

PR-6: UDF:-

1. Write a C program to print your introduction using type-1 function.

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

```
void intro() {
```

```
    printf("Amit Patel\n");
```

```
    printf("Surat\n");
```

```
    printf("1465655353\n");
```

```
}
```

```
int main() {
```

```
    printf("*****\n");
```

```
    intro();
```

```
    printf("*****\n");
```

```
    intro();
```

```
    printf("*****\n");
```

```
    intro();
```

```
    printf("*****\n");
```

```
    return 0;
```

```
}
```

Output:-

```
*****  
Amit Patel  
Surat  
1465655353  
*****  
Amit Patel  
Surat  
1465655353  
*****  
Amit Patel  
Surat  
1465655353  
*****
```

2. Write a C program to find area of circle using type-2 function.

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

```
float areaofcircl(float r) {  
  
    float area;  
  
    area = 3.14 * r * r;  
  
    printf("Area of circle: %f\n", area);
```

```
}
```

```
int main() {  
  
    areaofcircl(5);  
  
    areaofcircl(20);  
  
    return 0;  
}
```

Output:-

```
Area of circle: 78.500000
Area of circle: 1256.000000
```

3. Write a C program to find area of rectangle using type-3 function.

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

```
float areaofrectangle() {
    float l, h, area;

    printf("Please enter the lenght and height of rectangle: ");
    scanf("%f %f", &l, &h);

    area = l * h;

    return area;
}

int main() {
    float res, res1;

    res = areaofrectangle();
    printf("Area of rectangle: %.2f\n", res);

    res1 = areaofrectangle();
    printf("Area of rectangle: %.2f\n", res1);

    return 0;
}
```

Output:-

```
Please enter the lenght and height of rectangle: 5 6
Area of rectangle: 30.00
Please enter the lenght and height of rectangle: 55 8
Area of rectangle: 440.00
```

4. Write a C program to create a calculator using type-4 function.

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

```
int add(int a,int b) {
```

```
    int ans;
```

```
    ans = a + b;
```

```
    return ans;
```

```
}
```

```
int sub(int a,int b) {
```

```
    int ans;
```

```
    ans = a - b;
```

```
    return ans;
```

```
}
```

```
int mul(int a,int b) {
```

```
    int ans;
```

```
    ans = a * b;
```

```
    return ans;
```

```
}
```

```
int div(int a,int b) {
```

```
    int ans;
```

```
    ans = a / b;
```

```
    return ans;
```

```
}
```

```
int main() {
```

```
    int a, b, res;
```

```
    char op;
```

```
    printf("Please enter any two Values: ");
```

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

```
    printf("Please enter Operators: ");
```

```
    scanf(" %c", &op);
```

```
    switch (op) {
```

```
        case '+':
```

```
            res = add(a, b);
```

```
            break;
```

```
        case '-':
```

```
            res = sub(a, b);
```

```
            break;
```

```
        case '*':
```

```

        res = mul(a, b);

        break;

    case '/':

        res = div(a, b);

        break;

    default:

        printf("Invalid input");

        break;

}

printf("Ans is: %d", res);

return 0;

}

```

Output:-

```

Please enter any two Values: 5 8
Please enter Operators: +
Ans is: 13

```

5. Write a C program to find number is even or odd using type-1 function.

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

```

void oddandeven() {

    int num;

    printf("Please enter of Number");

    scanf("%d", &num);

    if (num % 2 == 0) {

        printf("%d is Even number\n",num);
    }
}

```

```

        } else {

            printf("%d is Odd number\n",num);

        }

    }

int main() {

    oddandeven();

    return 0;

}

```

Output:-

```

Please enter of Number136
136 is Even number

```

6. Write a C program to find average of 4 numbers using type-2 function.

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

```

float Average(float n) {

    float i, avg,sum=0,value;

    for (i=1; i<=n; i++) {

        printf("Please enter any Value:");

        scanf("%f", &value);

        sum = sum + value;

        avg = sum / 4;

    }
}

```

```

        printf("your avg is:%f",avg);
    }

int main() {
    float n;

    printf("enter any number:");

    scanf("%f",&n);

    Average(n);

    return 0;
}

```

Output:-

```

enter any number:5
Please enter any Value:20
Please enter any Value:60
Please enter any Value:10
Please enter any Value:20
Please enter any Value:30
your avg is:35.000000

