

Program Set 7

Dates: 02.01.2023 – 06.01.2023

1. Write a C program to calculate the area and circumference of a circle, using macro to define the constant PI as 3.14.
2. Write a C program to find the following using macros with arguments
 - a. the mean of two user input integers
 - b. bigger of two user input integers
3. Write a C program to use macro definitions with arguments for calculation of area and perimeter of a (optional)
 - a. square
 - b. circle
 - c. triangle
 - d. rectangle
4. Write a C program to
 - a. declare 3 arrays, each of type int, float and char of size 10.
 - b. Initialize these arrays with proper values
 - c. Print the values in the arrays using loop
 - d. Take user input and store these elements in the arrays – use loop. Print them.
 - e. Try to access and print the elements at index 20 of each array and see the result.
5. Take user inputs of marks of a student for 6 subjects (each out of hundred). Store them in an integer array. Calculate the average marks and print it.
6. Enter 10 numbers from user. Store them in an integer array. Print how many are
 - a. Positive, odd
 - b. Negative, odd
 - c. Positive even
 - d. Negative Even
 - e. zeros
7. Take user input of 5 integers in an array A. Copy contents of A into another integer array B:
 - a. In the same order
 - b. In the reverse order.
8. Take as user input two integer arrays A and B of size 5. Print if they are equal or not.
9. Take as use input two character arrays of same size 10 which are unequal. Find and print the array indices where they are unequal.

10. Take user inputs of marks of 5 students for 4 subjects out of 100. Store them in 5 separate float arrays.
- Calculate the average marks of each student in the 4 subjects and print it.
 - Calculate the average marks for each subject and print it.

Syntax reference for arrays:

```
1  #include <stdio.h>
2+ int main() {
3      int a[10];
4      int i;
5+     for(i=0;i<10;i++){ //inserting values in array
6         a[i] = i;
7     }
8+     for(i=0;i<10;i++){ //printing values in array
9         printf("\nValue in a[%d] = %d",i,a[i]) ;
10    }
11    printf("\nValue in a[%d] = %d",10,a[10]) ;
12    return 0;
13 }
```

1.

```
1  #include<stdio.h>
2+ int main(){
3      int example_arr[5] = {1,2,3,4,5}; //array initialization
4      printf("%d",example_arr[4]); //what will be printed?
5      //-----
6      int avg, sum = 0 ;
7      int i ;
8      int marks[5] ; /* array declaration */
9+     for ( i = 0 ; i < 5 ; i++ ){
10         printf ( "\nEnter marks " ) ;
11         scanf ( "%d", &marks[i] ) ; /* user input data stored in array */
12     }
13     for ( i = 0 ; i < 5 ; i++ )
14         sum = sum + marks[i] ; /* read data from an array and calculate*/
15     avg = sum / 5;
16     printf ( "\nAverage marks = %d", avg ) ;
17     return 0;
18 }
```

2.