Links: Precedence
https://overiq.com/c-programming-101/operator-precedence-and-associativity-in-c/

C Programming Basic Algorithm [75 exercises with solution]
[An editor is available at the bottom of the page to write and execute the scripts.]

1. Write a C program to compute the sum of the two given integer values. If the two values are the same, then return triple their sum.
My answer:

```
#include <stdio.h>

int main() {
   // Write C code here
   int a,b;
   printf("enter n1 :");
   scanf("%d",&a);
   printf("enter n2 :");
   scanf("%d",&b);
   if(a==b){
      printf("%.d+%.d = %.d",a,b,3*(a+b));}


   else{
         printf("%.d+%.d = %.d",a,b,a+b);
      }



   return 0;
}
```

2. Write a C program to get the absolute difference between n and 51. If n is greater than 51 return triple the absolute difference.
Expected Output:
My answer:

```
int main() {
   // Write C code here

   int n1;


   printf("enter n1 value :");
```

```
    scanf("%d",&n1);
    if(n1>51){
        printf("%.d-%.d = %.d",n1,51,3*n1-51);
    }
    else{
        printf("%.d-%.d = %.d",n1,51,n1-51);
    }

    return 0;
}
```

3. Write a C program to check two given integers, and return true if one of them is 30 or if their sum is 30.
Expected Output:

My answer:

```
#include <stdio.h>

int main() {
    int a,b;
    printf("enter the value of a :");
    scanf("%d",&a);
    printf("enter the value of b :");
    scanf("%d",&b);
    //if else
    if (a+b == 30) {
        printf("returned true");

    }
    else if (a == 30){
         printf("returned true");
    }
    else if(b == 30){
        printf("returned true");
    }

    else
    {
        printf("returned false");
    }
```

```
    return 0;
}
```

4. Write a C program to check a given integer and return true if it is within 10 of 100 or 200.
Expected Output:

```
#include <stdio.h>

int main() {
   int n;
   printf("enter the value of n :");
   scanf("%d",&n);

   //if else
   if (n== 0){
      printf("Please enter a value other than 0");
   }

   else if (100-n <= 10) {
      printf("returned true");

   }
   else if (200-n <= 10){
       printf("returned true");
   }
   else
   {
      printf("returned false");
   }
```

5. Write a C program to check whether a given positive number is a multiple of 3 or a multiple of 7

My answer:

```
#include <stdio.h>

int main() {
   // Write C code here
   int  a;
   int b;
   int c;
```

```
   printf("ENTER YOUR POSITIVE NUMBER! :");
   scanf("%d",&a);
   b = (a%7);
   c = (a%3);
   //checking if positive
   if(a<0){
      printf("please enter a positive integer");
      }
   //if else
   else if(a,c == 0){
      printf("the following number is a multiple of both 3 and 7");}

   else if(c==0){
      printf("the following number is a multiple of 7");
   }
    else if(b==0){
      printf("the following number is a multiple of 3");
   }

   else
   printf("the following number is not a multiple of both 3 and 7");


       return 0;
}
```

6. Write a C program to check whether a given temperatures is less than 0 and the other is greater than 100.
Expected Output:
My Answer:

```
#include <stdio.h>

int main() {
   // Write C code here
   int a;
   int b;

   printf("enter temperature of a: ");
   scanf("%d",&a);
   printf("enter temperature of b: ");
```

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

   //if else
   if (a,b > 100){
      printf("your temperature is greater than 100");
   }
   else if (a,b < 0){
      printf("your temperature is less than 0");
   }
   else
   printf("your value doesnt suit to the categories");
    return 0;
}
```

7. Write a C program to check two given integers whether either of them is in the range 100..200 inclusive.
Expected Output:

```
#include <stdio.h>

int main() {
    // Write C code here
    int a,b,n;
    n = 100;
    printf("enter number 1 :");
    scanf("%d",&a);
    printf("enter number 2 :");
    scanf("%d",&b);
    //declaring range
    if(a-n<=100){
        if(b-n<=100){
            printf("returned true");
        }
    }
    else{
        printf("returned false");
    }
    return 0;
}
```

8. Write a C program to check whether three given integer values are in the range 20..50 inclusive. Return true if 1 or more of them are in the said range otherwise return false.
Expected Output:

