

Ex 1 Pow(x,n), Add(x,n), Sub(x,n), Mul(x,n), Div(x,n),

```
main.c
6 printf("Enter X and N: ");
7 scanf("%lf %lf", &x, &n);
8 printf("Choose operation (1-5):Pow(x,n), Add(x,n), Sub
(x,n), Mul(x,n), Div(x,n) ");
9 scanf("%d", &choice);
10 switch (choice) {
11     case 1: printf("pow(x, n) =%.2lf\n", pow(x, n));
        break;
12     case 2: printf("x + n = %.2lf\n", x + n); break;
13     case 3: printf("x - n =%.2lf\n", x - n); break;
14     case 4: printf("x * n = %.2lf\n", x * n); break;
15     case 5: if (n != 0) printf("x / n = %.2lf\n", x/n
        ); else
        printf("Error: Division by zero.\n"); break
        ;
16 }
17 return 0;
18 }
```

Output

```
Enter X and N: 7 0
Choose operation (1-5):Pow(x,n), Add(x,n), Sub(x,n), Mul(x,n), Div
(x,n) SERROR!

Error: Division by zero.

=== Code Execution Successful ===
```

```
main.c
4 double x, n;
5 int choice;
6 printf("Enter X and N: ");
7 scanf("%lf %lf", &x, &n);
8 printf("Choose operation (1-5): ");
9 scanf("%d", &choice);
10 switch (choice) {
11     case 1: printf("pow(x, n) %.2lf\n", pow(x, n));
        break;
12     case 2: printf("x + n %.2lf\n", x + n); break;
13     case 3: printf("x - n %.2lf\n", x - n); break;
14     case 4: printf("x * n %.2lf\n", x * n); break;
15     case 5: if (n != 0) printf("x / n %.2lf\n", x/n );
        else printf("Error: Division by zero.\n");
        break;
16 }
17 return 0;
```

Output

```
Enter X and N: 7 8
Choose operation (1-5): 5
x / n 0.88

=== Code Execution Successful ===
```

Ex 2 reverse the no.

```
main.c
1 #include <stdio.h>
2 int main() {
3     int num, reverse = 0, remainder;
4     printf("Enter a number: ");
5     scanf("%d", &num);
6     while (num != 0) {
7         remainder = num % 10;
8         reverse = reverse * 10 + remainder;
9         num /= 10;
10    }
11    printf("Reverse Number: %d\n", reverse);
12    return 0;
13 }
```

