Code Explanation

The Testing Fibonacci sequence function returns all the Fibonacci numbers under 4000000. The Prime check function return 1 if the given number is prime, and 0 if the given number is 0. The Factorize function factorizes a given number and the prime factorization returns all the prime factors, repeated for exponentials. Lastly, Pascal triangle function takes an input of the number of rows, and output the desired Pascal's Triangle.

Code Output

```
MS595/C_Project/assignment ; exit;
Testing Conditional Statements:
Enter a number: 0
zero

Testing Fibonacci Sequence:
1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, 233, 377, 610, 987, 1597, 2584,
   4181, 6765, 10946, 17711, 28657, 46368, 75025, 121393, 196418, 317811,
   514229, 832040, 1346269, 2178309, 3524578,
Testing Prime Check:
isprime(2) = 1
isprime(10) = 0
isprime(17) = 1

Testing Factorize:
Factors of 2: [1, 2]
Factors of 72: [1, 2, 3, 4, 6, 8, 9, 12, 18, 24, 36, 72]
Factors of 196: [1, 2, 4, 7, 14, 28, 49, 98, 196]

Testing Prime Factorization:
Prime factors of 2: [2]
Prime factors of 72: [2, 2, 2, 3, 3]
Prime factors of 196: [2, 2, 7, 7]

Testing Pascal's Triangle:
Enter the number of rows for the Pascal's Triangle: 5
1
1 1
1 2 1
1 3 3 1
```

```
1 4 6 4 1

Saving session...
...copying shared history...
...saving history...truncating history files...
...completed.

[Process completed]
```