```

7. Write a C program to find given number is prime or not using type-3 function.

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

```

int prime() {
    int n, i, flag = 0;

    printf("Please enter any number: ");

    scanf("%d", &n);

    if (n > 1) {
        if (n == 2) {

```



```
        printf("%d is prime number", n);
    } else {
        for (i=2; i<n; i++) {
            if (n %i == 0) {
                flag = 1;
                break;
            }
        }

        if (flag == 0) {
            printf("%d is prime number", n);
        } else {
            printf("%d is Not prime number", n);
        }
    }

} else {
    printf("Not decidable");
}

return n;
}

int main() {
    int res, res1;

    res = prime();
    printf("\nResult is: %d", res);

    return 0;
```

```
}
```

Output:-

```
Please enter any number: 5
5 is prime number
Result is: 5
```

8. Write a C program to find given number is Armstrong or not using type-4 function.

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

```
int armstrong(int n) {
```

```
    int i, temp, rem = 1, res = 0;
```

```
    for (i=1; i<=n; i++) {
```

```
        temp = i;
```

```
        while (temp > 0) {
```

```
            rem = temp % 10;
```

```
            res = res + (rem * rem * rem);
```

```
            temp = temp / 10;
```

```
        }
```

```
        if (res == i) {
```

```
            printf("%d is Armstrong\n", i);
```

```
        }
```

```
        res = 0;
```

```
    }
```

```
    return res;
```

```
}
```

```

int main() {
    int ans, n;

    printf("Please enter any number:");

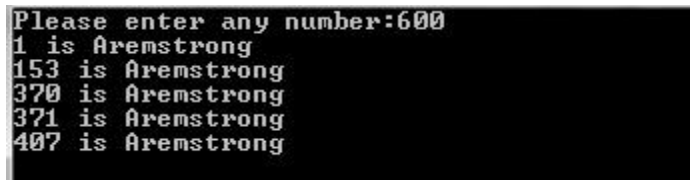
    scanf("%d", &n);

    ans = armstrong(n);

    return 0;
}

```

Output:-



```

Please enter any number:600
1 is Armstrong
153 is Armstrong
370 is Armstrong
371 is Armstrong
407 is Armstrong

```

9. Write a C program to find Sum of all Array Elements by passing array as an argument using User Define Functions.

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

```

int Average(int n, int arr[], int i) {
    float average, sum = 0;

    for (i=0; i<n; i++) {
        sum = sum + arr[i];
        average = sum/n;
    }

    printf("Sum of Average Number is: %.2f", average);
}

```

```

        return average;
    }

int main () {
    int arr[100], n, i, ans;

    printf("Please enter size of an Array: ");
    scanf("%d", &n);

    for (i=0; i<n; i++) {
        printf("Please enter element of array %d: ",i);
        scanf("%d", &arr[i]);
    }

    ans = Average(n, arr, i);

    return 0;
}

```

Output:-

```

Please enter size of an Array: 5
Please enter element of array 0: 20
Please enter element of array 1: 60
Please enter element of array 2: 50
Please enter element of array 3: 55
Please enter element of array 4: 11
Sum of Average Number is: 39.20

```

10. Write a C program to find Length of the String by passing String/ Character Array as an Argument using User Define Functions.

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

```

int FindStringLength(char str[]) {
    int length = 0;

    while (str[length] != '\0') {
        length++;
    }

    return length;
}

int main() {
    char str[100], length = 0;

    printf("Enter a string: ");
    gets(str);

    length = FindStringLength(str);

    printf("Length is:- %d\n", length);

    return 0;
}

```

Output:-

```

Enter a string: dds
Length is:- 3

```

11. Write a C program to find factorial of number using recursion.

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

```

int findfact(int n) {

    if (n > 1) {

        return n * findfact(n - 1);

    } else {

        return 1;

    }

}

int main() {

    int n, ans;

    printf("Please enter of value: ");

    scanf("%d", &n);

    ans = findfact(n);

    printf("Find the fact is: %d", ans);

    return 0;

}

```

Output:-

```

Please enter of value: 5
Find the fact is: 120

```

12-15. Write any four C program that use array and UDF.

12.

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

```
void insert(int n, int i1, int newElement, int arr[]) {  
    int i;  
  
    n++;  
  
    for (i=n-1; i>=i1; i--) {  
        arr[i] = arr[i-1];  
    }  
  
    arr[i1 - 1] = newElement;  
  
    for (i=0; i<n; i++) {  
        printf("%d ", arr[i]);  
    }  
  
}  
  
int main () {  
    int n, i, i1, newElement, arr[100];  
  
    printf("Please enter size of an array: ");  
    scanf("%d", &n);  
  
    for (i=0; i<n; i++) {  
        printf("Please enter value of array: ");  
        scanf("%d", &arr[i]);  
    }  
}
```

```

        printf("Which element so yo need to change?");

        scanf("%d", &i1);


        printf("Enter The New Element?");

        scanf("%d", &newElement);


        insert(n, i1, newElement, arr);


        return 0;

}

```

Output:-

```

Please enter size of an array: 5
Please enter value of array: 20
Please enter value of array: 60
Please enter value of array: 50
Please enter value of array: 40
Please enter value of array: 50
Which element so yo need to change?3
Enter The New Element?90
20 60 90 50 40 50

```

13.

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

```

void nagetive(int arr[], int n, int i) {

        printf("Ans element of array: ");

        for (i=0; i<n; i++) {

                if (arr[i] < 0) {

                        printf("%d ", arr[i]);

                }

        }

}

```



```
}
```

```
int main () {  
    int arr[100], n, i, ans;  
  
    printf("Please enter size of an Array: ");  
    scanf("%d", &n);  
  
    for (i=0; i<n; i++) {  
        printf("Please enter element of array %d: ",i);  
        scanf("%d", &arr[i]);  
    }  
  
    nagetive(arr, n, i);  
  
    return 0;  
}
```

Output:-

```
Please enter size of an Array: 5  
Please enter element of array 0: 60  
Please enter element of array 1: -042  
Please enter element of array 2: -426  
Please enter element of array 3: 25  
Please enter element of array 4: 5424  
Ans element of array: -42 -426
```

14.

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

```
int secondmax(int n, int arr[], int i) {  
    int m1 = 0, m2 = 0;
```

```
for (i=0; i<n; i++) {  
    if (arr[i] > m1) {  
        m2 = m1;  
        m1 = arr[i];  
    } else if (arr[i] > m2 && arr[i] != m1) {  
        m2 = arr[i];  
    }  
}  
  
printf("2nd Maximum is: %d", m2);  
  
return m2;  
}
```

```
int main () {  
    int n, i, arr[100], ans;  
  
    printf("Please enter size of an array: ");  
    scanf("%d", &n);  
  
    for (i=0; i<n; i++) {  
        printf("Please enter value of array: ");  
        scanf("%d", &arr[i]);  
    }  
  
    ans = secondmax(n, arr, i);  
  
    return 0;
```

```
}
```

Output:-

```
Please enter size of an array: 5
Please enter value of array: 30
Please enter value of array: 90
Please enter value of array: 80
Please enter value of array: 60
Please enter value of array: 100
2nd Maximum is: 90
```

15.

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

```
int sumischeck(int arr[], int n) {
```

```
    int sum = 0, i;
```

```
    for (i=0; i<=n; i++) {
```

```
        sum = sum + arr[i];
```

```
    }
```

```
    printf("Ans is: %d", sum);
```

```
    return sum;
```

```
}
```

```
int main() {
```

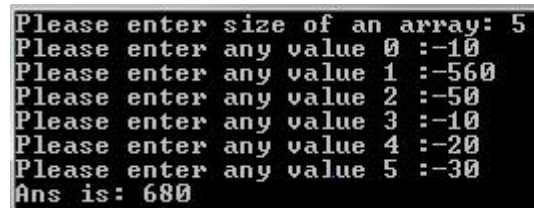
```
    int arr[100], n, i, ans;
```

```
    printf("Please enter size of an array: ");
```

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

```
    for (i=0; i<=n; i++) {  
        printf("Please enter any value %d :-", i);  
        scanf("%d", &arr[i]);  
    }  
  
    ans = sumischeck(arr, n);  
  
    return 0;  
}
```

Output:-



```
Please enter size of an array: 5  
Please enter any value 0 :-10  
Please enter any value 1 :-560  
Please enter any value 2 :-50  
Please enter any value 3 :-10  
Please enter any value 4 :-20  
Please enter any value 5 :-30  
Ans is: 680
```