SWS Logic Building Assignment 3

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Q1. Program for and gate

```
#include <stdio.h>
#include <stdlib.h>
 int main()
{
   int a[5] = { 1, 0, 1, 0, 1 };
   int b[5] = { 0, 1, 1, 0, 0 };
   int i, and_case;
   for (i = 0; i < 5; i++) {
           and_case = a[i] & b[i];
           printf("\n %d AND %d = %d", a[i], b[i], and_case);}
}
```

Q2. Program for or gate

```
#include <stdio.h>
#include <stdlib.h>
 int main()
{
   int a[5] = { 1, 0, 1, 0, 1 };
   int b[5] = { 0, 1, 1, 0, 0 };
   int i, or_case;
   for (i = 0; i < 5; i++) {
       or_case = a[i] || b[i];
       printf("\n %d AND %d = %d", a[i], b[i], or_case); }
}
```

Q3. Program for nand gate

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

```
int main()
{
  int a[5] = { 1, 0, 1, 0, 1 };
   int b[5] = { 0, 1, 1, 0, 0 };
   int i, ans ;
   for (i = 0; i < 5; i++) {
      ans = !(a[i] * b[i]);
      printf("\n %d NAND %d = %d",
           a[i], b[i], ans);
   }
}
```

Q4. Program for not gate

```
#include <stdio.h>
#include <stdlib.h>
 int main()
{
 int a[5] = { 1, 0, 1, 0, 1 };
  int i, ans;
  for (i = 0; i < 5; i++) {
      ans  =  !(a[i]);
      printf("\n  NOT %d = %d", a[i], ans);
   }
}
```

Q5. Program for nor gate

```
#include <stdio.h>
#include <stdlib.h>
 int main()
{
  int a[5] = { 1, 0, 1, 0, 1 };
```

```
   int b[5] = { 0, 1, 1, 0, 0 };
   int i, ans;
   for (i = 0; i < 5; i++) {
      if (a[i] == 0 && b[i] == 0)
         ans = 1;
      else
         ans = 0;
      printf("\n %d NOR %d = %d", a[i], b[i], ans);
   }
}
```

Q6. number triangle

```
#include<stdio.h>
#include<stdlib.h>
int main(){
  int i,j,k,l,n;
printf("Range=");
scanf("%d",&n);
for(i=1;i<=n;i++)
{
            for(j=1;j<=n-i;j++)
            {    printf(" ");   }
                        for(k=1;k<=i;k++)
                        {    printf("%d",k);    }
for(l=i-1;l>=1;l--)
{    printf("%d",l);    }
printf("\n");
}
return 0;
}
```

Q7 Pascal Triangle (Python)

```
def solve(n):
```

```
  for i in range(n+1):
    for j in range(n-i):
      print(' ', end='')

    C = 1
    for j in range(1, i+1):
      print(C, ' ', sep='', end='')
          C = C * (i - j) // j
    print()

n = 6
solve(n)
```

Q8. Biggest and lowest from an array

```
#include <stdio.h>
#include <conio.h>
void main()
{
        int val[5],h,l,i;
        clrscr();
        for(i=0;i<5;i++)
    {   printf("\n VALUE-%d: ",i+1);
        scanf("%d",&val[i]); }
        l=val[0];
        h=val[0];
        for(i=0;i<5;i++)
    {
                if(val[i]>h)
                        h=val[i];
                else
         { if(val[i]<l)
        l=val[i];}
```

```
            }
            printf("\nHIGHEST : %d",h);
            printf("\nLOWEST : %d",l);
}
```

Q9 Sum of given integers

```
#include <stdio.h>
 int getSum(int n)
{ int sum = 0;
    while (n != 0) {
        sum = sum + n % 10;
        n = n / 10; }
    return sum; }
 int main()
{ int n = 78;
    printf(" %d ", getSum(n));
    return 0; }
```

Q10 While loop

```
#include <stdio.h>
 nt main () {
  int a = 10;
   while( a < 20 ) {
      printf("value of a is : %d\n", a);
      a++;
   } return 0; }
```

Q11 do while loop

```
#include <stdio.h>
main()
{
    int i = 10;
```

```
    do{
      printf("Hello %d\n", i );
      i = i -1;
    }while ( i > 0 );
return 0;
}
```