

User manual

Just after running the code, the main menu will be displayed:

```
1: Simple Calculator
2: Scientific Calculator
3: Encoding and decoding of a word
4: Printing File Content(the history)
5: Clear all the file content(history)
0: End the program
Choose Option: |
```

Then you will have to choose an option from those:

Let's start from the beginning, choosing the first one (simple calculator):

```
Choose Option: 1
1: Adding two numbers x, y
2: Subtracting two numbers x, y
3: Multiplying two numbers x, y
4: Dividing two numbers x, y
5: Modulus of x / y
6: Back to the Main Menu
0: End the program
Choose Option:
```

Choosing the second one (scientific calculator):

```
Choose Option: 2
1: Square root of number x
2: Cubic root of number x
3: Absolute value of number x
4: e to the power of x
5: Prime factorization of number x
6: Factorial of number x
7: log of number x
8: ln of number x
9: Yth power of number x
10: Sin of number x
11: Cos of number x
12: Tan of number x
13: Sin^-1 x
14: Cos^-1 x
15: Tan^-1 x
16: Solving first degree equation
17: Solving second degree equation
18: Sum of Many numbers19: multiplication of many numbers
20: Back to the Main Menu
0: End the program
Choose Option: |
```

Choosing the third option (coding and encoding):

```
Choose Option: 3
Enter your word: PROGRAMMING
The word encoded is: RTQITCOOKOI
The word decoded (original) is: PROGRAMMING
..Main Menu..
1: Simple Calculator
2: Scientific Calculator3: Encoding and decoding of a word
4: Printing File Content(the history)
5: Clear all the file content(history)
0: End the program
Choose Option: |
```

You will be asked to enter the word you want to encode, after the process of encoded finishes, the encoded word and the original word will be displayed.

After that the main menu will be displayed again.

Choosing the furth option (printing file content):

```
Choose Option: 4
Encoding and decoding
The word encoded is: RTQITCOOKOI
The word decoded (original) is: PROGRAMMING
```

Choosing the fifth option (clearing all the file content(history)):

```
1: Simple Calculator
2: Scientific Calculator
3: Encoding and decoding of a word
4: Printing File Content(the history)
5: Clear all the file content(history)
0: End the program
Choose Option: |
```

Going deep into the application features

Starting with the simple calculator:

Checking the first option 1 (Adding two numbers x, y):

```
Choose Option: 1
1: Adding two numbers x, y
2: Subtracting two numbers x, y
3: Multiplying two numbers x, y
4: Dividing two numbers x, y
5: Modulus of x / y
6: Back to the Main Menu
0: End the program
Choose Option: 1
..Addition x + y..
x: -0.23
y: 0.354
The sum is: 0.12
```

The second option 2

```
1: Adding two numbers x, y
2: Subtracting two numbers x, y
3: Multiplying two numbers x, y
4: Dividing two numbers x, y
5: Modulus of x / y
6: Back to the Main Menu
0: End the program
Choose Option: 2
..Subtraction x - y..
x: 90.3
y: 90.1
The result is: 0.20
```

Third option multiplying:

```
1: Adding two numbers x, y
2: Subtracting two numbers x, y
3: Multiplying two numbers x, y
4: Dividing two numbers x, y
5: Modulus of x / y
6: Back to the Main Menu
0: End the program
Choose Option: 3
..multiplication x * y..
x: 4.3
y: -9
The result is: -38.70
```

Furth option (Dividing two numbers x, y):

```
1: Adding two numbers x, y
2: Subtracting two numbers x, y
3: Multiplying two numbers x, y
4: Dividing two numbers x, y
5: Modulus of x / y
6: Back to the Main Menu
0: End the program
Choose Option: 4
..Division x / y..
x: 9
y: 3
The result is: 3.00
```

Fifth option (modulus of number to a number):

```
1: Adding two numbers x, y
2: Subtracting two numbers x, y
3: Multiplying two numbers x, y
4: Dividing two numbers x, y
5: Modulus of x / y
6: Back to the Main Menu
0: End the program
Choose Option: 5
..modulus
x: 9
y: 2
The modulus is: 1.00
```