```
#include <stdio.h>

int main() {
   // Write C code here
   int a,b,c,n;
   n = 20;
   printf("enter number 1 :");
   scanf("%d",&a);
   printf("enter number 2 :");
   scanf("%d",&b);
   printf("enter number 3 :");
   scanf("%d",&c);
   //declaring range
  If ((a >= 20 && a <= 50) ||  (b >= 20 && b <= 50) ||
(c >= 20 && c <= 50))
  {
  printf (“atleast one is in range”) ;
}
   if(a-n<=30){
      if(b-n<=30){

         if(c-n<=30){
            printf("returned true");
         }
      }
   }
   else{
      printf("returned false");
   }
   return 0;
}
```

9. Write a C program to check whether two given integer values are in the range 20..50 inclusive. Return true if 1 or other is in the said range otherwise false.
Expected Output:

```
int main() {
```

```
    // Write C code here
    int a,b,c,n;
    n = 20;
    printf("enter number 1 :");
    scanf("%d",&a);
    printf("enter number 2 :");
    scanf("%d",&b);
    printf("enter number 3 :");
    scanf("%d",&c);
    //declaring range
    if(a-n<=30){
        if(b-n<=30){

            if(c-n<=30){
                printf("returned true");
            }
        }
    }
    else{
        printf("returned false");
    }
    return 0;
}
```

10. Write a C program to check which number nearest to the value 100 among two given integers. Return 0 if the two numbers are equal.
Expected Output:

```
#include <stdio.h>

int main() {
    // Write C code here
    int a,b,n,d,e;
    n = 100;
    d = n-b;
    e = n-a;
    printf("enter your first number :");
    scanf("%d",&a);
    printf("enter your second number :");
    scanf("%d",&b);
    //if else
    if(d<e){
        printf("%d is the nearest number",b);
    }
```

```
    else if(d>e){
        printf("%d is the nearest number",a);
    }
    return 0;
}
```

11. Write a C program to check whether two given integers are in the range 40..50 inclusive, or they are both in the range 50..60 inclusive.
Expected Output:

```
#include <stdio.h>

int main() {
    // Write C code here
    int a,b,n;
    n= 40;
    printf("enter your first number :");
    scanf("%d",&a);
    printf("enter your 2nd number :");
    scanf("%d",&b);

    if(a-n<10){
        if(b-n<10){
        printf("its in the range of 40 - 49");

    }}
    else if(a-n<=20){
        if(b-n<=20){
        printf("its in the range 50 - 60");
    }}
    else{
        printf("its not part of the range :(");
    }
    return 0;
}
```

12. Write a C program to find the larger value from two positive integer values that is in the range 20..30 inclusive, or return 0 if neither is in that range.
Expected Output:

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

```
#include <stdlib.h>

int main()
{
  int a,b,n;
   n = 20;

   printf("please enter +ve int n1 :");
   scanf("%d",&a);
   printf("please enter +ve int n2 :");
   scanf("%d",&b);
  if(a <= 0 || b<= 0){
   printf("enter a positive integer");
  }
   else if(a-n <= 10||b-n <= 10){

      printf("in range");
   }

   return 0;
}
```

13. Write a C program to check if two given non-negative integers have the same last digit.
Expected Output:

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

int main()
{
  int a,b;


   printf("please enter +ve int n1 :");
   scanf("%d",&a);
   printf("please enter +ve int n2 :");
   scanf("%d",&b);
```

```
  if(a <= 0 || b<= 0){
   printf("enter a positive integer");
  }
   else if(a%10 == b%10){

      printf("they have the same last digit");
   }
   else{
      printf("dont hv sme last digit");
   }

   return 0;
}
```

14. Write a C program to check whether the sequence of numbers 1, 2, 3 appears in a given array of integers somewhere.
Expected Output:

1
0
1

15. Write a C program to count the number of two 5's are next to each other in an array of integers. Also count the situation where the second 5 is actually a 6.
Expected Output:

