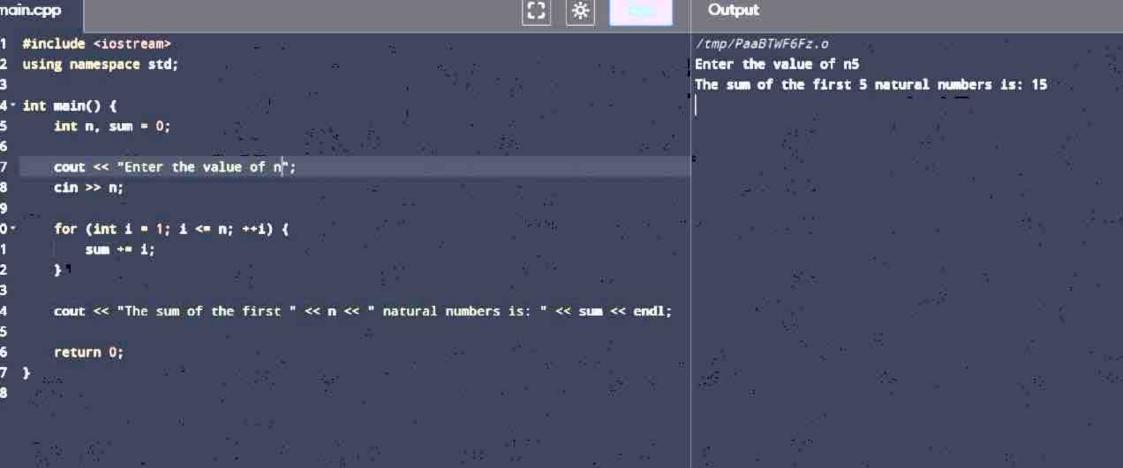


```
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                                                                        -0-
in.cpp
                                                                                           Output
                                                                                Run
#include <iostream>
                                                                                          tmp/PaaBTWF6Fz.o
using namespace std;
                                                                                         Enter a number: 13
                                                                                         13 is not a perfect number.
bool isPerfectNumber(int number) {
    int sum = 0;
    for (int i = 1; i <= number / 2; i++) {
        if (number % i == 0) {
            sum += 1;
    }
    return sum == number;
int main() {
    int number;
    cout << "Enter a number: ";
    cin >> number;
    if (isPerfectNumber(number)) {
        cout << number << " is a perfect number." << endl;</pre>
    } else {
        cout << number << " is not a perfect number." << endl;</pre>
    }
    return 0;
```

```
while (left <= right) {
        int mid = left + (right - left) / 2;
       if (arr[mid] != mid + 1 && (mid == 0 || arr[mid - 1] == mid)) {
           return mid + 1;
       1
       else if (arr[mid] != mid + 1) {
           right = mid - 1;
       }
       else {
          left = mid + 1;
      )
  )
  return size + 1;
t main() {
 int arr[] = {0, 11, 2, 3, 4, 5, 6, 7};
 int size = sizeof(arr) / sizeof(arr[0]);
 int smallestMissing = findSmallestMissing(arr, size);
 cout << "The smallest missing element is: " << smallestMissing << endl;
return 0;
```



```
1 #include <iostream>
                                                                                            /tmp/PaaBTWF6Fz.o
2 using namespace std;
                                                                                            Enter the value of n: 3
                                                                                            The sum of the first 3 natural numbers is: 6
4 int main() {
5 int n, su
      int n. sum = 0, 1 = 1;
    cout << "Enter the value of n; "; cin >> n;
      while (i <= n) {
           sum += 1;
           1
      cout << "The sum of the first " << n << " natural numbers is: " << sum << endl;</pre>
      return 0;
```

```
Output
nain.cpp
1 #include <iostream>
                                                                                         /tmp/PaaBTWF6Fz.o
  using namespace std;
                                                                                         Enter the value of n: 6
                                                                                         The sum of the first 6 natural numbers is: 21
4 - int main() {
      int n, sum = 0, i = 1;
      cout << "Enter the value of n: ";
      cin >> n;
      do {
          SUB ** 17
          1000
      } while (i <= n);
      cout << "The sum of the first " << n << " natural numbers is: " << sum << endl;
      return 0;
```

```
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#include <iostream>
                                                                                     /tmp/PaaBTWF6Fz.o
using namespace std;
                                                                                     Enter a number: 13
                                                                                     13 is not a perfect number.
'int main() {
    int num, sum = 0;
    cout << "Enter a number: ";
    cin >> num;
    for (int 1 = 1; i < num; i++) {
        if (num % 1 == 0) {
            SUB ** 17
    1
    if (sum == num) {
        cout << num << " is a perfect number." << endl;
     } else {
        cout << num << " is not a perfect number." << endl;
    return 0;
```

CONTRACTOR AND ADDRESS.

MILES PAR

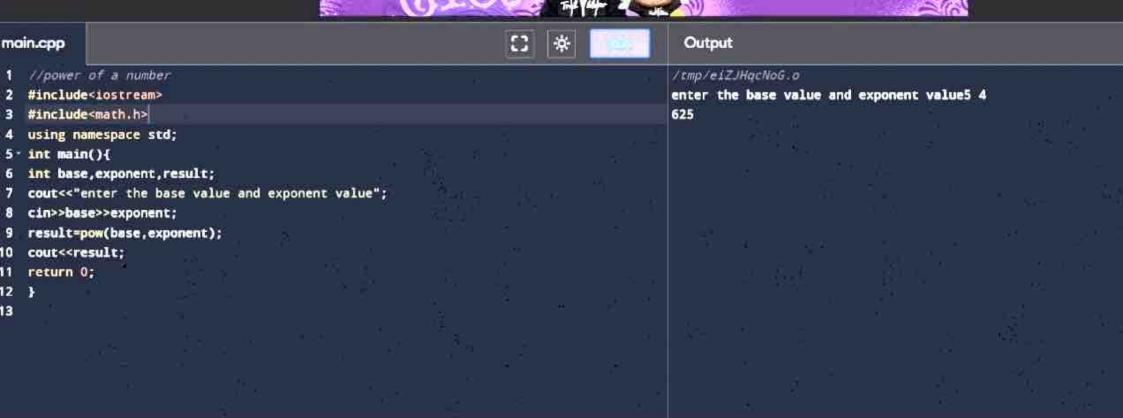
```
nain.cpp
                                                                                            Output
  #include <iostream>
                                                                                          /tmp/PaaBTWF6Fz.o
  using namespace std;
                                                                                          Enter a number: 13
                                                                                          13 is not a perfect number.
4- int main() {
      int num, sum = 0, i = 1;
      cout << "Enter a number: ";
      cin >> num;
      while (i < num) {
          if (num % i == 0) {
              sum += i;
          1++;
      if (sum == num) {
          cout << num << " is a perfect number." << endl;</pre>
      } else {
          cout << num << " is not a perfect number." << endl;
      return 0;
```

```
/tmp/PaaBTWF6Fz.o
 using namespace std;
                                                                                       Enter a number: 13
                                                                                       13 is not a perfect number.
bool isPerfectNumber(int number) {
     int sum = 0;
     for (int i = 1; i <= number / 2; i++) {
          if (number % i == 0) {
              Sum += 1;
     }
     return sum == number;
int main() {
    int number;
    cout << "Enter a number: ";
    cin >> number;
    if (isPerfectNumber(number)) {
        cout << number << " is a perfect number." << endl;</pre>
    } else {
        cout << number << " is not a perfect number." << endl;</pre>
```

#include <iostream>

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```
3 DOOL ISTITUTE (THE TIME)
                                                                                        12 is not a prime number.
      if (number <= 1) {
          return false;
      for (int i = 2; i * i <= number; i++) {
          if (number % i == 0) {
              return false;
      return true;
7 int main() {
      int number;
      std::cout << "Enter a number: ";
      std::cin >> number;
      if (isPrime(number)) {
         std::cout << number << " is a prime number." << std::endl;</pre>
      } else {
         std::cout << number << " is not a prime number." << std::endl;
      return 0;
```



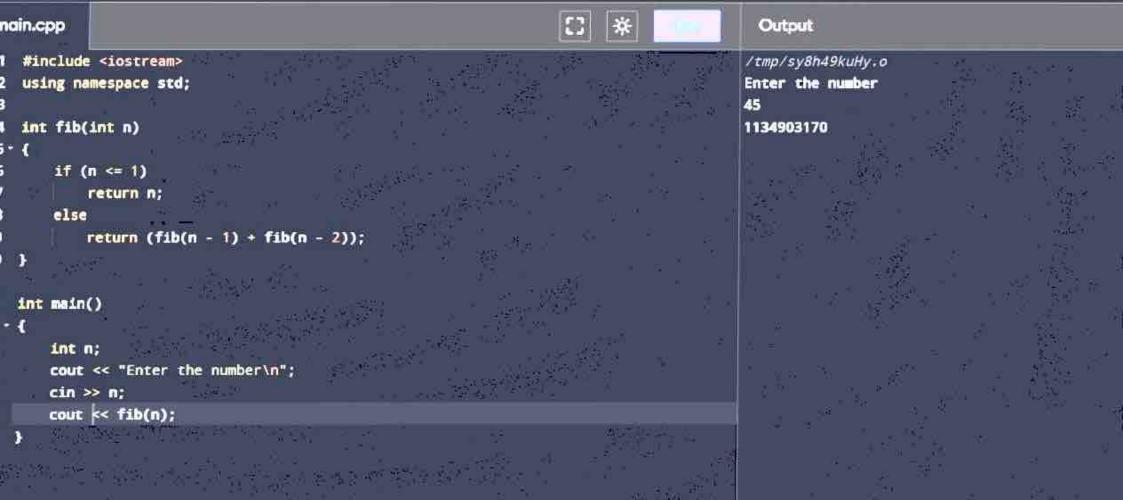
```
#include <iostream>
                                                                                         /tmp/PaaBTWF6Fz.o
using namespace std;
                                                                                         Enter a number: 54
                                                                                         54 is an even number.
int main() {
    int number;
    cout << "Enter a number: ";
    cin >> number;
    if (number % 2 == 0) {
        cout << number << " is an even number." << endl;
    } else {
        cout << number << " is an odd number." << endl;</pre>
    return 0;
```