Sixth option (Backing to the main menu):

```
1: Adding two numbers x, y
2: Subtracting two numbers x, y
3: Multiplying two numbers x, y
4: Dividing two numbers x, y
5: Modulus of x / y
6: Back to the Main Menu
0: End the program
Choose Option: 6
..Main Menu..
1: Simple Calculator
2: Scientific Calculator
3: Encoding and decoding of a word
4: Printing File Content(the history)
5: Clear all the file content(history)
0: End the program
Choose Option: |
```

Last option (Ending the program):

```
1: Adding two numbers x, y
2: Subtracting two numbers x, y
3: Multiplying two numbers x, y
4: Dividing two numbers x, y
5: Modulus of x / y
6: Back to the Main Menu
0: End the program
Choose Option: 0
...The program is Ending...
.....Thanks.....
```

Going to the scientific calculator:

The first option (square root):

```
1: Square root of number x
2: Cubic root of number x
3: Absolute value of number x
4: e to the power of x
5: Prime factorization of number x
6: Factorial of number x
7: log of number x
8: ln of number x
9: Yth power of number x
10: Sin of number x
11: Cos of number x
12: Tan of number x
13: Sin^-1 x
14: Cos^-1 x
15: Tan^-1 x
16: Solving first degree equation
17: Solving second degree equation
18: Sum of Many numbers
19: multiplication of many numbers
20: Back to the Main Menu
0: End the program
Choose Option: 1
..Square root..x: 4
The square root is: 2.00
```

The second option (cubic root):

```
1: Square root of number x
2: Cubic root of number x
3: Absolute value of number x
4: e to the power of x
5: Prime factorization of number x
6: Factorial of number x
7: log of number x
8: ln of number x
9: Yth power of number x
10: Sin of number x
11: Cos of number x
12: Tan of number x
13: Sin^-1 x
14: Cos^-1 x
15: Tan^-1 x
16: Solving first degree equation17: Solving second degree equation
18: Sum of Many numbers
19: multiplication of many numbers
20: Back to the Main Menu
0: End the program
Choose Option: 2
..Cubic root..
x: 8.8
The cubicroot is 2.06
```

The third option (Absolute value):

```
1: Square root of number x
2: Cubic root of number x
3: Absolute value of number x
4: e to the power of x
5: Prime factorization of number x
6: Factorial of number x
7: log of number x
8: ln of number x
9: Yth power of number x
10: Sin of number x
11: Cos of number x
12: Tan of number x13: Sin^-1 x
14: Cos^-1 x
15: Tan^-1 x
16: Solving first degree equation
17: Solving second degree equation
18: Sum of Many numbers
19: multiplication of many numbers
20: Back to the Main Menu
0: End the program
Choose Option: 3
..Absolute Value..
x: -9
The absolute value is 9.00
```

The furth option (e to the power of x):

```
1: Square root of number x
2: Cubic root of number x
3: Absolute value of number x
4: e to the power of x
5: Prime factorization of number x
6: Factorial of number x
7: log of number x
8: ln of number x
9: Yth power of number x
10: Sin of number x
11: Cos of number x
12: Tan of number x13: Sin^-1 x
14: Cos^-1 x
15: Tan^-1 x
16: Solving first degree equation
17: Solving second degree equation
18: Sum of Many numbers
19: multiplication of many numbers
20: Back to the Main Menu
0: End the program
Choose Option: 4
..e to the power of x..
x: 7
The result is 1096.63
```