Output

```
Enter a number: 227409
Reverse Number: 904722

=== Code Execution Successful ===
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### Ex 3 factorial of N

main.c	Output
<pre>1 #include &lt;stdio.h&gt; 2 3 int main() { 4     int num, factorial = 1; 5     printf("Enter a number: "); 6     scanf("%d", &amp;num); 7     for (int i = 1; i &lt;= num; i++) { 8         factorial *= i; 9     } 10    printf("Factorial of %d = %d\n", num, factorial); 11    return 0; 12 }</pre>	<pre>Enter a number: 7 Factorial of 7 = 5040  === Code Execution Successful ===</pre>

### Ex 4 perfect no.

main.c	Output
<pre>1 2 #include &lt;stdio.h&gt; 3 int main() { 4     int num, sum = 0; 5     printf("Enter a number: "); 6     scanf("%d", &amp;num); 7     for (int i = 1; i &lt; num; i++) { 8         if (num % i == 0) { 9             sum += i; 10        } 11    } 12    if (sum == num) { 13        printf("Its a Perfect Number\n"); 14    } else { 15        printf("Its not a Perfect Number\n"); 16    } 17    return 0; 18 }</pre>	<pre>Enter a number: 7 Its not a Perfect Number  === Code Execution Successful ===</pre>

### Ex 5 square and cube of a no.

main.c	Output
<pre>1 #include &lt;stdio.h&gt; 2 3 int main() { 4     float num; 5 6     printf("Enter a decimal number: "); 7     scanf("%f", &amp;num); 8 9     printf("Square of %.2f = %.2f\n", num, num * num); 10    printf("Cube of %.2f = %.2f\n", num, num * num * num); 11 12    return 0; 13 }</pre>	<pre>Enter a decimal number: 7.22 Square of 7.22 = 52.13 Cube of 7.22 = 376.37  === Code Execution Successful ===</pre>

## Ex 6 vote eligible

main.c	Output
<pre>1 #include &lt;stdio.h&gt; 2 int main() { 3     int age; 4     printf("Enter your age: "); 5     scanf("%d", &amp;age); 6     if (age &gt;= 18) { 7         printf("You are eligible to vote.\n"); 8     } else { 9         printf("You are allowed to vote after %d years.\n", 10              18 - age); 11     } 12     return 0; 13 }</pre>	<pre>Enter your age: 10 You are allowed to vote after 8 years.  === Code Execution Successful ===</pre>

## Ex 7 odd or even no.s

main.c	Output
<pre>1 #include &lt;stdio.h&gt; 2 int main() { 3     int num; 4     printf("Enter a number: "); 5     scanf("%d", &amp;num); 6     if (num % 2 == 0) { 7         printf("The given number is even.\n"); 8     } else { 9         printf("The given number is odd.\n"); 10    } 11    return 0; 12 }</pre>	<pre>Enter a number: 7 The given number is odd.  === Code Execution Successful ===</pre>

## Ex 8 range of no. without the value that represented in the R

main.c	Output
<pre>1 #include &lt;stdio.h&gt; 2 int main() { 3     int p, q, r, i; 4     printf("Enter P, Q and R: "); 5     scanf("%d %d %d", &amp;p, &amp;q, &amp;r); 6     printf("Numbers are = "); 7     for (i = p; i &lt;= q; i++) { 8         if (i % 10 != r &amp;&amp; i / 10 != r) { 9             printf("%d, ", i); 10        } 11    } 12    printf("\n"); 13 14    return 0; 15 }</pre>	<pre>Enter P, Q and R: 70 80 9 Numbers are = 70, 71, 72, 73, 74, 75, 76, 77, 78, 80,  === Code Execution Successful ===</pre>

## Ex 9 no. of rows

main.c	Output
<pre>1 #include &lt;stdio.h&gt; 2 int main() { 3     int rows, i, j; 4     printf("Enter the number of rows: "); 5     scanf("%d", &amp;rows); 6     for (i = 1; i &lt;= rows; i++) { 7         for (j = i; j &gt;= 1; j--) { 8             printf("%d ", j); 9         } 10        printf("\n"); 11    } 12    return 0; 13 }</pre>	<pre>Enter the number of rows: 7 1 2 1 3 2 1 4 3 2 1 5 4 3 2 1 6 5 4 3 2 1 7 6 5 4 3 2 1  === Code Execution Successful ===</pre>

## Ex 10 printing repeated no. in pattern

main.c	Output
<pre>1 #include &lt;stdio.h&gt; 2 int main() { 3     int n, i, j; 4     printf("Enter the number of lines: "); 5     scanf("%d", &amp;n); 6     for (i = 1; i &lt;= n; i++) { 7         for (j = 1; j &lt;= i; j++) { 8             printf("%d ", i); 9         } 10        printf("\n"); 11    } 12    return 0; 13 }</pre>	<pre>Enter the number of lines: 7 1 2 2 3 3 3 4 4 4 4 5 5 5 5 5 6 6 6 6 6 6 7 7 7 7 7 7 7  === Code Execution Successful ===</pre>

## Ex 11 tables

main.c	Output
<pre>1 #include &lt;stdio.h&gt; 2 int main() { 3     int m, n, i; 4     printf("Enter M and N: "); 5     scanf("%d %d", &amp;m, &amp;n); 6     for (i = 1; i &lt;= n; i++) { 7         printf("%dx%d=%d \n", m, i, i * m); 8     } 9     return 0; 10 }</pre>	<pre>Enter M and N: 7 5 7x1=7 7x2=14 7x3=21 7x4=28 7x5=35  === Code Execution Successful ===</pre>

Ex 12 composites no.

main.c	Output
