**Q1)**

**SOLUTION**

#include <iostream>

using namespace std;

int main()

{

int n, last\_digit, product, sum;

product = 1;

sum = 0;

cout << "Enter a number: " << endl;

cin >> n;

while (n > 0)

{

last\_digit = n % 10;

product \*= last\_digit;

sum += last\_digit;

n /= 10;

}

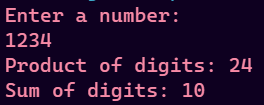
cout << "Product of digits: " << product << endl;

cout << "Sum of digits: " << sum << endl;

return 0;

}

**OUTPUT**

****

**Q2)**

**SOLUTION**

#include <iostream>

using namespace std;

int main()

{

int n, reversed, last\_digit;

reversed = 0;

cout << "Enter the number: ";

cin >> n;

while (n > 0)

{

last\_digit = n % 10;

reversed = 10 \* reversed + last\_digit;

n /= 10;

}

cout << "Reversed number: " << reversed ;

return 0;

}

**OUTPUT**



**Q3)**

**SOLUTION**

#include <iostream>

using namespace std;

int main()

{

int n;

cout << "Enter value of n: ";

cin >> n;

if (n <= 0){

cout << "n can not be less than or equal to zero";

exit(1);

}

float sum = 1;

for (int i = 2; i <= n; i++)

{

sum += (1.0/i);

}

cout << "Sum of series: " << sum;

return 0;

}

**OUTPUT**





**Q4)**

**SOLUTION**

#include <iostream>

using namespace std;

int main()

{

int n;

cout << "Enter value of n: ";

cin >> n;

if (n <= 0){

cout << "n can not be less than or equal to zero";

exit(1);

}

int sum = 0;

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

{

if (i % 2 == 0){

sum -= i;

}

else{

sum += i;

}

}

cout << "Sum of series: " << sum;

return 0;

}

**OUTPUT**





**Q6)**

**SOLUTION**

#include <iostream>

using namespace std;

bool is\_prime(int n){

for (int i = 2; i < n; i++)

{

if (n % i == 0){

return false;

}

}

return true;

}

int main()

{

for (int i = 2; i < 100; i++)

{

if (is\_prime(i)){

cout << i << endl;

}

}

return 0;

}

**OUTPUT**



**Q7)**

**SOLUTION**

#include <iostream>

using namespace std;

int main()

{

int n;

cout << "Enter a number: ";

cin >> n;

if (n <= 0){

cout << "n can not be negative or zero" ;

exit(1);

}

cout << "Factors of " << n << endl;

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

{

if (n % i == 0){

cout << i << endl;

}

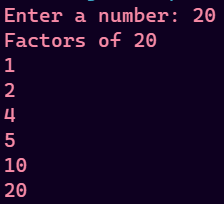
}

return 0;

}

**OUTPUT**

****

****

**Q9)**

**SOLUTION**

#include <iostream>

using namespace std;

int main()

{

int n;

cin >> n;

if (n <= 0){

cout << "n can not be negative or less than zero";

exit(1);

}

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

{

for (int j = 1; j <= (2\*i - 1); j++)

{

cout << "\* ";

}

cout << endl;

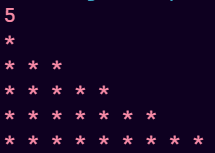
}

return 0;

}

**OUTPUT**

****

****

**Q10)**

**SOLUTION**

#include <iostream>

using namespace std;

void printArray(int arr[], int n)

{

cout << "Array -> ";

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

{

cout << arr[i] << " ";

}

cout << endl;

}

void print\_even(int arr[], int n)

{

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

{

if (arr[i] % 2 == 0)

{

cout << arr[i] << " ";

}

}

cout << endl;

}

void print\_odd(int arr[], int n)

{

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

{

if (arr[i] % 2 != 0)

{

cout << arr[i] << " ";

}

}

cout << endl;

}

void statistics(int arr[], int n)

{

int sum = 0;

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

{

sum += arr[i];

}

float average = float(sum) / n;

cout << "Average: " << average << endl;

cout << "Sum: " << sum << endl;

}

void max\_min(int arr[], int n)

{

int max, min;

max = arr[0];

min = arr[0];

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

{

if (arr[i] > max)

{

max = arr[i];

}

if (arr[i] < min)

{

min = arr[i];

}

}

cout << "Max element: " << max << endl;

cout << "Min element: " << min << endl;

}

int remove\_duplicates(int arr[], int n)

{

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

{

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

{

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

{

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

{

arr[k] = arr[k + 1];

}

n--;

}

}

}

return n;

}

void print\_reverse(int arr[], int n)

{

cout << "Array in reverse -> ";

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

{

cout << arr[i] << " ";

}

cout << endl;

}

int main()

{

int n;

char choice;

cout << "Enter size of array: ";

cin >> n;

if (n <= 0)

{

cout << "Array should have atleast one element" << endl;

exit(1);

}

int arr[n];

cout << "Enter elements of array" << endl;

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

{

cin >> arr[i];

}

while (true)

{

cout << "------MENU------" << endl;

cout << "1. Print even valued elements" << endl;

cout << "2. Print odd valued elements" << endl;

cout << "3. Average and Sum of elements" << endl;

cout << "4. Maximum and Minimum among the elements" << endl;

cout << "5. Remove duplicates" << endl;

cout << "6. Array in Reverse Order" << endl;

cout << "7. Print Array" << endl;

cout << "8. EXIT" << endl;

cout << "Make your choice: ";

cin >> choice;

if (choice == '8')