The fifth option (prime factorization of a number):

```
1: Square root of number x
2: Cubic root of number x
3: Absolute value of number x
4: e to the power of x
5: Prime factorization of number x
6: Factorial of number x
7: log of number x
8: ln of number x
9: Yth power of number x
10: Sin of number x
11: Cos of number x
12: Tan of number x
13: Sin^-1 x
14: Cos^-1 x
15: Tan^-1 x
16: Solving first degree equation
17: Solving second degree equation
18: Sum of Many numbers19: multiplication of many numbers
20: Back to the Main Menu
0: End the program
Choose Option: 5
..Prime factors of x..
x: 17896354
17896354|2
8948177|7
1278311|283
4517|4517
1
```

The sixth option (factorial of a number):

```
1: Square root of number x
2: Cubic root of number x
3: Absolute value of number x
4: e to the power of x
5: Prime factorization of number x
6: Factorial of number x
7: log of number x
8: ln of number x
9: Yth power of number x
10: Sin of number x
11: Cos of number x
12: Tan of number x
13: Sin^-1 x
14: Cos^-1 x
15: Tan^-1 x
16: Solving first degree equation
17: Solving second degree equation
18: Sum of Many numbers
19: multiplication of many numbers
20: Back to the Main Menu
0: End the program
Choose Option: 6
..Factorial x! x <= 20..
x: 18
The factorial is 6402373705728000
```


The seventh option (log of a number x):

```
1: Square root of number x
2: Cubic root of number x
3: Absolute value of number x
4: e to the power of x
5: Prime factorization of number x
6: Factorial of number x
7: log of number x
8: ln of number x
9: Yth power of number x
10: Sin of number x
11: Cos of number x
12: Tan of number x
13: Sin^-1 x
14: Cos^-1 x
15: Tan^-1 x
16: Solving first degree equation
17: Solving second degree equation
18: Sum of Many numbers
19: multiplication of many numbers
20: Back to the Main Menu
0: End the program
Choose Option: 7
x: 10
The log is: 1.000000
```

The eighth option (natural log of number x):

```
1: Square root of number x
2: Cubic root of number x
3: Absolute value of number x
4: e to the power of x
5: Prime factorization of number x
6: Factorial of number x
7: log of number x
8: ln of number x
9: Yth power of number x
10: Sin of number x
11: Cos of number x
12: Tan of number x
13: Sin^-1 x
14: Cos^-1 x
15: Tan^-1 x
16: Solving first degree equation
17: Solving second degree equation
18: Sum of Many numbers
19: multiplication of many numbers
20: Back to the Main Menu
0: End the program
Choose Option: 8
x: 93
The Natural log is: 4.532599
```

The ninth option (x to the power of y):

```
1: Square root of number x
2: Cubic root of number x
3: Absolute value of number x
4: e to the power of x
5: Prime factorization of number x
6: Factorial of number x
7: log of number x
8: ln of number x
9: Yth power of number x
10: Sin of number x
11: Cos of number x
12: Tan of number x
13: Sin^-1 x14: Cos^-1 x
15: Tan^-1 x
16: Solving first degree equation
17: Solving second degree equation
18: Sum of Many numbers
19: multiplication of many numbers
20: Back to the Main Menu
0: End the program
Choose Option: 9
x: 4
y: 2
The result is 16.00
```

Tenth option (sin of angle x):

```
1: Square root of number x
2: Cubic root of number x
3: Absolute value of number x
4: e to the power of x
5: Prime factorization of number x
6: Factorial of number x
7: log of number x8: ln of number x
9: Yth power of number x
10: Sin of number x
11: Cos of number x
12: Tan of number x
13: Sin^-1 x
14: Cos^-1 x15: Tan^-1 x
16: Solving first degree equation
17: Solving second degree equation
18: Sum of Many numbers
19: multiplication of many numbers
20: Back to the Main Menu
0: End the program
Choose Option: 10
x: 30
The sin is 0.50
```

Eleventh option (cos of angle x):

```
1: Square root of number x
2: Cubic root of number x
3: Absolute value of number x
4: e to the power of x
5: Prime factorization of number x
6: Factorial of number x7: log of number x
8: ln of number x
9: Yth power of number x
10: Sin of number x
11: Cos of number x
12: Tan of number x
13: Sin^-1 x
14: Cos^-1 x
15: Tan^-1 x
16: Solving first degree equation
17: Solving second degree equation
18: Sum of Many numbers
19: multiplication of many numbers
20: Back to the Main Menu
0: End the program
Choose Option: 11
x: 30
The cos is 0.87
```

