Basic program and Operator

Assignment-01

EC – 509

C C++ IT Training

Department: Training and placement Department

Faculty: Ram

1. Write a C program to convert a given integer (in seconds) to hours, minutes and seconds.

Solution: -

```c
1. #include<stdio.h>
2. int main(){
3.     int sec,hr,min;
4.     printf("Enter Time in Seconds : ");
5.     scanf("%d",&sec);
6.     hr = sec/3600;
7.     min = ((sec - hr*3600)/60);
8.     sec = sec - ((hr)*3600 + (min)*60);
9.     printf("\nH:M:S - %d:%d:%d\n",hr,min,sec);
10.     return 0;
11. }
```
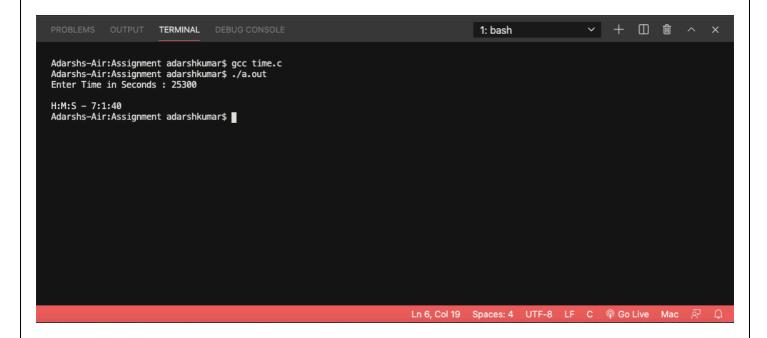
Output:-

2. Write a C program to convert a given integer (in days) to years, months and days, assumes that all months have 30 days and all years have 365 days.

Solution: -

```c
1. #include<stdio.h>
2. int main(){
3.     int days,year,month;
4.     printf("Enter Total Number of Days : ");
5.     scanf("%d",&days);
6.     year = days/365;
7.     printf("\n%d Year(s)",year);
8.     month = (days - year*365)/30;
9.     printf("\n%d Month(s)",month);
10.     days = days - (365*year + month*30);
11.     printf("\n%d Day(s)\n",days);
12.     return 0;
13. }
```
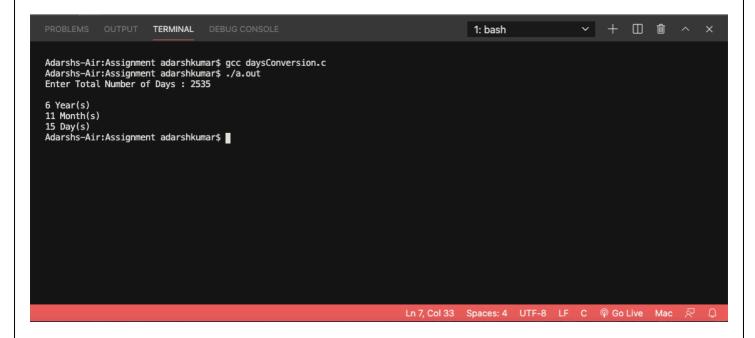
Output:-

