**ASSIGNMENT 1**

1. Write a C program to print an array.

#include <stdio.h>

#include <math.h>

#include <string.h>

#include <stdlib.h>

#define PI 3.14159

int main()

{

int n;

printf("Enter Number of Elements: ");

scanf("%d", &n);

int ar[n];

printf("Enter Array Elements: ");

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

{

scanf("%d", &ar[i]);

}

printf("Your Array: ");

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

{

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

}

return 0;

}

Output:



1. Write a C program to check whether a given string is Palindrome or not.

#include <stdio.h>

#include <math.h>

#include <string.h>

#include <stdlib.h>

#define PI 3.14159

int main()

{

char c[100];

printf("Enter String: ");

scanf("%s", c);

int l = strlen(c);

char ch[101];

for (int i = 0; i < l; i++)

{

ch[i] = c[l - 1 - i];

}

ch[l] = '\0';

if (strcmp(c, ch) == 0)

{

printf("The Given String Is Palindrome");

}

else

{

printf("The Given String Is NOT Palindrome");

}

return 0;

}

Output:



1. Write a C program to convert temperature from degree Centigrade to Fahrenheit.

#include <stdio.h>

#include <math.h>

#include <string.h>

#include <stdlib.h>

#define PI 3.14159

int main()

{

int temp;

printf("Enter Temperature: ");

scanf("%d", &temp);

int n;

printf("Convert it to?\n1. Fahrenheit\n2. Celsius?\n");

scanf("%d", &n);

if (n == 1)

{

temp = (temp \* 9 / 5) + 32;

printf("%d°F", temp);

}

else

{

temp = (temp - 32) \* 5 / 9;

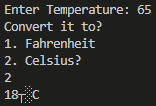
printf("%d°C", temp);

}

return 0;

}

Output:



1. Write a C program to sort an array.

#include <stdio.h>

#include <math.h>

#include <string.h>

#include <stdlib.h>

#define PI 3.14159

int main()

{

int n;

printf("Enter Number of Elements: ");

scanf("%d", &n);

int ar[n];

printf("Enter Array Elements: ");

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

{

scanf("%d", &ar[i]);

}

for (int i = 0; i < n - 1; i++)

{

for (int j = 0; j < n - 1 - i; j++)

{

if (ar[j] > ar[j + 1])

{

int temp = ar[j];

ar[j] = ar[j + 1];

ar[j + 1] = temp;

}

}

}

int x;

printf("Sort in Which Order?\n1. Increading Order\n2. Descending Order?\n");

scanf("%d", &x);

if (x == 1)

{

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

{

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

}

}

else

{

for (int i = n - 1; i >= 0; i--)

{

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

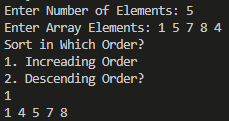
}

}

return 0;

}

Output:



1. Write a C program to print the largest and second largest element of the array.

#include <stdio.h>

#include <math.h>

#include <string.h>

#include <stdlib.h>

#define PI 3.14159

int main()

{

int n;

printf("Enter Number of Elements: ");

scanf("%d", &n);

int ar[n];

printf("Enter Array Elements: ");

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

{

scanf("%d", &ar[i]);

}

int max = -1, big = -1;

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

{

if (max < ar[i])

{

max = ar[i];

}

}

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

{

if (big < ar[i] && ar[i] != max)

{

big = ar[i];

}

}

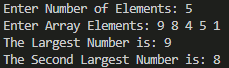
printf("The Largest Number is: %d", max);

printf("\nThe Second Largest Number is: %d", big);

return 0;

}

Output:



1. Write a C program to display Fibonacci series.

#include <stdio.h>

#include <math.h>

#include <string.h>

#include <stdlib.h>

#define PI 3.14159

int main()

{

int n;

printf("Enter Number of Elements: ");

scanf("%d", &n);

if (n <= 0)

{

printf("There's nothing to print");

}

else if (n == 1)

{

printf("0");

}

else if (n == 2)

{

printf("0 1");

}

else

{

int a = 0, b = 1, c;

printf("0 1 ");

n = n - 2;

while (n > 0)

{

c = a + b;

printf("%d ", c);

a = b;

b = c;

n--;

}

}

return 0;

}

Output:



1. Write a program that reads two 2D metrices from the console, verifies if metrics multiplication is possible or not. Then multiplies the metrices and prints the 3rd metrics.