Twelfth option (tan of angle x):

```
1: Square root of number x
2: Cubic root of number x
3: Absolute value of number x
4: e to the power of x
5: Prime factorization of number x
6: Factorial of number x
7: log of number x
8: ln of number x
9: Yth power of number x
10: Sin of number x
11: Cos of number x
12: Tan of number x
13: Sin^-1 x
14: Cos^-1 x
15: Tan^-1 x
16: Solving first degree equation17: Solving second degree equation
18: Sum of Many numbers
19: multiplication of many numbers
20: Back to the Main Menu
0: End the program
Choose Option: 12
x: 45
The tan is 1.00
```

Thirteenth option (inverse sin):

```
1: Square root of number x
2: Cubic root of number x
3: Absolute value of number x
4: e to the power of x
5: Prime factorization of number x
6: Factorial of number x
7: log of number x
8: ln of number x
9: Yth power of number x
10: Sin of number x
11: Cos of number x
12: Tan of number x
13: Sin^-1 x
14: Cos^-1 x
15: Tan^-1 x
16: Solving first degree equation
17: Solving second degree equation
18: Sum of Many numbers
19: multiplication of many numbers
20: Back to the Main Menu
0: End the program
Choose Option: 13
x: 0.5
The angle is 0.52 rads or 30.00 degrees
```

Fourteenth option (inverse cos):

```
1: Square root of number x
2: Cubic root of number x
3: Absolute value of number x
4: e to the power of x
5: Prime factorization of number x
6: Factorial of number x
7: log of number x
8: ln of number x
9: Yth power of number x
10: Sin of number x
11: Cos of number x
12: Tan of number x
13: Sin^-1 x
14: Cos^-1 x
15: Tan^-1 x
16: Solving first degree equation
17: Solving second degree equation
18: Sum of Many numbers
19: multiplication of many numbers
20: Back to the Main Menu
0: End the program
Choose Option: 14
x: 0.5
The angle is 1.05 rads or 60.00 degrees
```

Fifteenth option (inverse tan):

```
1: Square root of number x
2: Cubic root of number x
3: Absolute value of number x
4: e to the power of x
5: Prime factorization of number x
6: Factorial of number x
7: log of number x
8: ln of number x9: Yth power of number x
10: Sin of number x
11: Cos of number x
12: Tan of number x
13: Sin^-1 x
14: Cos^-1 x
15: Tan^-1 x
16: Solving first degree equation
17: Solving second degree equation
18: Sum of Many numbers
19: multiplication of many numbers
20: Back to the Main Menu
0: End the program
Choose Option: 15
x: 1
The angle is 0.79 rads or 45.00 degrees
```

Sixteenth option (solving first degree equation):

```
1: Square root of number x
2: Cubic root of number x
3: Absolute value of number x
4: e to the power of x
5: Prime factorization of number x
6: Factorial of number x
7: log of number x
8: ln of number x
9: Yth power of number x
10: Sin of number x11: Cos of number x
12: Tan of number x
13: Sin^-1 x
14: Cos^-1 x
15: Tan^-1 x
16: Solving first degree equation
17: Solving second degree equation
18: Sum of Many numbers
19: multiplication of many numbers
20: Back to the Main Menu
0: End the program
Choose Option: 16
...Solving first degree equation in the form Y = aX + c...
Enter the coefficient of x a: 4
Enter the pure coefficient c: 3
The solution is -0.75.
```