3. Write a C program that read 5 numbers and sum of all odd values between them.

Solution: -

```c
#include<stdio.h>
int main(){
    int a,sum=0;
    printf("Enter First Number : ");
    scanf("%d",&a);
    a % 2 != 0 ? sum += a : sum ;
    printf("\nEnter Second Number : ");
    scanf("%d",&a);
    a % 2 != 0 ? sum += a : sum ;
    printf("\nEnter Third Number : ");
    scanf("%d",&a);
    a % 2 != 0 ? sum += a : sum ;
    printf("\nEnter Fourth Number : ");
    scanf("%d",&a);
    a % 2 != 0 ? sum += a : sum ;
    printf("\nEnter Fifth Number : ");
    scanf("%d",&a);
    a % 2 != 0 ? sum += a : sum ;
    printf("\nSum Of All Odd Number : %d\n",sum);
    return 0;
}
```
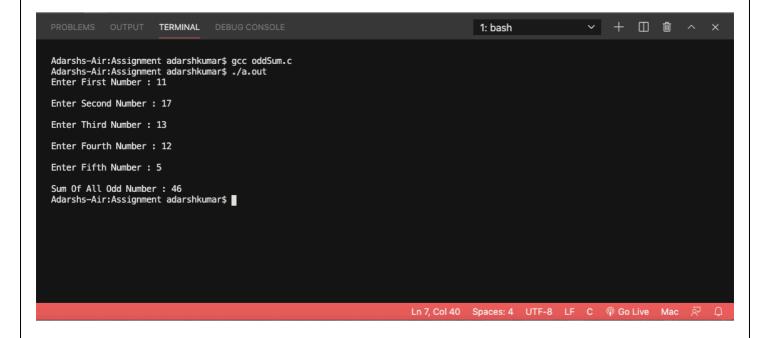
Output:-

```
PROBLEMS   OUTPUT   TERMINAL   DEBUG CONSOLE                1: bash

Adarshs-Air:Assignment adarshkumar$ gcc oddSum.c
Adarshs-Air:Assignment adarshkumar$ ./a.out
Enter First Number : 11

Enter Second Number : 17

Enter Third Number : 13

Enter Fourth Number : 12

Enter Fifth Number : 5

Sum Of All Odd Number : 46
Adarshs-Air:Assignment adarshkumar$

                                  Ln 7, Col 40   Spaces: 4   UTF-8   LF   C   Go Live   Mac
```

4. Write a C program that reads two integers and checks whether they are multiplied or not.

Solution: -

```c
1. #include<stdio.h>
2. int main(){
3.
4.      int x,y;
5.
6.      printf("Enter First Number : ");
7.      scanf("%d",&x);
8.      printf("\nEnter Second Number : ");
9.      scanf("%d",&y);
10.
11.      if (x % y == 0){
12.          printf("\nMultiplied !!!\n");
13.      }
14.      else{
15.          printf("\nNot Multiplied !!!\n");
16.      }
17.
18.
```

Output:-

```
PROBLEMS    OUTPUT    TERMINAL    DEBUG CONSOLE                    1: bash          +  ▢  🗑  ∧  ✕

Adarshs-Air:Assignment adarshkumar$ gcc multiple.c
Adarshs-Air:Assignment adarshkumar$ ./a.out
Enter First Number : 15

Enter Second Number : 5

Multiplied !!!
Adarshs-Air:Assignment adarshkumar$ ▮




                                         Ln 7, Col 20   Spaces: 4   UTF-8   LF   C   📡 Go Live   Mac   ⧉  🔔
```

5. Write a C program that reads an integer between 1 and 12 and print the month of the year in English.

Solution: -

```c
1. #include<stdio.h>
2. int main(){
3.     int a;
4.     printf("Input a number between 1 to 12 to get the month name : ");
5.     scanf("%d",&a);
6.     if (a == 1){
7.         printf("\nJanuary\n");
8.     }
9.     else if (a == 2){
10.         printf("\nFebruary\n");
11.     }
12.     else if (a == 3){
13.         printf("\nMarch\n");
14.     }
15.     else if (a == 4){
16.         printf("\nApril\n");
17.     }
18.     else if (a == 5){
19.         printf("\nMay\n");
20.     }
21.     else if (a == 6){
22.         printf("\nJune\n");
23.     }
24.     else if (a == 7){
25.         printf("\nJuly\n");
26.     }
27.     else if (a == 8){
28.         printf("\nAugust\n");
29.     }
30.     else if (a == 9){
31.         printf("\nSeptember\n");
32.     }
33.     else if (a == 10){
34.         printf("\nOctober\n");
35.     }
36.     else if (a == 11){
37.         printf("\nNovember\n");
38.     }
39.     else if (a == 12){
40.         printf("\nDecember\n");
41.     }
42.     else{
43.         printf("\nInvalid Input !!!\n");
44.     }
45.
46.     return 0;
47. }
```

