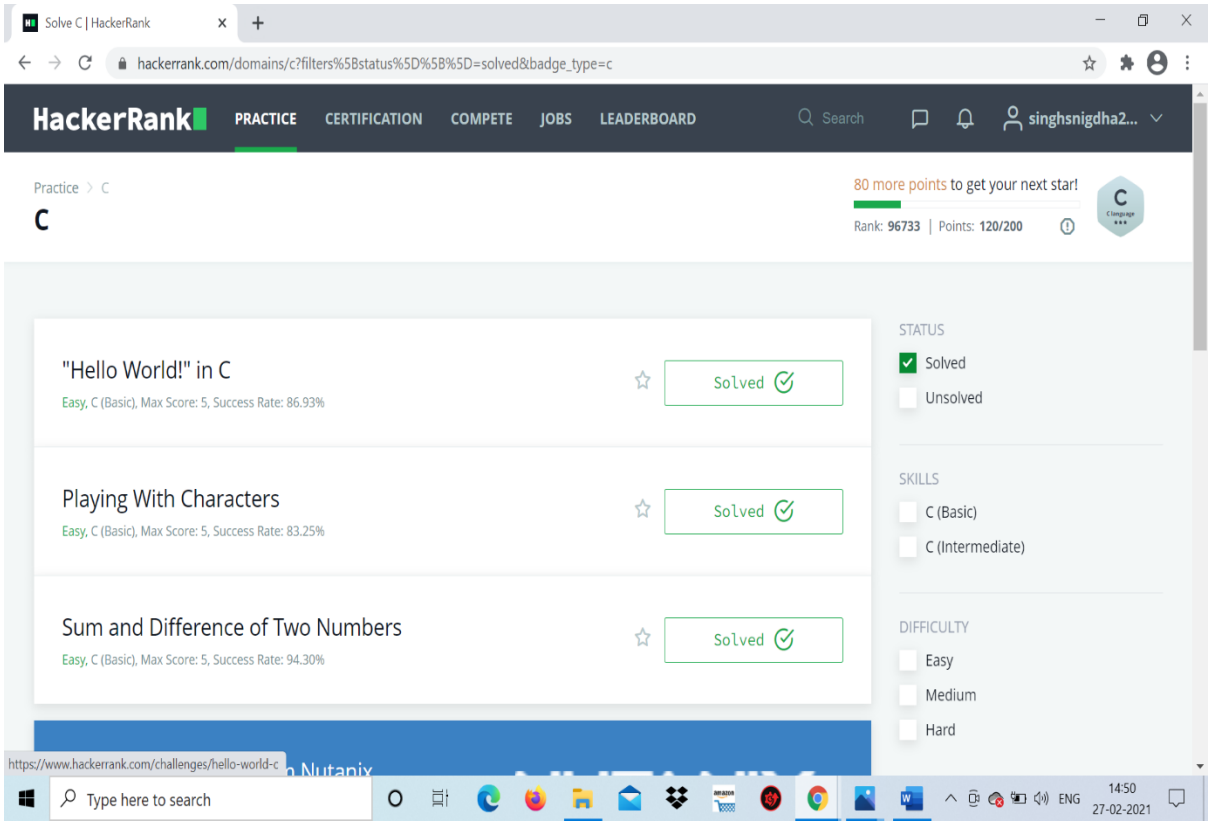
SNIGDHA SINGH

20BCE0545



"Hello World!" in C

```c
#include <stdio.h>
#include <string.h>
#include <math.h>
#include <stdlib.h>

int main()
{

    char s[100];
    scanf("%[^\n]%*c", &s);
    printf("Hello, World!\n");
    printf("%s",s);

    /* Enter your code here. Read input from STDIN. Print output to STD
OUT */
    return 0;}
```

Playing With Characters

```c
#include <stdio.h>
#include <string.h>
#include <math.h>
#include <stdlib.h>

int main()
{   char ch,s[10000],sen[10000000];
    scanf("%c\n",&ch);
    scanf("%s\n",s);
    gets(sen);
    printf("%c\n",ch);
    printf("%s\n",s);
    puts(sen);

    /* Enter your code here. Read input from STDIN. Print output to STD
OUT */
    return 0;
}
```

Sum and Difference of Two Numbers

```c
#include <stdio.h>
#include <string.h>
#include <math.h>
#include <stdlib.h>

int main()
{
    int i,j;
    float k,l;
    int c,d;
    float a,b;
    scanf("%d %d",&i,&j);
    scanf("%f %f",&k,&l);
    c=i+j;
    d=i-j;
    a=k+l;
    b=k-l;
    printf("%d %d\n",c,d);
    printf("%.1f %.1f",a,b);


    return 0;
}
```

Functions in C

```c
#include <stdio.h>
/*
Add `int max_of_four(int a, int b, int c, int d)` here.
*/
int max_of_four(a,b,c,d){
    int max=0;
    if((a>b)&&(a>c)&&(a>d)){
        max=a;
    }
    else if((b>c)&&(b>d)&&(b>a)){
        max=b;
    }
    else if((c>d)&&(c>b)&&(c>a)){
        max=c;
    }
    else{
        max=d;
    }
   return max ;
}
int main() {
    int a, b, c, d;
    scanf("%d %d %d %d", &a, &b, &c, &d);
    int ans = max_of_four(a, b, c, d);
    printf("%d", ans);

    return 0;
}
```