<pre>1 #include &lt;stdio.h&gt; 2 int main() { 3     int arr[] = {16, 18, 27, 16, 23, 21, 19}; 4     int n = sizeof(arr) / sizeof(arr[0]); 5     int count = 0, i; 6     for (i = 0; i &lt; n; i++) { 7         for (int j = 2; j * j &lt;= arr[i]; j++) { 8             if (arr[i] % j == 0) { 9                 count++; 10                break; 11            } 12        } 13    } 14    printf("Number of Composite Numbers = %d\n", count); 15    return 0; 16 }</pre>	<pre>Number of Composite Numbers = 5  === Code Execution Successful ===</pre>

Ex 13 no. of negative no.s

main.c	Output
<pre>1 #include &lt;stdio.h&gt; 2 int main() { 3     int arr[] = {16, -18, 27, -16, 23, -21, 19}; 4     int n = sizeof(arr) / sizeof(arr[0]); 5     int count = 0, i; 6     for (i = 0; i &lt; n; i++) { 7         if (arr[i] &lt; 0) count++; 8     } 9     printf("Number of negative numbers = %d\n", count); 10    return 0; 11 }</pre>	<pre>Number of negative numbers = 3  === Code Execution Successful ===</pre>

Ex 14 reverse array

main.c	Output
<pre>1 #include &lt;stdio.h&gt; 2 int main() { 3     int arr[] = {16, 18, 27, 16, 23, 21, 19}; 4     int n = sizeof(arr) / sizeof(arr[0]); 5     int i, j, temp; 6     for (i = 0, j = n - 1; i &lt; j; i++, j--) { 7         temp = arr[i]; 8         arr[i] = arr[j]; 9         arr[j] = temp; 10    } 11    printf("Reverse Array: "); 12    for (i = 0; i &lt; n; i++) { 13        printf("%d ", arr[i]); 14    } 15    return 0; 16 }</pre>	<pre>Reverse Array: 19 21 23 16 27 18 16  === Code Execution Successful ===</pre>

### Ex 15 transpose of matrix

main.c	Output
<pre>1 #include &lt;stdio.h&gt; 2 int main() { 3     int matrix[2][2] = {{3, 7}, {5, 7}}; 4     int transpose[2][2]; 5     for (int i = 0; i &lt; 2; i++) { 6         for (int j = 0; j &lt; 2; j++) { 7             transpose[j][i] = matrix[i][j]; 8         } 9     } 10    printf("Transpose:\n"); 11    for (int i = 0; i &lt; 2; i++) { 12        printf("%d %d\n", transpose[i][0], transpose[i][1]); 13    } 14    return 0; 15 }</pre>	<pre>Transpose: 3 5 7 7  === Code Execution Successful ===</pre>

### Ex 16 array without duplicate

main.c	Output
<pre>10     found = 1; 11     break; 12 } 13 } 14 if (!found) { 15     arr[j] = arr[i]; 16     j++; 17 } 18 } 19 printf("Array without duplicates: "); 20 for (int i = 0; i &lt; j; i++) { 21     printf("%d ", arr[i]); 22 } 23 return 0; 24 }</pre>	<pre>Array without duplicates: 15 14 25 32 31  === Code Execution Successful ===</pre>

### Ex 17 search of the element in an array

main.c	Output
<pre>1 #include &lt;stdio.h&gt; 2 3 int main() { 4     int arr[] = {16, 18, 27, 16, 23, 21, 19}; 5     int n = sizeof(arr) / sizeof(arr[0]); 6     int element = 27; 7     int found = 0; 8 9     for (int i = 0; i &lt; n; i++) { 10         if (arr[i] == element) { 11             found = 1; 12             printf("Given element %d is found at %dth 13                 position\n", element, i + 1); 14             break; 15         } 16     } 17     if (!found) {</pre>	<pre>Given element 27 is found at 3th position  === Code Execution Successful ===</pre>

## Ex 18 adding 2 no.

main.c	Output
<pre>1 #include &lt;stdio.h&gt; 2 int main() { 3     int num1, num2, sum; 4     int *ptr1, *ptr2, *ptr3; 5     ptr1 = &amp;num1; 6     ptr2 = &amp;num2; 7     ptr3 = &amp;sum; 8     printf("Input the first number : "); 9     scanf("%d", ptr1); 10    printf("Input the second number : "); 11    scanf("%d", ptr2); 12    *ptr3 = *ptr1 + *ptr2; 13    printf("The sum of the entered numbers is : %d\n", *ptr3); 14    return 0; 15 }</pre>	<pre>Input the first number : 2 Input the second number : 7 The sum of the entered numbers is : 9  === Code Execution Successful ===</pre>

## Ex 19 max number

main.c	Output
<pre>1 #include &lt;stdio.h&gt; 2 int main() { 3     int a, b, *max; 4     printf("Input the first number : "); 5     scanf("%d", &amp;a); 6     printf("Input the second number : "); 7     scanf("%d", &amp;b); 8     if (a &gt; b) { 9         max = &amp;a; 10    } else { 11        max = &amp;b; 12    } 13    printf("%d is the maximum number.\n", *max); 14    return 0; 15 }</pre>	<pre>Input the first number : 77 Input the second number : 7 77 is the maximum number.  === Code Execution Successful ===</pre>

## Ex 20 largest no. in array or elements

main.c	Output
<pre>1 #include &lt;stdio.h&gt; 2 #include &lt;stdlib.h&gt; 3 int main() { 4     int n; 5     float *arr, max; 6     printf("Input total number of elements: "); 7     scanf("%d", &amp;n); 8     arr = (float*)malloc(n * sizeof(float)); 9     for (int i = 0; i &lt; n; i++) { 10        printf("Number %d: ", i + 1); 11        scanf("%f", &amp;arr[i]); 12        if (i == 0    arr[i] &gt; max) max = arr[i]; 13    } 14    printf("The Largest element is : %.2f\n", max); 15    return 0; 16 }</pre>	<pre>Input total number of elements: 7 Number 1: 7 Number 2: 4 Number 3: 5 Number 4: 3 Number 5: 2 Number 6: 1 Number 7: 0 The Largest element is : 7.00  === Code Execution Successful ===</pre>