{

cout << "Exiting Program" << endl;

break;

}

else if (choice == '1')

{

print\_even(arr, n);

}

else if (choice == '2')

{

print\_odd(arr, n);

}

else if (choice == '3')

{

statistics(arr, n);

}

else if (choice == '4')

{

max\_min(arr, n);

}

else if (choice == '5')

{

cout << "Before duplicate removal" << endl;

printArray(arr, n);

n = remove\_duplicates(arr, n);

cout << "After duplicate removal" << endl;

printArray(arr, n);

}

else if (choice == '6')

{

print\_reverse(arr, n);

}

else if (choice == '7')

{

printArray(arr, n);

}

else

{

cout << "Invalid choice" << endl;

}

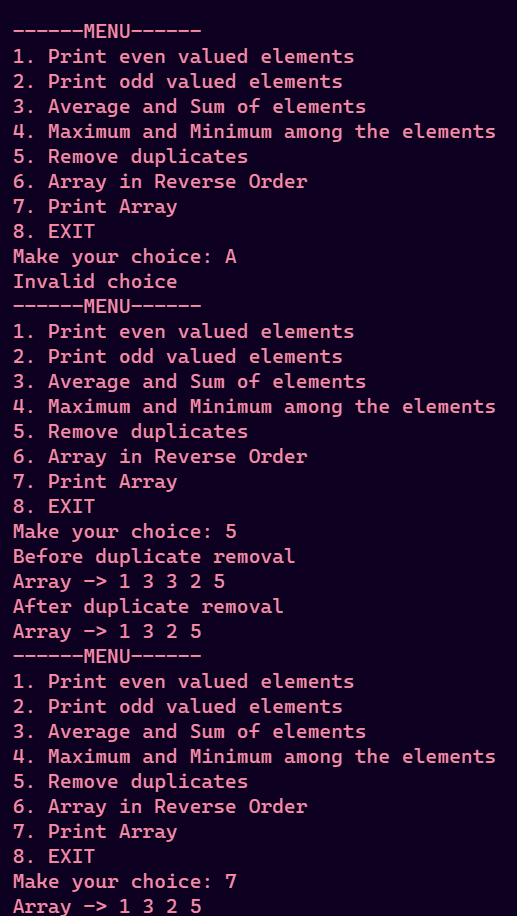
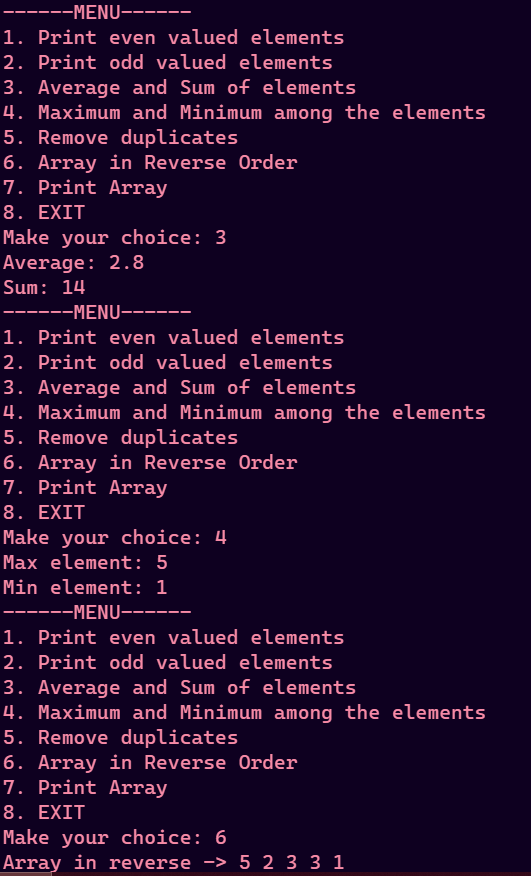
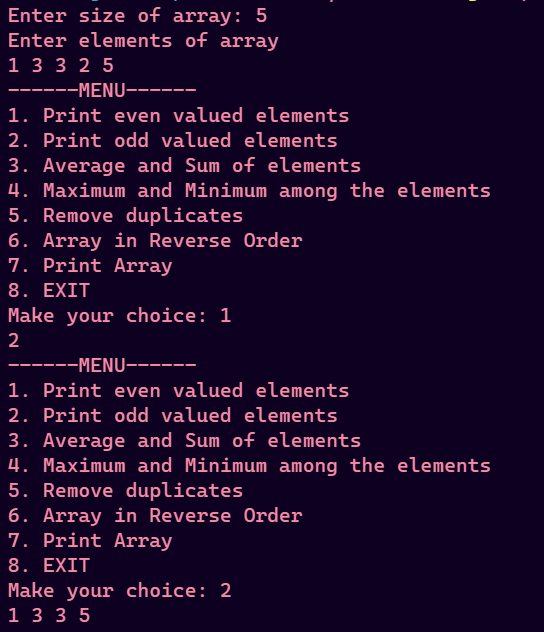
}

return 0;

}

**OUTPUT**

****

****