#include <stdio.h>

#include <math.h>

#include <string.h>

#include <stdlib.h>

#define PI 3.14159

int main()

{

int m, n, r, c;

printf("Enter Number of Rows of First Matrix: ");

scanf("%d", &m);

printf("Enter Number of Columns of First Matrix: ");

scanf("%d", &n);

printf("Enter Number of Rows of Second Matrix: ");

scanf("%d", &r);

printf("Enter Number of Columns of Second Matrix: ");

scanf("%d", &c);

if (n != r)

{

printf("This Matrix Multiplication is not possible");

exit(0);

}

int ar[m][n];

printf("Enter First Matrix Elements: ");

for (int i = 0; i < m; i++)

{

for (int j = 0; j < n; j++)

{

scanf("%d", &ar[i][j]);

}

}

int arr[r][c];

printf("Enter Second Matrix Elements: ");

for (int i = 0; i < r; i++)

{

for (int j = 0; j < c; j++)

{

scanf("%d", &arr[i][j]);

}

}

int a[m][c];

for (int i = 0; i < m; i++)

{

for (int j = 0; j < c; j++)

{

a[i][j] = 0;

}

}

for (int i = 0; i < m; i++)

{

for (int j = 0; j < c; j++)

{

for (int k = 0; k < n; k++)

{

a[i][j] += ar[i][k] \* arr[k][j];

}

}

}

printf("Final Matrix:\n");

for (int i = 0; i < m; i++)

{

for (int j = 0; j < c; j++)

{

printf("%d ", a[i][j]);

}

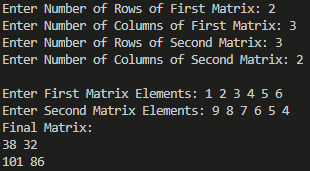
printf("\n");

}

return 0;

}

Output:



1. Write a program that reads a 2D metrics and checks if the metrics is a symmetric metrics or not.

#include <stdio.h>

#include <math.h>

#include <string.h>

#include <stdlib.h>

#define PI 3.14159

int main()

{

int m;

printf("Enter Number of Rows: ");

scanf("%d", &m);

int ar[m][m], arr[m][m];

printf("Enter Matrix Elements:\n");

for (int i = 0; i < m; i++)

{

for (int j = 0; j < m; j++)

{

scanf("%d", &ar[i][j]);

arr[j][i] = ar[i][j];

}

}

for (int i = 0; i < m; i++)

{

for (int j = 0; j < m; j++)

{

if (ar[i][j] != arr[i][j])

{

printf("They are NOT Symmetric");

exit(0);

}

}

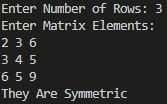
}

printf("They Are Symmetric");

return 0;

}

Output:



1. Write a C program to print reverse array

#include <stdio.h>

#include <math.h>

#include <string.h>

#include <stdlib.h>

#define PI 3.14159

int main()

{

int n;

printf("Enter Number of Elements: ");

scanf("%d", &n);

int ar[n];

printf("Enter Array Elements: ");

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

{

scanf("%d", &ar[i]);

}

printf("Reverse Array: ");

for (int i = n - 1; i >= 0; i--)

{

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

}

return 0;

}

Output:



1. Write a C program to check the sum of all elements of an array

#include <stdio.h>

#include <math.h>

#include <string.h>

#include <stdlib.h>

#define PI 3.14159

int main()

{

int n, sum = 0;

printf("Enter Number of Elements: ");

scanf("%d", &n);

int ar[n];

printf("Enter Array Elements: ");

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

{

scanf("%d", &ar[i]);

sum = sum + ar[i];

}

printf("Sum: %d", sum);

return 0;

}

Output:



1. Write a C program to check duplicate number in an array.

#include <stdio.h>

#include <math.h>

#include <string.h>

#include <stdlib.h>

#define PI 3.14159

int main()

{

int n;

printf("Enter Number of Elements: ");

scanf("%d", &n);

int ar[n];

printf("Enter Array Elements: ");

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

{

scanf("%d", &ar[i]);

}

for (int i = 0; i < n - 1; i++)

{

for (int j = i + 1; j < n; j++)

{

if (ar[i] == ar[j])

{

printf("%d is duplicate", ar[i]);

exit(0);

}

}

}

printf("This Array has No Duplicates");

return 0;

}

Output:

