SWS ASSIGNMENT 4

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Q1. Nth Arithmetic Progression

```python
def Nth_of_AP(a, d, N) :

    return (a + (N - 1) * d)

    a = 2

    d = 1

    N = 5


print( "The ", N ,"th term of the series is : ",

    Nth_of_AP(a, d, N))
```

Q2. Sum of Arithmetic Progression

```c
#include <stdio.h>

int main() {

    int a, n, d, tn, i;  int sum = 0;

    printf("First Number of A.P Series:  ");

    scanf("%d", &a);

    printf("Total Numbers in A.P Series:  ");

    scanf("%d", &n);

    printf("Common Difference:  ");

    scanf("%d", &d);

    sum = (n * (2 * a + (n - 1) * d)) / 2;

    tn = a + (n - 1) * d;
```

```c
    printf("\n The Sum of Series A.P. : ");

    for(i = a; i <= tn; i = i + d) {

        if(i != tn)

            printf("%d + ", i);

        else

            printf("%d = %d", i, sum);}

    printf("\n");

    return 0; }
```

Q3 Geometric Progression Series

```c
#include <stdio.h>

#include<math.h>

int main() {

    int a, n, r;

    float tn, sum = 0;

    printf("First Number of G.P Series:  ");

    scanf("%d", &a);

    printf("Total Numbers in G.P Series:  ");

    scanf("%d", &n);

    printf("Common Ratio:  ");

    scanf("%d", &r);
```

```c
sum = (a * (1 - pow(r, n ))) / (1- r);

tn = a * (pow(r, n - 1));

printf("\n The Sum of Geometric Progression Series =  %.2f", sum);

printf("\n The tn Term of Geometric Progression Series = %.2f \n", tn);

return 0;

}
```

Q4. Pattern 1

```c
#include <stdio.h>

int main() {

int i;  int j;  i=1;

do{

 j=1;

do{

printf("%d ",j);

j++; }

while( j<=10 );

printf("\n");

i++; b}

while( i<=5 );

return 0;

}
```

Q5.Pattern 2

```c
#include<stdio.h>

#include<conio.h>

void main() {

int i, j, k;

for(i=0; i<=5; i++){

for(j=0; j<=i;j++)

printf("%d", j+1);

for(k=0; k<=5-(i+1); k++)

printf(" ");

for(j=0; j<=i; j++)

printf("%d", j+1);

printf("\n");

}
```

Q6 Counting Different characters

```python
def countCharType(str):

    vowels = 0 consonant = 0 specialChar = 0 digit = 0

   for i in range(0, len(str)):

      ch = str[i]
```

```python
        if ( (ch >= 'a' and ch <= 'z') or

            (ch >= 'A' and ch <= 'Z') ):

            ch = ch.lower()

            if (ch == 'a' or ch == 'e' or ch == 'i'

                    or ch == 'o' or ch == 'u'):

                vowels += 1

            else:

                consonant += 1

        elif (ch >= '0' and ch <= '9'):

            digit += 1

        else:

            specialChar += 1

    print("Vowels:", vowels)

    print("Consonant:", consonant)

    print("Digit:", digit)

    print("Special Character:", specialChar)

str = "helo im not your frnd434235 "

countCharType(str)
```

Q7. Pattern 3

```c
#include<stdio.h>

#include<conio.h>

int main(){

int n, i , j;

printf("rows: ");

scanf("%d",&n);

for(i = 1; i <= n; i++) {

for(j = 1; j <= i; j++) {

printf("*"); }

printf("\n"); }

for(i = n; i >= 1; i--) {

for(j = 1; j <= i; j++) {

printf( "*"); }

printf("\n"); }

return 0;

}
```

Q8 swapping strings

```c
#include<stdio.h>

 void swap1(char **str1_ptr, char **str2_ptr) {

 char *temp = *str1_ptr;
```

```c
    *str1_ptr = *str2_ptr;

    *str2_ptr = temp; }

 int main() {

char *str1 = "Hey !!";

char *str2 = "How have you been?";

swap1(&str1, &str2);

printf("str1 is %s, str2 is %s", str1, str2);

getchar();

return 0; }
```