Output:-

```
PROBLEMS   OUTPUT   TERMINAL   DEBUG CONSOLE                    1: bash

Adarshs-Air:Assignment adarshkumar$ gcc months.c
Adarshs-Air:Assignment adarshkumar$ ./a.out
Input a number between 1 to 12 to get the month name : 9

September
Adarshs-Air:Assignment adarshkumar$
```

6. Write a C program that read 5 numbers and counts the number of positive numbers and negative numbers.

Solution: -

```c
1. #include<stdio.h>
2. int main(){
3.     int a,pSum = 0,nSum = 0;
4.     printf("Enter First Number : ");
5.     scanf("%d",&a);
6.     if (a > 0){
7.         pSum += 1;
8.     }
9.     else{
10.        nSum += 1;
11.     }
12.    printf("\nEnter Second Number : ");
13.    scanf("%d",&a);
14.    if (a > 0){
15.        pSum += 1;
16.    }
17.    else{
18.        nSum += 1;
19.    }
20.    printf("\nEnter Third Number : ");
21.    scanf("%d",&a);
22.    if (a > 0){
23.        pSum += 1;
24.    }
25.    else{
26.        nSum += 1;
27.    }
28.    printf("\nEnter Fourth Number : ");
29.    scanf("%d",&a);
30.    if (a > 0){
31.        pSum += 1;
32.    }
33.    else{
34.        nSum += 1;
35.    }
36.    printf("\nEnter Fifth Number : ");
37.    scanf("%d",&a);
38.    if (a > 0){
39.        pSum += 1;
40.    }
41.    else{
42.        nSum += 1;
43.    }
44.    printf("\nNumber of Positive Numbers : %d\n",pSum);
45.    printf("\nNumber of Negative Numbers : %d\n",nSum);
46.    return 0;
47. }
```

Output:-

```
PROBLEMS   OUTPUT   TERMINAL   DEBUG CONSOLE                    1: bash

Adarshs-Air:Assignment adarshkumar$ gcc positiveNum.c
Adarshs-Air:Assignment adarshkumar$ ./a.out
Enter First Number : 5

Enter Second Number : -4

Enter Third Number : 10

Enter Fourth Number : 15

Enter Fifth Number : -1

Number of Positive Numbers : 3

Number of Negative Numbers : 2
Adarshs-Air:Assignment adarshkumar$
```

```
Ln 47, Col 2 (861 selected)   Spaces: 4   UTF-8   LF   C   Go Live   Mac
```

7. Write a C program that read 5 numbers and counts the number of positive numbers and print the average of all positive values.

Solution: -

```c
1. #include<stdio.h>
2. int main(){
3.     int a,pSum = 0,Sum = 0;
4.     printf("Enter First Number : ");
5.     scanf("%d",&a);
6.     if (a > 0){
7.         pSum += 1;
8.         Sum += a;
9.     }
10.     printf("\nEnter Second Number : ");
11.     scanf("%d",&a);
12.     if (a > 0){
13.         pSum += 1;
14.         Sum += a;
15.     }
16.     printf("\nEnter Third Number : ");
17.     scanf("%d",&a);
18.     if (a > 0){
19.         pSum += 1;
20.         Sum += a;
21.     }
22.     printf("\nEnter Fourth Number : ");
23.     scanf("%d",&a);
24.     if (a > 0){
25.         pSum += 1;
26.         Sum += a;
27.     }
28.     printf("\nEnter Fifth Number : ");
29.     scanf("%d",&a);
30.     if (a > 0){
31.         pSum += 1;
32.         Sum += a;
33.     }
34.     printf("\nNumber of Positive Numbers : %d\n",pSum);
35.     printf("\nNumber of Negative Numbers : %.2lf\n",Sum/(float)pSum);
36.     return 0;
37. }
```