Seventeenth option (solving second degree equation):

```
1: Square root of number x
2: Cubic root of number x
3: Absolute value of number x
4: e to the power of x
5: Prime factorization of number x
6: Factorial of number x
7: log of number x
8: ln of number x
9: Yth power of number x
10: Sin of number x
11: Cos of number x
12: Tan of number x
13: Sin^-1 x
14: Cos^-1 x 15: Tan^-1 x
16: Solving first degree equation
17: Solving second degree equation
18: Sum of Many numbers
19: multiplication of many numbers
20: Back to the Main Menu
0: End the program
Choose Option: 17
...Solving second degree equations in the form  $Y = aX^2 + bx + c...$ 
Enter the coefficient of  $x^2$  a: 1
Enter the coefficient of x b: -1
Enter the pure coefficient c: -3
There are two solutions, which are 2.30 and -1.30
```

Eighteenth option (Adding long line of numbers):

```
1: Square root of number x
2: Cubic root of number x
3: Absolute value of number x
4: e to the power of x
5: Prime factorization of number x
6: Factorial of number x
7: log of number x
8: ln of number x
9: Yth power of number x
10: Sin of number x
11: Cos of number x
12: Tan of number x
13: Sin^-1 x
14: Cos^-1 x
15: Tan^-1 x
16: Solving first degree equation
17: Solving second degree equation
18: Sum of Many numbers
19: multiplication of many numbers
20: Back to the Main Menu
0: End the program
Choose Option: 18
Enter an arbitrary long line of numbers end it with 0!
1 2 3 0 4 5
The sum of the numbers is: 6.00
```

Adding long line of numbers (another way):

```
1: Square root of number x
2: Cubic root of number x
3: Absolute value of number x
4: e to the power of x
5: Prime factorization of number x
6: Factorial of number x
7: log of number x
8: ln of number x
9: Yth power of number x
10: Sin of number x
11: Cos of number x
12: Tan of number x
13: Sin^-1 x
14: Cos^-1 x
15: Tan^-1 x
16: Solving first degree equation
17: Solving second degree equation
18: Sum of Many numbers
19: multiplication of many numbers
20: Back to the Main Menu
0: End the program
Choose Option: 18
Enter an arbitrary long line of numbers end it with 0!
-1
2
4
-7 8 7
0
The sum of the numbers is: 13.00
```

'You can add each number in separate line or u can add all in the same line'

'The sum will only be the sum of the numbers before 0'

nineteenth option (multiplying long line of numbers):

```
1: Square root of number x
2: Cubic root of number x
3: Absolute value of number x
4: e to the power of x
5: Prime factorization of number x
6: Factorial of number x
7: log of number x
8: ln of number x
9: Yth power of number x
10: Sin of number x
11: Cos of number x
12: Tan of number x
13: Sin^-1 x
14: Cos^-1 x
15: Tan^-1 x
16: Solving first degree equation
17: Solving second degree equation
18: Sum of Many numbers
19: multiplication of many numbers
20: Back to the Main Menu
0: End the program
Choose Option: 19
Enter an arbitrary long line of numbers end it with 1!
4 -2
-5
1
The multiplicatin of the numbers is: 40.00
```

'You can add each number in separate line or u can add all in the same line'

'The product will only be the product of the numbers before 1'

multiplying long line of numbers (another way):

```
1: Square root of number x
2: Cubic root of number x
3: Absolute value of number x
4: e to the power of x
5: Prime factorization of number x
6: Factorial of number x
7: log of number x
8: ln of number x
9: Yth power of number x
10: Sin of number x
11: Cos of number x
12: Tan of number x
13: Sin^-1 x
14: Cos^-1 x
15: Tan^-1 x
16: Solving first degree equation
17: Solving second degree equation
18: Sum of Many numbers
19: multiplication of many numbers
20: Back to the Main Menu
0: End the program
Choose Option: 19
Enter an arbitrary long line of numbers end it with 1!
4 5 9 1
The multiplicatin of the numbers is: 180.00
```

Choosing the option of (back to the main menu):

```
1: Simple Calculator
2: Scientific Calculator
3: Encoding and decoding of a word
4: Printing File Content(the history)
5: Clear all the file content(history)
0: End the program
Choose Option: □
```