UE24CS151B (LAB) : Problem Solving With C integrated with lab Week-4 Solutions

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Code-1:

Lab week 4 > C Q1.c > ...

```c
#include <stdio.h>
#include <stdlib.h>
void main()
{
    int input, x, sum=0, product=1, temp, digit, count=0;
    printf("Enter number: ");
    scanf("%d", &input);
    temp = input;
    while(temp != 0) {
        digit = temp % 10;
        sum += digit;
        product *= digit;
        count++;
        temp /= 10;
    }
    if(sum + product == input) {
        printf("Number of digits: %d\n", count);
        printf("The number %d satisfies the condition\n", input);
    } else {
        printf("Number of digits: %d\n", count);
    }
}
```

Solution-1:

```
PS D:\Professional\Technical Projects\C>  & 'c:\Users\arunh\.cursor\extensi
icrosoft-MIEngine-Out-4hax0fdt.40g' '--stderr=Microsoft-MIEngine-Error-41ms
Enter number: 19
Number of digits: 2
The number 19 satisfies the condition
```

Code-2:

Lab week 4 > C Q2.c > ...

```c
#include <stdlib.h>
#include <stdio.h>
#include <math.h>
void main()
{
    int input, x, p=0;
    printf("Enter to check if the given number is a dudley number or not:");
    scanf("%d", &input);
    x=input;
    while(x>0)
    {
        p+=x%10;
        x=x/10;
    }
    if(input==pow(p,3))
        printf("%d is a dudley number", input);
    else
        printf("%d is not a dudley number", input);
}
```

Solution-2:

```
PS D:\Professional\Technical Projects\C>  & 'c:\Users\arunh\.cursor\extensions\ms-
icrosoft-MIEngine-Out-fm1wevjb.wfw' '--stderr=Microsoft-MIEngine-Error-g3z4fhnn.fi
Enter to check if the given number is a dudley number or not:512
512 is a dudley number
```

Code-3:

Lab week 4 > C Q3.c > ...

```c
#include <stdio.h>
#include <stdlib.h>
void main()
{
    int lower, upper;
    printf("Enter lower limit:");
    scanf("%d", &lower);
    printf("Enter uppper limit");
    scanf("%d", &upper);
    if(lower>upper){
        lower = lower + upper;
        upper = lower - upper;
        lower = lower - upper;
    }
    for(int i = lower; i <= upper; i++) {
        int isPrime = 1;
        if(i <= 1) {
            isPrime = 0;
        }
        for(int j = 2; j <= i/2; j++) {
            if(i % j == 0) {
                isPrime = 0;
                break;
            }
        }
        if(isPrime) {
            printf("%d ", i);
        }
    }
}
```

Solution-3:

```
PS D:\Professional\Technical Projects\C>  & 'c:\Users\arunh\.cursor'
icrosoft-MIEngine-Out-4clksgbp.ksk' '--stderr=Microsoft-MIEngine-Er
Enter lower limit:12
Enter uppper limit34
13 17 19 23 29 31
```

Code-4:

Lab week 4 > C Q4.c > ...

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

void main() {
    int input, prev = 0, curr = 1, next = 1;
    printf("Enter a number to find closest fibonacci number:");
    scanf("%d", &input);

    while (next <= input) {
        prev = curr;
        curr = next;
        next = prev + curr;
    }

    if (abs(input - curr) < abs(input - next)) {
        printf("Closest fibonacci number to %d is %d\n", input, curr);
    } else {
        printf("Closest fibonacci number to %d is %d\n", input, next);
    }
}
```

Solution-4:

```
PS D:\Professional\Technical Projects\C>  & 'c:\Users\arunh
icrosoft-MIEngine-Out-tibzhhri.bhg' '--stderr=Microsoft-MIE
Enter a number to find closest fibonacci number:34
Closest fibonacci number to 34 is 34
```