Output:-

```
PROBLEMS   OUTPUT   TERMINAL   DEBUG CONSOLE                                1: bash          +  ⊡  🗑  ∧  ✕

Adarshs-Air:Assignment adarshkumar$ gcc positiveAvg.c
Adarshs-Air:Assignment adarshkumar$ ./a.out
Enter First Number : 5

Enter Second Number : 8

Enter Third Number : 10

Enter Fourth Number : -5

Enter Fifth Number : 25

Number of Positive Numbers : 4

Number of Negative Numbers : 12.00
Adarshs-Air:Assignment adarshkumar$ █

                                Ln 13, Col 19   Spaces: 4   UTF-8   LF   C   🌐 Go Live   Mac   ⅋  🔔
```

8. Write a C program that read 5 numbers and sum of all odd values between them.

Solution: -

```c
1. #include<stdio.h>
2. int main(){
3.     int a,sum=0;
4.     printf("Enter First Number : ");
5.     scanf("%d",&a);
6.     a % 2 != 0 ? sum += a : sum ;
7.     printf("\nEnter Second Number : ");
8.     scanf("%d",&a);
9.     a % 2 != 0 ? sum += a : sum ;
10.     printf("\nEnter Third Number : ");
11.     scanf("%d",&a);
12.     a % 2 != 0 ? sum += a : sum ;
13.     printf("\nEnter Fourth Number : ");
14.     scanf("%d",&a);
15.     a % 2 != 0 ? sum += a : sum ;
16.     printf("\nEnter Fifth Number : ");
17.     scanf("%d",&a);
18.     a % 2 != 0 ? sum += a : sum ;
19.     printf("\nSum Of All Odd Number : %d\n",sum);
20.     return 0;
21. }
```

Output:-

```
PROBLEMS    OUTPUT    TERMINAL    DEBUG CONSOLE                                1: bash

Adarshs-Air:Assignment adarshkumar$ gcc oddSum.c
Adarshs-Air:Assignment adarshkumar$ ./a.out
Enter First Number : 5

Enter Second Number : 7

Enter Third Number : 9

Enter Fourth Number : 10

Enter Fifth Number : 13

Sum Of All Odd Number : 34
Adarshs-Air:Assignment adarshkumar$
```

Ln 7, Col 40   Spaces: 4   UTF-8   LF   C   Go Live   Mac

9. Write a program that converts Centigrade to Fahrenheit.

Solution: -

```
1. #include<stdio.h>
2. int main(){
3.     float c,f;
4.     printf("Enter Temperature (in Centigrade) : ");
5.     scanf("%f",&c);
6.     f = (9*c + (32 * 5))/5;
7.     printf("\n%f degrees Fahrenheit.\n",f);
8.     return 0;
9. }
```
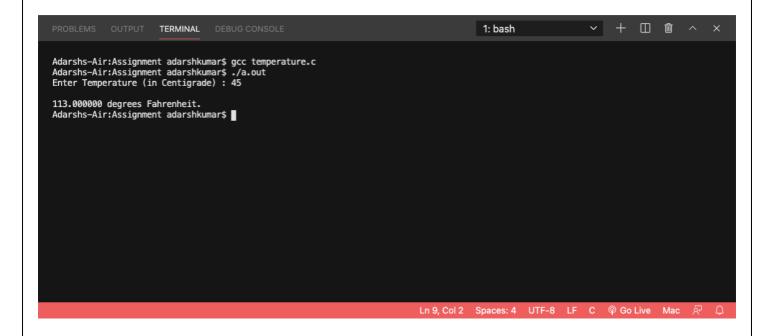
Output:-

```
PROBLEMS   OUTPUT   TERMINAL   DEBUG CONSOLE                    1: bash

Adarshs-Air:Assignment adarshkumar$ gcc temperature.c
Adarshs-Air:Assignment adarshkumar$ ./a.out
Enter Temperature (in Centigrade) : 45

113.000000 degrees Fahrenheit.
Adarshs-Air:Assignment adarshkumar$ █
```