1
2
1

16. Write a C program to check if a triple is presents in an array of integers or not. If a value appears three times in a row in an array it is called a triple.
Expected Output:

0
0
1

17. Write a C program to compute the sum of the two given integers. If the sum is in the range 10..20 inclusive return 30.
Expected Output:

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

int main()
{
  int a,b,d = a + b,n = 10;


   printf("please enter  int n1 :");
   scanf("%d",&a);
   printf("please enter  int n2 :");
   scanf("%d",&b);
  if(d-n <= 10 ){
   printf("returned 30");
  }

   else{
      printf("%.d + %.d = %.d",a,b,a+b);
   }

   return 0;
}
```

18. Write a C program that accepts two integers and returns true if either one is 5 or their sum or difference is 5.
Expected Output:

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

int main()
{
  int a,b;


   printf("please enter  int n1 :");
   scanf("%d",&a);
   printf("please enter  int n2 :");
```

```
   scanf("%d",&b);
  if(a + b == 5 || a - b == 5 ){
   printf("returned true");
  }

   else{
      printf("returned false");
   }

   return 0;
}
```

19. Write a C program to to test whether a given non-negative number is a multiple of 13 or it is one more than a multiple of 13.
Expected Output:

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

int main()
{
  int a;


   printf("please enter  int n1 :");
   scanf("%d",&a);
   //checkin if multiple
  if(a <= 0 ){
   printf("please enter a +ve integer");
  }

   else if(a % 13 == 0){
      printf("multiple of 13");
   }
  else if(a % 13 == 1){
      printf("1 more than multiple of 13");
   }

   return 0;
}
```

20. Write a C program to check whether a given non-negative number is a multiple of 3 or 7, but not both.
Expected Output:

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

int main()
{
  int a;


   printf("please enter  int n1 :");
   scanf("%d",&a);
   //checkin if multiple
  if(a <= 0 ){
   printf("please enter a +ve integer");
  }

   else if(a % 7 == 0 && a % 3 == 0){
      return 0;
   }
  else if(a % 7 == 0){

      printf("multiple of 7");
       }
  else if(a % 3 == 0 ){
   printf("multiple of 3");
  }




   return 0;
}
```

21. Write a C program to check whether a given number is within 2 of a multiple of 10.
Expected Output:

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

```
#include <stdlib.h>

int main()
{
   int a,b;


    printf("please enter  int n1 :");
    scanf("%d",&a);
    printf("please enter  int n1 :");
    scanf("%d",&a);
    //checkin if multiple
   if(a % 10 == 0 ||b % 10 == 0){
     printf("its a multiple of 10");
   }

else{
    printf("not a multiple of 10");
}







    return 0;
}
```

22. Write a C program to compute the sum of the two given integers. If one of the given integer value is in the range 10..20 inclusive return 18.
Expected Output:

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

int main()
{
   int a,b,n = 10;


    printf("please enter  int n1 :");
    scanf("%d",&a);
```

```
    printf("please enter  int n2 :");
    scanf("%d",&b);
    if(a <= 0||b<= 0){
        printf("please enter a +ve integer");
    }

   else if(a-n>= 0||b-n>= 0) {
     printf("%.d + %.d = 18",a,b);
   }

else{
    printf("%.d + %.d = %.d",a,b,a+b);
}









    return 0;
}
```

23. Write a C program to check whether it is possible to add two integers to get the third integer from three given integers.
Expected Output:

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

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



    printf("please enter  int n1 :");
    scanf("%d",&a);
    printf("please enter  int n2 :");
    scanf("%d",&b);
    printf("please enter  int n3 :");
    scanf("%d",&n);
    if(a + b == n||b + n == a||a + n == b){
        printf("any two number frm the given integers adds up to the third one");
```

```
    }

   else {
     printf("no two integers of the given integers add up to the other integer");
   }









    return 0;
}
```

24. Write a C program to check whether y is greater than x, and z is greater than y from three given integers x,y,z.
Expected Output:

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

int main()
{
   int x,y,z;


    printf("please enter  int x :");
    scanf("%d",&x);
    printf("please enter  int y :");
    scanf("%d",&y);
    printf("please enter  int z :");
    scanf("%d",&z);
    if(x <= 0 || y<= 0||z<= 0){
        printf("please enter only +ve integer values");
    }

   else if(y>x&&z>y) {
     printf("y is greater than x, and z is greater than y");
   }
```

```
   else{
    printf("The given values do not obey the criterion x<y<z");
   }


 return 0;
}
```

25. Write a C program to check whether two or more non-negative given integers have the same rightmost digit.
Expected Output:

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

int main()
{
   int x,y,z;


    printf("please enter  int x :");
    scanf("%d",&x);
    printf("please enter  int y :");
    scanf("%d",y);

    if(x <= 0 || y <= 0 ){
        printf("please enter only +ve integer values");
    }

   else if(x % 10 == y % 10) {
     printf("they have the same right most digit");
   }
   else{
    printf("they dont have the same right most digit");
   }


 return 0;
}
```

26. Write a C program to check three given integers and return true if one of them is 20 or more less than one of the others.
Expected Output:

27. Write a C program to find the larger from two given integers. However if the two integers have the same remainder when divided by 5, then the return the smaller integer. If the two integers are the same, return 0.
Expected Output:

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

int main()
{
  int x,y,z,a;


   printf("please enter  int x :");
   scanf("%d",&x);
   printf("please enter  int y :");
   scanf("%d",y);

    if(x<y){
      z = y,a = x;
    }
    else if(x>y){
      z = x,a = x;
    }

    else if(x%5 != y%5){
      printf("return %.d",z);
    }


    else if(x%5 == y%5){
     printf("return %.d",a);
   }

  else if( x == y) {
    printf("0");
  }
```

```
 return 0;
}
```

28. Write a C program to check two given integers, each in the range 10..99. Return true if a digit appears in both numbers, such as the 3 in 13 and 33.
Expected Output:

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

int main()
{
   int x,y;


    printf("please enter  int x :");
    scanf("%d",&x);
    printf("please enter  int y :");
    scanf("%d",&y);

     if(x<=0||y<=0||x>99||y>99){
        printf("please enter integers in range 1 - 99");
     }
     else if(x%10 == y %10){
        printf("they have a same digit");
     }

     else if(x%10 != y%10){
        printf("they do not have same digits");
     }




 return 0;
}
```

29. Write a C program to compute the sum of three given integers. If the two values are same return the third value.
Expected Output:

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

int main()
{
  int x,y,z;


   printf("please enter  int x :");
   scanf("%d",&x);
   printf("please enter  int y :");
   scanf("%d",&y);
    printf("please enter  int z :");
   scanf("%d",&z);

    if(x<=0||y<=0||z<=0){
      printf("please enter +ve integers ");
    }
    else if(x == y || y == z || z == x){
      printf("%.d + %.d + %.d = %.d",x,y,z,z);
    }

    else{
      printf("%.d + %.d + %.d = %.d",x,y,z,x+y+z);
    }
```

30. Write a C program to compute the sum of the three integers. If one of the values is 13 then do not count it and its right towards the sum.
Expected Output:

31. Write a C program to compute the sum of the three given integers. However, if any of the values is in the range 10..20 inclusive then that value counts as 0, except 13 and 17.
Expected Output:

```c
#include <stdio.h>
int check_num(int num){
    if (num>10&&num<=20){
        if(num==13 || num == 17){
            return 1;
        }
        else{
            return 0;
        }
    }
    else{
        return 1;
    }

}
int sum(int num1, int num2, int num3){
    int sum=0;
    if(check_num(num1)==1){
        sum+=num1;
    }
    if (check_num(num2)==1){
        sum+=num2;
    }
    if (check_num(num3)==1){
        sum+=num3;
    }
    return sum;
}

int main(){
    int a=13,b=15,c=17;
    printf("%d",sum(a,b,c));
    return 0;
}#include <stdio.h>
int check_num(int num){
    if (num>10&&num<=20){
        if(num==13 || num == 17){
            return 1;
        }
        else{
            return 0;
        }
    }
    else{
        return 1;
    }
```

