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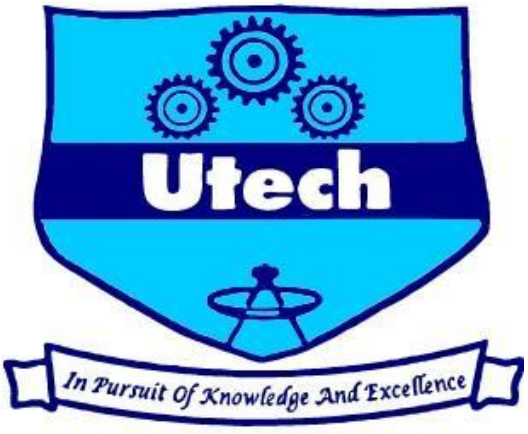

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Department: Department of IT

Course: BCA

Subject: Programming For Problem Solving

PCA No: 1

Reg. No: 223001010607

Program Name - Q1. Write a program in C to check whether a number is Perfect or not.

Code:-

```
#include <stdio.h>

int main()
{
    int num, i, sum = 0;

    printf("Enter any number: ");
    scanf("%d", &num);

    for (i = 1; i < num; i++)
    {
        if (num % i == 0)
            sum += i;
    }

    if (num == sum)
        printf("%d is a Perfect Number", num);
    else
        printf("%d is not a Perfect Number", num);

    return 0;
}
```

output:-

```
Enter any number: 28
28 is a Perfect  Number
```

```
Enter any number: 564
564 is not a Perfect  Number
```

Program Name - Q2. Write a program in C to check whether a number is Prime or not.

Code:-

```
#include <stdio.h>

int main()
{
    int num, i;

    printf("Enter a number: ");
    scanf("%d", &num);

    for (i = 2; i <= num; i++)
    {
        if (num % i == 0)
            break;
    }

    if (num == i)
        printf("This is Prime Number");
    else
        printf("This is not Prime Number");

    return 0;
}
```

output:-

```
Enter a number: 17
This is Prime Number
```

```
Enter a number: 56
This is not Prime Number
```

Program Name - Q3. Write a program in C to print all prime numbers from 1 to n, n will be taken as user input.

Code:-

```
#include <stdio.h>

int main()
{
    int num, i, j, count;

    printf("Enter the range: ");
    scanf("%d", &num);

    printf("The prime numbers in between the range 1 to %d:\n", num);

    for (i = 1; i <= num; i++)
    {
        count = 0;
        for (j = 2; j <= i / 2; j++)
        {
            if (i % j == 0)
            {
                count++;
                break;
            }
        }
        if (count == 0 && i != 1)
            printf("%d ", i);
    }

    return 0;
}
```

output:-

```
Enter the range: 50
The prime numbers in between the range 1 to 50:
2 3 5 7 11 13 17 19 23 29 31 37 41 43 47
```

Program Name - Q4. Write a program to print all even and odd numbers separately from 1 to n, n will be taken as user input.

Code:-

```
#include <stdio.h>

int main()
{
    int n, i;

    printf("Enter the range: ");
    scanf("%d", &n);

    printf("All even and odd numbers separately from 1 to %d:", n);

    printf("\nEven: ");
    for (i = 1; i <= n; i++)
    {
        if (i % 2 == 0)
            printf("%d ", i);
    }

    printf("\nOdd: ");
    for (i = 1; i <= n; i++)
    {
        if (i % 2 != 0)
            printf("%d ", i);
    }

    return 0;
}
```

output:-

```
Enter the range: 23
All even and odd numbers separately from 1 to 23:
Even: 2 4 6 8 10 12 14 16 18 20 22
Odd: 1 3 5 7 9 11 13 15 17 19 21 23
```

Program Name - Q5. Write a program in C to check whether a number is Palindrome or not.

Code:-

```
#include <stdio.h>

int main()
{
    int num, rem, temp, rev = 0;

    printf("Enter a number: ");
    scanf("%d", &num);

    temp = num;

    while (num != 0)
    {
        rem = num % 10;
        rev = rev * 10 + rem;
        num = num / 10;
    }

    if (temp == rev)
        printf("This is Palindrome Number");
    else
        printf("This is not Palindrome Number");

    return 0;
}
```

output:-

```
Enter a number: 121
This is Palindrome Number
```

```
Enter a number: 6456
This is not Palindrome Number
```

Program Name - Q6. Write a program to check whether a number is Armstrong or not.

Code:-

```
#include <stdio.h>

int main()
{
    int num, rem, temp, sum = 0;

    printf("Enter a number: ");
    scanf("%d", &num);

    temp = num;

    while (num != 0)
    {
        rem = num % 10;
        sum = sum + (rem * rem * rem);
        num = num / 10;
    }

    if (temp == sum)
        printf("This is Armstrong Number");
    else
        printf("This is not Armstrong Number");

    return 0;
}
```

output:-

```
Enter a number: 371
This is Armstrong Number
```

```
Enter a number: 543
This is not Armstrong Number
```

Program Name - Q7. Write a program to find the sum of even and odd digits of a number separately.

Code:-

```
#include <stdio.h>

int main()
{
    int num, rem, even = 0, odd = 0;

    printf("Enter a number: ");
    scanf("%d", &num);

    while (num != 0)
    {
        rem = num % 10;

        if (rem % 2 == 0)
            even += rem;
        else
            odd += rem;

        num = num / 10;
    }

    printf("Sum of Even Digits = %d\n", even);
    printf("Sum of Odd Digits = %d\n", odd);

    return 0;
}
```

output:-

```
Enter a number: 47982
Sum of Even Digits = 14
Sum of Odd Digits = 16
```

```
Enter a number: 4534
Sum of Even Digits = 8
Sum of Odd Digits = 8
```

Program Name - Q8. Write a program to find the sum of even and odd place digits of a number separately.

Code:-

```
#include <stdio.h>

int main()
{
    int num, rem, i, rev = 0, even = 0, odd = 0;

    printf("Enter a number: ");
    scanf("%d", &num);

    while (num != 0)
    {
        rev = (rev * 10) + (num % 10);
        num = num / 10;
    }

    num = rev;

    for (i = 1; num != 0; i++)
    {
        rem = num % 10;

        if (i % 2 == 0)
            even += rem;
        else
            odd += rem;

        num = num / 10;
    }

    printf("Sum of Even Placed Digits = %d\n", even);
    printf("Sum of Odd Placed Digits = %d\n", odd);

    return 0;
}
```

output:-

```
Enter a number: 457892
Sum of Even Placed Digits = 15
Sum of Odd Placed Digits = 20
```

Program Name - Q9. Write a program to print Fibonacci series upto nth Term.

Code:-

```
#include <stdio.h>

int main()
{
    int n, i, prepreNum = 0, preNum = 1, currNum;

    printf("Enter the number of terms: ");
    scanf("%d", &n);

    printf("Fibonacci Series: ");

    for (i = 1; i <= n; i++)
    {
        printf("%d, ", prepreNum);
        currNum = prepreNum + preNum;
        prepreNum = preNum;
        preNum = currNum;
    }

    return 0;
}
```

output:-

```
Enter the number of terms: 13
Fibonacci Series: 0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144,
```

Program Name - Q10. Write a program to print the following pattern:

```
1
2  3
4  5  6
7  8  9  10
```

Code:-

```
#include <stdio.h>

int main()
{
    int i, j, k = 1;

    for (i = 1; i <= 4; i++)
    {
        for (j = 1; j <= 4; j++)
        {
            if (j >= 1 && j <= i)
                printf(" %d ", k++);
            else
                printf("   ");
        }
        printf("\n");
    }

    return 0;
}
```

output:-

```
1
2  3
4  5  6
7  8  9  10
```