10. Write a C program that converts kilometers per hour to miles per hour.
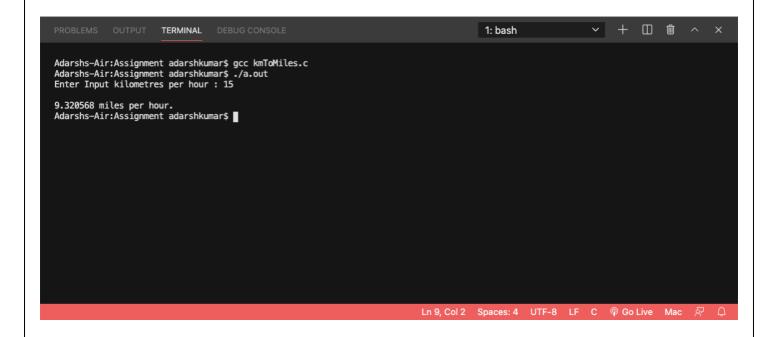
Solution: -

```c
1. #include<stdio.h>
2. int main(){
3.     float km;
4.     printf("Enter Input kilometres per hour : ");
5.     scanf("%f",&km);
6.     printf("\n%f miles per hour.\n",km*0.6213712);
7.     return 0;
8. }
```

Output:-

```
PROBLEMS   OUTPUT   TERMINAL   DEBUG CONSOLE                    1: bash        ∨   +  ⊡  🗑  ∧  ×

Adarshs–Air:Assignment adarshkumar$ gcc kmToMiles.c
Adarshs–Air:Assignment adarshkumar$ ./a.out
Enter Input kilometres per hour : 15

9.320568 miles per hour.
Adarshs–Air:Assignment adarshkumar$ ▊

                                          Ln 9, Col 2   Spaces: 4   UTF-8   LF   C   ◉ Go Live   Mac  ⧉ ⌂
```

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

Solution: -

```c
1. #include<stdio.h>
2. int main(){
3.      int a,b;
4.
5.      printf("Enter 1st Number : ");
6.      scanf("%d",&a);
7.      printf("Enter 2nd Number : ");
8.      scanf("%d",&b);
9.
10.     if (a == 30 || b == 30 || a + b == 30 ){
11.         printf("\nTrue !!!\n");
12.     }
13.     else{
14.         printf("\nFalse\n");
15.     }
16.
17.     return 0;
18. }
```

Output:-

12. Write a C program that takes hours and minutes as input, and calculates the total number of minutes.

Solution: -

```c
1. #include<stdio.h>
2. int main(){
3.     int hr,min;
4.     printf("Enter Hour(s) : ");
5.     scanf("%d",&hr);
6.     printf("\nEnter Minute(s) : ");
7.     scanf("%d",&min);
8.     printf("\nTotal Number of Minute(s) : %d\n",(hr * 60
   + min));
9.     return 0;
10. }
```

Output:-

13. Write a C program to integral quotient and remainder of a division.

Solution: -

```c
1. #include<stdio.h>
2. int main(){
3.     int x,y;
4.     printf("Enter Numerator : ");
5.     scanf("%d",&x);
6.     printf("Enter Denominator : ");
7.     scanf("%d",&y);
8.     printf("\nQuotient = %d, Remainder = %d\n",x/y,x%y);
9.     return 0;
10. }
```

Output:-

```
PROBLEMS   OUTPUT   TERMINAL   DEBUG CONSOLE                          1: bash          ∨   +  ⊓  🗑  ∧  ✕

The default interactive shell is now zsh.
To update your account to use zsh, please run `chsh -s /bin/zsh`.
For more details, please visit https://support.apple.com/kb/HT208050.
Adarshs-Air:C adarshkumar$ cd Assignment/
Adarshs-Air:Assignment adarshkumar$ gcc qRemainder.c
Adarshs-Air:Assignment adarshkumar$ ./a.out
Enter Numerator : 2500
Enter Denominator : 235

Quotient = 10, Remainder = 150
Adarshs-Air:Assignment adarshkumar$ ▊

                                Ln 9, Col 14   Spaces: 4   UTF-8   LF   C   📶 Go Live   Mac   ⊁  ⏻
```

14. 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.