Conditional Statements in C

```c
#include<stdio.h>
int main(){
    int n;
    scanf("%d",&n);
    switch(n){
        case 1: printf("one");break;
        case 2: printf("two");break;
        case 3: printf("three");break;
        case 4: printf("four");break;
        case 5: printf("five");break;
        case 6: printf("six");break;
        case 7: printf("seven");break;
        case 8: printf("eight");break;
        case 9: printf("nine");break;
```

```
        default:printf("Greater than 9");
    }

}
```

For Loop in C

```
#include <stdio.h>
#include <string.h>
#include <math.h>
#include <stdlib.h>



int main()
{
    int a, b,n;
    scanf("%d\n%d", &a, &b);
    for(n=a;n<=b;n++){
   if (n>=1 && n<=9){
    switch(n){
     case 1:
     printf("one\n");break;
     case 2:
     printf("two\n");break;
     case 3:
     printf("three\n");break;
     case 4:
     printf("four\n");break;
     case 5:
     printf("five\n");break;
     case 6:
     printf("six\n");break;
     case 7:
     printf("seven\n");break;
     case 8:
     printf("eight\n");break;
     case 9:
     printf("nine\n");break;}}
  else if (n>9){
      if (n%2==0){
          printf("even\n");
      }
      else{
          printf("odd\n");
      }
  }}
```

```
    // Complete the code.

    return 0;
}
```

Sum of Digits of a Five Digit Number

```
#include <stdio.h>
#include <string.h>
#include <math.h>
#include <stdlib.h>

int main() {

    int n,i,j;
    int sum=0;
    scanf("%d", &n);
    j=10;
    while(n>0){
        i=n%j;
        sum+=i;
        n=n/j;
    }
    printf("%d",sum);
    //Complete the code to calculate the sum of the five digits on n.
    return 0;
}
```

Bitwise Operators

```
#include <stdio.h>
#include <string.h>
#include <math.h>
#include <stdlib.h>
//Complete the following function.

void calculate_the_maximum(int n, int k) {
    int max;
    int i,j;
    int pts[n];
    for(i=0;i<n;i++){
       pts[i]=i+1;
    }
      max=0;
    for(i=1;i<n;i++){
        for(j=i+1;j<=n;j++){
           if(((i&j)<k) && ((i&j)>max)){
```

```
                max=(i&j) ;
            }
            }
        }
    printf("%d\n",max);
     max=0;
    for(i=1;i<n;i++){
        for(j=i+1;j<=n;j++){
           if(((i|j)<k) && ((i|j)>max)){
              max=(i|j) ;
           }
           }
        }
    printf("%d\n",max);
    max=0;
    for(i=1;i<n;i++){
        for(j=i+1;j<=n;j++){
           if(((i^j)<k) && ((i^j)>max)){
              max=(i^j) ;
           }
           }
        }
    printf("%d\n",max);
}

int main() {
    int n, k;

    scanf("%d %d", &n, &k);
    calculate_the_maximum(n, k);

    return 0;
}
```

Printing Pattern Using Loops

```
4 4 4 4 4 4 4
4 3 3 3 3 3 4
4 3 2 2 2 3 4
4 3 2 1 2 3 4
4 3 2 2 2 3 4
4 3 3 3 3 3 4
4 4 4 4 4 4 4
```

```
#include <stdio.h>

int main()
{
```

```c
int N, i, j;

scanf("%d", &N);

// First upper half of the pattern
for(i=N; i>=1; i--)
{
    // First inner part of upper half
    for(j=N; j>i; j--)
    {
        printf("%d ", j);
    }

    // Second inner part of upper half
    for(j=1; j<=(i*2-1); j++)
    {
        printf("%d ", i);
    }

    // Third inner part of upper half
    for(j=i+1; j<=N; j++)
    {
        printf("%d ", j);
    }

    printf("\n");
}

// Second lower half of the pattern
for(i=1; i<N; i++)
{
    // First inner part of lower half
    for(j=N; j>i; j--)
    {
        printf("%d ", j);
    }

    // Second inner part of lower half
    for(j=1; j<=(i*2-1); j++)
    {
        printf("%d ", i+1);
    }

    // Third inner part of lower half
    for(j=i+1; j<=N; j++)
    {
```

```
            printf("%d ", j);
        }

        printf("\n");
    }

    return 0;
}
```

Calculate the Nth term

```
#include <stdio.h>
#include <string.h>
#include <math.h>
#include <stdlib.h>
//Complete the following function.

int find_nth_term(int n, int a, int b, int c) {
  //Write your code here.
  if (n==1){
     return a;
  }
  else if(n==2){
      return b;
  }
  else if(n==3){
      return c;
  }
  else{
      return find_nth_term(n-1,a,b,c)+find_nth_term(n-
2,a,b,c)+find_nth_term(n-3,a,b,c);
  }
}

int main() {
    int n, a, b, c;

    scanf("%d %d %d %d", &n, &a, &b, &c);
    int ans = find_nth_term(n, a, b, c);

    printf("%d", ans);
    return 0;
}
```