```
}
int sum(int num1, int num2, int num3){
    int sum=0;
    if(check_num(num1)==1){
        sum+=num1;
    }
    if (check_num(num2)==1){
        sum+=num2;
    }
    if (check_num(num3)==1){
        sum+=num3;
    }
    return sum;
}

int main(){
    int a=13,b=15,c=17;
    printf("%d",sum(a,b,c));
    return 0;
}
```

32. Write a C program to check two given integers and return the value whichever value is nearest to 13 without going over. Return 0 if both numbers go over.
Expected Output:

```
#include <stdio.h>


int main() {
   // Write C code here
   int a,b;
   printf("enter a,b  :");
   scanf("%d %d ",&a,&b);
  if(a>13 && b>13){
     return 0;
  }
  else if(13 - a > 13- b){
     printf("b is nearer");
  }
  else{
     printf("a is nearer");
  }

  return 0;
```

}

33. Write a C program to check three given integers (small, medium and large) and return true if the difference between small and medium and the difference between medium and large is same.
Expected Output:

1
0
1

34. Write a C program to check a given array of integers of length 1 or more and return true if the first element and the last element are equal in the given array.
Expected Output:

1
0
0

35. Write a C program to check two given arrays of integers of length 1 or more and return true if they have the same first element or they have the same last element.
Expected Output:

1
0

36. Write a C program to compute the sum of the elements of a given array of integers.
Expected Output:

150
10

37. Write a C program to rotate the elements of a given array of integers (length 4) in left direction and return the new array.
Expected Output:

Elements in original array are: 10, 20, 30, 40
Elements in new array are: 20, 30, 40, 10

38. Write a C program to reverse a given array of integers and length 5.
Expected Output:

Elements in original array are: 10, 20, 30, 40, 50
Elements in reverse array are: 50, 40, 30, 20, 10

39. Write a C program to create a new array containing the middle elements from the two given arrays of integers, each length 5.
Expected Output:

Elements in original array are:
10, 20, -30, -40, 30
10, 20, 30, 40, 30
Elements in new array are: -30, 30

40. Write a C program to create a new array taking the first and last elements of a given array of integers and length one or more.
Expected Output:

Elements in original array are: 10, 20, 30, 40, 50
Elements in new array are: 10, 50

41. Write a C program to check whether a given array of integers of length 2, contains 15 or 20.
Expected Output:

1
1
0

42. Write a C program to check whether a given array of integers of length 2, does not contain 15 or 20.
Expected Output:

0
0
1

43. Write a C program to check a given array of integers and return true if the array contains 10 or 20 twice. The length of the array will be 0, 1, or 2.
Expected Output:

0
1
0

44. Write a C program to check a given array of integers of length 3 and create a new array. If there is a 5 in the given array immediately followed by a 7 then set 7 to 1.
Expected Output:

Elements in original array are: 1, 5, 7
Elements in new array are: 1, 5, 1

45. Write a C program to compute the sum of the two given arrays of integers of length 3 and find the array which has the largest sum.
Expected Output:

Elements in original array are: 10, 20, -30
Elements in original array are: 10, 20, 30
The array which has the largest sum.: 10, 20, 30

46. Write a C program to create an array taking two middle elements from a given array of integers of length even.
Expected Output:

Elements in original array are: 1, 5, 7, 9, 11, 13
New array: 7, 9

47. Write a C program to create a new array from two given array of integers, each length 3.
Expected Output:

Elements in original array1 are: 10, 20, 30
Elements in original array2 are: 40, 50, 60
New array: 10, 20, 30, 40, 50, 60

48. Write a C program to create a new array swapping the first and last elements of a given array of integers and length will be least 1.

Expected Output:

Elements in original array1 are: 1, 5, 7, 9, 11, 13
New array, after swapping first and last elements: 13, 5, 7, 9, 11, 1

49. Write a C program to create a new array of length 3 from a given array (length atleast 3) containing the elements from the middle of the array.
Expected Output:

Elements in original array1 are: 1, 5, 7, 9, 11, 13
New array: 7, 9, 11

50. Write a C program to find the largest value from first, last, and middle elements of a given array of integers of odd length (atleast 1).