Solution: -

```
1.  #include<stdio.h>
2.  int main(){
3.      int x,y;
4.      printf("Enter First Number : ");
5.      scanf("%d",&x);
6.      printf("Enter Second Number : ");
7.      scanf("%d",&y);
8.      if (x+y >= 10 && x+y <= 20){
9.          printf("Inclusive Sum : 30\n");
10.     }
11.     else{
12.         printf("Sum is : %d\n",x+y);
13.     }
14.     return 0;
15. }
```
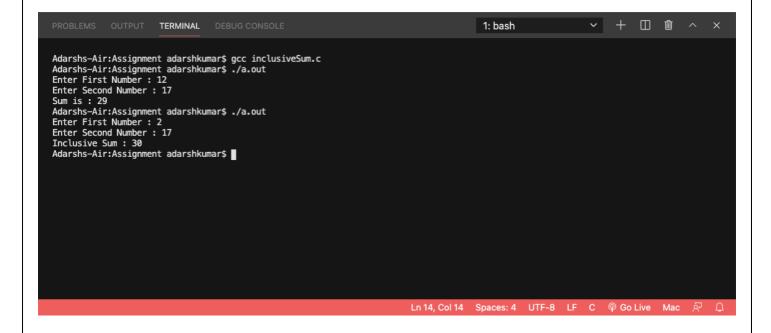
Output:-


```
Adarshs-Air:Assignment adarshkumar$ gcc inclusiveSum.c
Adarshs-Air:Assignment adarshkumar$ ./a.out
Enter First Number : 12
Enter Second Number : 17
Sum is : 29
Adarshs-Air:Assignment adarshkumar$ ./a.out
Enter First Number : 2
Enter Second Number : 17
Inclusive Sum : 30
Adarshs-Air:Assignment adarshkumar$
```

15. Write a C program that accept two integers and return true if either one is 5 or their sum or difference is 5.

Solution: -

```c
1. #include<stdio.h>
2. int main(){
3.     int x,y;
4.     printf("Enter First Number : ");
5.     scanf("%d",&x);
6.     printf("Enter Second Number : ");
7.     scanf("%d",&y);
8.     if (x == 5 || y == 5 || x + y == 5 || x - y == 5){
9.         printf("\nTrue !!!\n");
10.     }
11.     else{
12.         printf("\nFalse !!!\n");
13.     }
14.
15.     return 0;
16. }
```

Output:-

```
PROBLEMS    OUTPUT    TERMINAL    DEBUG CONSOLE                          1: bash

Adarshs-Air:Assignment adarshkumar$ gcc sumTrue.c
Adarshs-Air:Assignment adarshkumar$ ./a.out
Enter First Number : 5
Enter Second Number : 4

True !!!
Adarshs-Air:Assignment adarshkumar$ ./a.out
Enter First Number : 4
Enter Second Number : 3

False !!!
Adarshs-Air:Assignment adarshkumar$
```

Ln 3, Col 5 (123 selected)   Spaces: 4   UTF-8   LF   C   Go Live   Mac

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

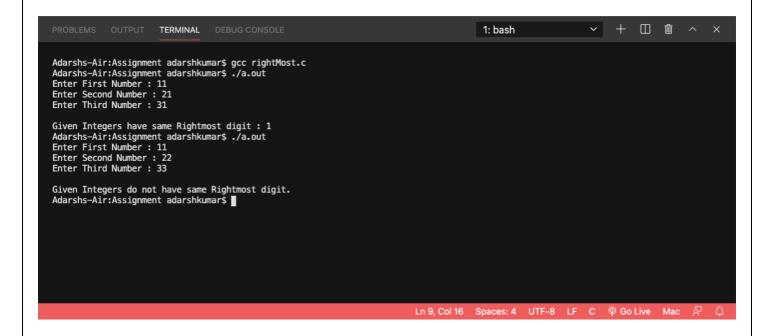Solution: -

```c
1. #include<stdio.h>
2. int main(){
3.     int x,y,z;
4.     printf("Enter First Number : ");
5.     scanf("%d",&x);
6.     x = x % 10;
7.     printf("Enter Second Number : ");
8.     scanf("%d",&y);
9.     y = y % 10;
10.    printf("Enter Third Number : ");
11.    scanf("%d",&z);
12.    z = z % 10;
13.
14.    if (x == y == z){
15.        printf("\nGiven Integers have same Rightmost digit : %d\n",x);
16.    }
17.    else
18.    {
19.        printf("\nGiven Integers do not have same Rightmost digit.\n");
20.    }
21.
22.    return 0;
23. }
```

Output:-

```
PROBLEMS    OUTPUT    TERMINAL    DEBUG CONSOLE                     1: bash

Adarshs-Air:Assignment adarshkumar$ gcc rightMost.c
Adarshs-Air:Assignment adarshkumar$ ./a.out
Enter First Number : 11
Enter Second Number : 21
Enter Third Number : 31

Given Integers have same Rightmost digit : 1
Adarshs-Air:Assignment adarshkumar$ ./a.out
Enter First Number : 11
Enter Second Number : 22
Enter Third Number : 33

Given Integers do not have same Rightmost digit.
Adarshs-Air:Assignment adarshkumar$

                          Ln 9, Col 16   Spaces: 4   UTF-8   LF   C   Go Live   Mac
```

17. 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.
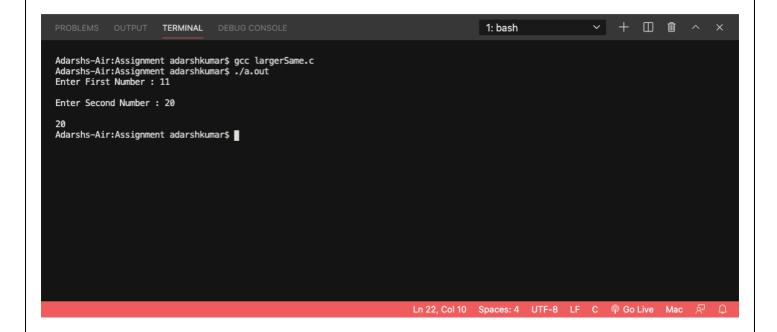
Solution: -

```c
1. #include<stdio.h>
2. int main(){
3.      int x,y;
4.      printf("Enter First Number : ");
5.      scanf("%d",&x);
6.      printf("\nEnter Second Number : ");
7.      scanf("%d",&y);
8.      if (x > y){
9.              printf("\n%d\n",x);
10.      }
11.     else{
12.             printf("\n%d\n",y);
13.      }
14.
15.     if (x == y){
16.         printf("\n0\n");
17.      }
18.     else if(x % 5 == y % 5)
19.      {
20.         if (x > y){
21.             printf("\n%d\n",y);
22.          }
23.         else{
24.             printf("\n%d\n",x);
25.          }
26.
27.      }
28.
29.      return 0;
30. }
```

Output:-

```
PROBLEMS    OUTPUT    TERMINAL    DEBUG CONSOLE                    1: bash

Adarshs-Air:Assignment adarshkumar$ gcc largerSame.c
Adarshs-Air:Assignment adarshkumar$ ./a.out
Enter First Number : 11

Enter Second Number : 20

20
Adarshs-Air:Assignment adarshkumar$
```

Ln 22, Col 10   Spaces: 4   UTF-8   LF   C   Go Live   Mac

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

Solution: -

```c
1. #include<stdio.h>
2. int main(){
3.     int x,y,z;
4.     printf("Enter First Number : ");
5.     scanf("%d",&x);
6.     printf("Enter Second Number : ");
7.     scanf("%d",&y);
8.     printf("Enter Third Number : ");
9.     scanf("%d",&z);
10.
11.   if (x + y == z){
12.       printf("\nPossible !!!\n");
13.   }
14.   else{
15.       printf("\nNot Possible !!!\n");
16.   }
17.
18.     return 0;
19. }
```

Output:-

```
PROBLEMS    OUTPUT    TERMINAL    DEBUG CONSOLE                          1: bash              +  ⊡  🗑  ∧  ×

Adarshs-Air:Assignment adarshkumar$ gcc checkIntegerSum.c
Adarshs-Air:Assignment adarshkumar$ ./a.out
Enter First Number : 1
Enter Second Number : 2
Enter Third Number : 3

Possible !!!
Adarshs-Air:Assignment adarshkumar$ ./a.out
Enter First Number : 4
Enter Second Number : 5
Enter Third Number : 6

Not Possible !!!
Adarshs-Air:Assignment adarshkumar$ █

                                              Ln 13, Col 6   Spaces: 4   UTF-8   LF   C   ⊘ Go Live   Mac   ⊗  ۵
```

19. 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.