```
string upperCaseStr = str;
          transform(upperCaseStr.begin(), upperCaseStr.end(), upperCaseStr.begin(),
              ::toupper);
          return upperCaseStr;
      }
      static string toLowerCase(const std::string& str) {
4 -
          string lowerCaseStr = str:
          transform(lowerCaseStr.begin(), lowerCaseStr.end(), lowerCaseStr.begin(),
              ::tolower);
          return lowerCaseStr:
      }
  };
  int main() {
      string inputStr;
      cout << "Enter a string: ";
      getline(std::cin, inputStr);
      string upperCaseStr = StringConverter::toUpperCase(inputStr);
      string lowerCaseStr = StringConverter::toLowerCase(inputStr);
      cout << "Upper case: " << upperCaseStr << endl;</pre>
      cout << "Lower case: " << lowerCaseStr << endl;
```

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```
1 #include <iostream>
                                                                                          /tmp/PaaBTWF6Fz.o.
2 using namespace std;
                                                                                          Enter a positive integer: 1234321
                                                                                           1234321 is a palindrome.
4 int main() {
      int num, reversedNum = 0, remainder, originalNum;
      cout << "Enter a positive integer: ";</pre>
      cin >> num:
      originalNum = num;
      // Reversing the number
      while (num != 0) {
          remainder = num % 10;
          reversedNum = reversedNum * 10 + remainder;
          num /= 10;
      // Checking if the number is palindrome
      if (originalNum == reversedNum) {
          cout << originalNum << " is a palindrome.";</pre>
      } else {
          cout << originalNum << " is not a palindrome.";</pre>
      return 0;
```



```
tmay o
sing namespace std;
                                                                                     The mo
nt main() {
  int arr[] = {3 ,43, 2 ,3 ,21 ,3 ,43 ,5} ;
  int n = sizeof(arr) / sizeof(arr[0]);
   std::map<int, int> frequencyMap;
   for (int i = 0; i < n; i \leftrightarrow ) {
       frequencyMap[arr[i]]++;
   }
   int mostFrequentElement = arr[0];
   int maxFrequency = frequencyMap[arr[0]];
    for (auto it = frequencyMap.begin(); it != frequencyMap.end(); --it) {
        if (it->second > maxFrequency) {
             mostFrequentElement = it->first;
             maxFrequency = it->second;
         ¥
    }
    std::cout << "The most frequent element is: " << mostFrequentElement << std
         ::endl;
     return 0;
```

LITERAGE THEFT

```
#include <iostream>
                                                                                        /tmp/r2dGOLqkLK.o
                                                                                        Enter the number: 13
using namespace std;
int main() {
                                                                                        Enter the bit position (0-indexed): 2
int number, bitPosition;
                                                                                        Number after setting the 2th bit: 13
cout << "Enter the number: ";
cin >> number;
cout << "Enter the bit position (0-indexed): ";</pre>
cin >> bitPosition;
number |= (1 << bitPosition);
cout << "Number after setting the " << bitPosition << "th bit: " << number << endl;</pre>
return 0;
```

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```
Designated and published
} else if (n == 1) {
                                                                                        /tmp/r2dGOLqkLK.o
   return 1;
                                                                                        Enter the value of N: 8
} else {
                                                                                        The 8th Fibonacci number is: 21
   int a = 0;
   int b = 1;
   int fib = 0;
   for (int i = 2; i \ll n; i \leftrightarrow ) {
        fib = a + b;
        a = b;
        b = fib;
    }
    return fib;
main() {
int n;
std::cout << "Enter the value of N: ";
std::cin >> n;
int result = fibonacci(n);
std::cout << "The " << n << "th Fibonacci number is: " << result << std::endl;</pre>
return 0;
```

```
1 #include <iostream>
                                                                                         /tmp/r2dGOLgkLK.o
                                                                                         Enter the base number: 5
2 using namespace std;
                                                                                         Enter the exponent: 4
                                                                                         5 raised to the power of 4 is: 625
4 double power(double base, int exponent) {
      double result = 1.0;
      for (int i = 0; i < exponent; i++) {
6 +
          result *= base;
      return result;
2 - int main() {
      double base;
      int exponent;
      cout << "Enter the base number: ";
      cin >> base;
      cout << "Enter the exponent: ";
      cin >> exponent;
      double result = power(base, exponent);
      cout << base << " raised to the power of " << exponent << " is: " << result <<
          endl;
      return 0;
```

Cureput

nain.cpp