Expected Output:

1
9
9

51. Write a C program to count number of even elements in a given array of integers.
Expected Output:

3

52. Write a C program to compute the sum of values in a given array of integers except the number 17. Return 0 if the given array has no integer.
Expected Output:

Sum of values in the array of integers except the number 17: 46

53. Write a C program to compute the sum of the numbers in a given array except those numbers starting with 5 followed by atleast one 6. Return 0 if the given array has no integer.
Expected Output:

Sum of values in the array of integers except the number 17: 37

54. Write a C program to check whether a given array of integers contains 5 next to a 5 somewhere.
Expected Output:

0
1
1

55. Write a C program to check whether a given array of integers contains 5's and 7's.
Expected Output:

1
0
1

56. Write a C program to check whether the sum of all 5' in the array exactly 15 in a given array of integers.
Expected Output:

0
1
0

57. Write a C program to check whether the number of 3's is greater than the number of 5's.
Expected Output:

1
0
0

58. Write a C program to check whether a given array of integers contains a 3 or a 5.
Expected Output:

1
0
1

59. Write a C program to check whether a given array of integers contains no 3 or a 5.
Expected Output:

1
1
0
1

60. Write a C program to check whether an array of integers contains a 3 next to a 3 or a 5 next to a 5 or both.
Expected Output:

1
0
1

61. Write a C program to check a given array of integers and return true if the given array contains two 5's next to each other, or two 5 separated by one element.
Expected Output:

1
0
1

62. Write a C program to check a given array of integers and return true if there is a 3 with a 5 somewhere later in the given array.
Expected Output:

0
1
0

63. Write a C program to check a given array of integers and return true if the given array contains either 2 even or 2 odd values all next to each other.
Expected Output:

0
1
1

64. Write a C program to check a given array of integers and return true if the value 5 appears 5 times and there are no 5 next to each other.
Expected Output:

1
0
1
0

65. Write a C program to check a given array of integers and return true if every 5 that appears in the given array is next to another 5.
Expected Output:

1
0
1
1

66. Write a C program to check a given array of integers and return true if the specified number of same elements appears at the start and end of the given array.
Expected Output:

1
0
1

67. Write a C program to check a given array of integers and return true if the array contains three increasing adjacent numbers.
Expected Output:

1
0
1

68. Write a C program to shift an element in left direction and return a new array.
Expected Output:

Elements in original array are: 10, 20, 30, 40
Elements in new array are: 20, 30, 40, 10

69. Write a C program to create a new array taking the elements before the element value 5 from a given array of integers.
Expected Output:

Elements in original array are: 1, 2, 3, 5, 7
Elements in new array are: 1, 2, 3

70. Write a C program to create a new array taking the elements after the element value 5 from a given array of integers.
Expected Output:

Elements in original array are: 1, 2, 3, 5, 7, 9, 11
Elements in new array are: 7, 9, 11

71. Write a C program to create a new array from a given array of integers shifting all zeros to left direction.
Expected Output:

Elements in original array are: 1, 2, 0, 3, 5, 7, 0, 9, 11
Elements in new array are: 0, 0, 1, 3, 5, 7, 2, 9, 11

72. Write a C program to create a new array after replacing all the values 5 with 0 shifting all zeros to right direction.
Expected Output:

Elements in original array are: 1, 2, 0, 3, 5, 7, 0, 9, 11, 5
Elements in new array are: 1, 2, 0, 3, 7, 0, 9, 11, 0, 0

73. Write a C program to create new array from a given array of integers shifting all even numbers before all odd numbers.
Expected Output:

Elements in original array are: 1, 2, 5, 3, 5, 4, 6, 9, 11

Elements in new array are: 2, 4, 6, 3, 5, 1, 5, 9, 11

74. Write a C program to check whether the value of each element is equal or greater than the value of previous element of a given array of integers.

Expected Output:

0
1
1

75. Write a C program to check a given array (length will be atleast 2) of integers and return true if there are two values 15, 15 next to each other.
Expected Output:

1
0
1