Solution: -

```c
1. #include<stdio.h>
2. int main(){
3.     int x,y,z;
4.     printf("Enter First Number : ");
5.     scanf("%d",&x);
6.     printf("Enter Second Number : ");
7.     scanf("%d",&y);
8.     printf("Enter Third Number : ");
9.     scanf("%d",&z);
10.
11.    if (y > x && z > y){
12.        printf("\nYes : 1\n");
13.    }
14.    else {
15.        printf("\nNo : 0\n");
16.    }
17.    return 0;
18.
```

Output: -

```
PROBLEMS   OUTPUT   TERMINAL   DEBUG CONSOLE                    1: bash

Adarshs-Air:Assignment adarshkumar$ gcc larger3.c
Adarshs-Air:Assignment adarshkumar$ ./a.out
Enter First Number : 1
Enter Second Number : 2
Enter Third Number : 3

Yes : 1
Adarshs-Air:Assignment adarshkumar$ ./a.out
Enter First Number : 4
Enter Second Number : 5
Enter Third Number : 6

Yes : 1
Adarshs-Air:Assignment adarshkumar$
```

20. 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.

Solution: -

```c
1. #include<stdio.h>
2. int main(){
3.     int x,y;
4.     printf("Enter First Number : ");
5.     scanf("%d",&x);
6.     printf("Enter Second Number : ");
7.     scanf("%d",&y);
8.     if (x / 10 == y / 10 || x % 10 == y % 10){
9.         if (x / 10 == y / 10){
10.             printf("\nDigit %d Appear in Both
    Number.\n",x / 10);
11.         }
12.         else
13.         {
14.             printf("\nDigit %d Appear in Both
    Number.\n",x % 10);
15.         }
16.     }
17.     else
18.     {
19.         printf("\nNo Digit Appear in Both.\n");
20.     }
21.
22.     return 0;
23. }
```
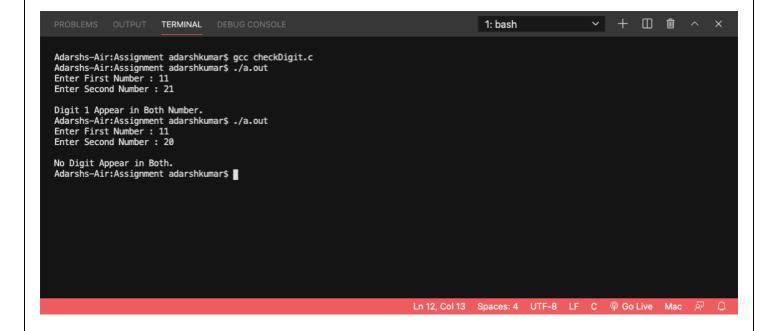
Output:-

```
PROBLEMS   OUTPUT   TERMINAL   DEBUG CONSOLE                    1: bash            ∨   +  ⊡  🗑  ∧  ×

Adarshs-Air:Assignment adarshkumar$ gcc checkDigit.c
Adarshs-Air:Assignment adarshkumar$ ./a.out
Enter First Number : 11
Enter Second Number : 21

Digit 1 Appear in Both Number.
Adarshs-Air:Assignment adarshkumar$ ./a.out
Enter First Number : 11
Enter Second Number : 20

No Digit Appear in Both.
Adarshs-Air:Assignment adarshkumar$ ▊

                          Ln 12, Col 13   Spaces: 4   UTF-8   LF   C   Go Live   Mac
```

Student Sign: _____   Teacher's Sign: _____