if l[i] == 'a':
            l[i] = 'e'
        elif l[i] == 'e':
            l[i] = 'i'
        elif l[i] == 'i':
            l[i] = 'o'
        elif l[i] == 'o':
            l[i] = 'u'
        elif l[i] == 'u':
            l[i] = 'a'
        elif l[i] == 'A':
            l[i] = 'E'
        elif l[i] == 'E':
            l[i] = 'I'
        elif l[i] == 'I':
            l[i] = 'O'
```

```
        elif l[i] == 'O':
            l[i] = 'U'
        elif l[i] == 'U':
            l[i] = 'A'
    for ele in l:
        x += ele
    return print(f"after changing {x}")


if __name__ == '__main__':
    str = input("Enter the word : ")
    vowels(str)
```

OUTPUT:



2. Write a function which takes a C program statement as input and display all the tokens.

CODE:

```
def token(statement1):
    int_data_type = ['int', 'signed int', 'unsigned int', 'short int',
                     'signed short int', 'unsigned short int',
                     'long int', 'signed long int', 'unsigned long int']
    float_data_type = ['float', 'double', 'long double']
    character_data_type = ['char', 'signed char', 'unsigned char']
    void_data_type = ['void']
    keywords = ['auto', 'double', 'int', 'struct', 'break', 'else',
                'long', 'switch', 'case', 'enum', 'register', 'typedef',
                'char', 'extern', 'return', 'union', 'continue', 'for',
                'signed', 'void', 'do', 'if', 'static', 'while', 'default',
                'goto', 'sizeof', 'volatile', 'const', 'float', 'short',
                'unsigned']
    delimiter = [',', ';', '"', '"', '{', '}', '|', '/', '\\']
    special_characters = ['~', '!', '#', '$', '%', '^', '&', '*', '(', ')',
                          '_', '+', '|', '\\', '`', '-', '=', '{', '}', '[',
                          ']', ':', '"', ';', '<', '>', '?', ',', '.', '/']
    operators = ['+', '-', '*', '/', '%', '++', '--', '==', '!=', '>', '<',
                 '>=', '<=', '&&', '||', '!', '&', '|', '^', '~', '<<', '>>',
                 '=', '+=', '-=', '*=', '/=', '%=', '<<=', '>>=', '&=', '^=',
                 '|=', '*', '?:', '->']
```

```
lst1 = list(statement1.split())
for i in range(len(lst1)):
    flag = 0
    if lst1[i] in keywords:
        print(lst1[i], ": Keyword")
        flag = 1
    if lst1[i] in special_characters:
        print(lst1[i], ": Special Character")
        flag = 1
    if lst1[i] in int_data_type:
        print(lst1[i], ": INT data type")
    elif lst1[i] in float_data_type:
        print(lst1[i], ": FLOAT data type")
    elif lst1[i] in character_data_type:
        print(lst1[i], ": CHAR data type")
    elif lst1[i] in void_data_type:
        print(lst1[i], ":VOID data type")
    elif lst1[i] in operators:
        print(lst1[i], ": Operator")
    elif lst1[i] in delimiter:
        print(lst1[i], ": Delimiter")
    elif lst1[i].isnumeric():
        print(lst1[i], ": Number")
    else:
        if flag == 0:
            b = list(lst1[i])
```

```
        n = len(b)
    if n == 3 and b[0] == b[n - 1] and (b[0] == "" or b[0] == """):
        print(lst1[i], ": Character Constant")
    elif b[0] == b[n - 1] and (b[0] == "" or b[0] == """):
        print(lst1[i], ": String")
    else:
        print(lst1[i], ": Variable")
statement = input("Enter the Statement : ")
token(statement)
```

OUTPUT: