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19CSE102 Computer Programming
Lab Evaluation 2
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1. Given below is a C program to find the length of a string. [10 Marks]

```
int main()
{
    char s[1000];
    int i;

    printf("Enter a string: ");
    scanf("%s", s);

    for(i = 0; s[i] != '\0'; ++i);

    printf("Length of string: %d", i);
    return 0;
}
```

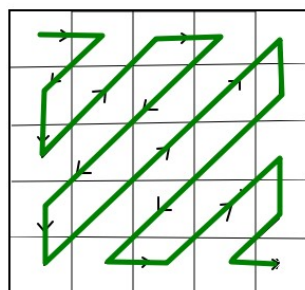
Write a recursive function `int StrLen(char *str)` that computes the length of string such that the following `main()` should work as desired.

```
int main()
{
    char s[1000];
    int i;

    printf("Enter a string: ");
    scanf("%s", s);

    printf("Length of string: %d", StrLen(s));
    return 0;
}
```

2. Given a matrix of any order, write a program to print the matrix in a zig-zag fashion as shown in the following figure. [10 Marks]



Given the following matrix

1 2 3

4 5 6

7 8 9

the program should print

1 2 4 7 5 3 6 8 9

3. For an user input b and x , write a recursive function to compute b^x whose definition is as follows. [10 Marks]

$$b^x = \begin{cases} 1 & \text{if } n=0 \\ (b^{x/2})^2 & \text{if } n \text{ is even} \\ b * b^{x-1} & \text{if } n \text{ is odd} \end{cases}$$