

main.c



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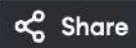
Clear

```
1  #include <stdio.h>
2  #include <stdlib.h>
3  #include <time.h>
4  #include <math.h>
5
6  int swapFirstLast(int n) {
7      if (n < 10) return n;
8      int d = log10(n);
9      int f = n / (int)pow(10, d), l = n % 10;
10     int m = (n % (int)pow(10, d)) / 10;
11     return l * (int)pow(10, d) + m * 10 + f;
12 }
13
14 int main() {
15     srand(time(0));
16     for (int i = 0; i < 5; i++) {
17         int num = rand() % 99990 + 10; // random 2-99999
18         printf("%d -> %d\n", num, swapFirstLast(num));
19     }
20     return 0;
21 }
```

```
67026 -> 67026
76836 -> 66837
32618 -> 82613
42833 -> 32834
64778 -> 84776
```

```
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```

main.c



Run

Output

Clear

```
1  #include <stdio.h>
2  #include <stdlib.h>
3  #include <time.h>
4
5  int main() {
6      int num, sum = 0;
7
8      srand(time(0));
9      num = rand() % 1000 + 1;
10
11     for (int i = 1; i <= num / 2; i++)
12         if (num % i == 0) sum += i;
13
14     printf("Random number: %d\n", num);
15     if (sum == num) printf("Perfect Number\n");
16     else printf("Not a Perfect Number\n");
17
18     return 0;
19 }
```

Random number: 173
Not a Perfect Number

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```
2  #include <stdlib.h>
3  #include <time.h>
4
5  int main() {
6      int num, temp, sum = 0, digit, fact, i;
7
8      srand(time(0));          // seed random generator
9      num = rand() % 1000 + 1;  // random number between 1 and
                                1000
10     printf("Random number: %d\n", num);
11
12     temp = num;
13     while (temp > 0) {
14         digit = temp % 10;
15         fact = 1;
16         for (i = 1; i <= digit; i++) fact *= i; // factorial of
                                digit
17         sum += fact;
18         temp /= 10;
19     }
20
21     if (sum == num) printf("%d is a Strong Number\n", num);
22     else printf("%d is NOT a Strong Number\n", num);
23
24     return 0;
25 }
```

Random number: 661
661 is NOT a Strong Number

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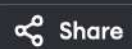
Clear

```
1 #include <stdio.h>
2 #include <stdlib.h>
3 #include <time.h>
4
5 int main() {
6     int n, i;
7     double sum = 0.0;
8
9     srand(time(0)); // seed random generator
10    n = rand() % 10 + 2; // pick random terms between 2 and 11
11    printf("Number of terms: %d\n", n);
12
13    for (i = 1; i <= n; i++) {
14        sum += (double)(2 * i - 1) / (2 * i); // series term
15    }
16
17    printf("Sum of series up to %d terms = %.4lf\n", n, sum);
18    return 0;
19 }
```

Number of terms: 2
Sum of series up to 2 terms = 1.2500

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Clear

```
1 #include <stdio.h>
2 #include <stdlib.h>
3 #include <time.h>
4
5 int main() {
6     int n, i;
7     double sum = 0.0;
8
9     srand(time(0)); // seed random generator
10    n = rand() % 10 + 2; // pick random terms between 2 and 11
11    printf("Number of terms: %d\n", n);
12
13    for (i = 1; i <= n; i++) {
14        sum += (double)(2 * i) / (4 * i - 1);
15    }
16
17    printf("Sum of series up to %d terms = %.4lf\n", n, sum);
18    return 0;
19 }
```

Number of terms: 11
Sum of series up to 11 terms = 5.9383

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Clear

```
1 #include <stdio.h>
2
3 int main() {
4     int i, j;
5
6     for (i = 1; i <= 5; i++) {        // 5 rows
7         for (j = 1; j <= 5; j++) {    // 5 stars in each row
8             printf("*");
9         }
10        printf("\n"); // move to next line
11    }
12
13    return 0;
14 }
```

```
*****
*****
*****
*****
*****
```

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```
1 #include <stdio.h>
2
3 int main() {
4     int i, j;
5
6     for (i = 1; i <= 5; i++) {        // 5 rows
7         for (j = 1; j <= i; j++) {    // stars equal to row number
8             printf("*");
9         }
10        printf("\n"); // move to next line
11    }
12
13    return 0;
14 }
```

```
*
**
***
****
*****
```

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Clear

```
1 #include <stdio.h>
2
3 int main() {
4     int i, j;
5
6     for (i = 1; i <= 5; i++) {          // 5 rows
7         for (j = 1; j <= i; j++) {      // print numbers up to 'i'
8             printf("%d", j);
9         }
10        printf("\n"); // move to new line after each row
11    }
12
13    return 0;
14 }
```

```
1
12
123
1234
12345
```

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Output

Clear

```
1 #include <stdio.h>
2
3 int main() {
4     int i, j;
5
6     for (i = 1; i <= 5; i++) { // rows
7         for (j = 6 - i; j <= 5; j++) { // numbers in row
8             printf("%d", j);
9         }
10        printf("\n"); // next line
11    }
12
13    return 0;
14 }
```

5
45
345
2345
12345

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```
1  #include <stdio.h>
2
3  int main() {
4      int i, j;
5
6      for (i = 1; i <= 5; i++) {          // rows
7          for (j = 1; j < i; j++)          // print spaces
8              printf(" ");
9          for (j = 5; j >= i; j--)          // print stars
10             printf("*");
11         printf("\n");
12     }
13
14     return 0;
15 }
16
```

```
*****
****
***
**
*
```

=== Code Execution Successful ===