

- ① factorial ② fibonacci  
 ③ HCF/GCD ④ Add 1 in every  
 digit  
 ⑤ Prime Number ⑥ -

$n = \boxed{4568} \rightarrow$  Extract Three  
 digits

Modulus → Digits from given  
 numbers.

② Extract the digits from  
 Given Number and Print  
 $\downarrow$

$$n = 2568; \Rightarrow \boxed{10}$$

$$\text{rem} = n \% 10 \Rightarrow \overline{2568} \% 10;$$

$$\text{rem} \Rightarrow \boxed{8 \rightarrow 8}$$

$$n = 2568 / 10; \Rightarrow \boxed{256=n}$$

$$\text{rem} = n \% 10; = 6, 5, 2$$

$$n = n / 10; \Rightarrow 25, 2, 0$$

$$n = 4568; \quad \boxed{1024}$$

$$\begin{aligned} \text{rem} &= n \% 10; \rightarrow 8, 6, 5, 4 \\ \text{print} &= ("%", rem); \rightarrow \boxed{8, 6, 5, 4} \\ n &= n / 10; \rightarrow \boxed{456, 45, 4, 0} \end{aligned}$$

③ factorial:

$$\begin{aligned} L5 &= 5 \times 4 \times 3 \times 2 \times 1; \\ &= \boxed{120} \end{aligned}$$

$$L6 = 6 \times 5 \times 4 \times 3 \times 2 \times 1;$$

→ ④ WAP to find the factorial of  
 Given Number By User?

```
int n;
int result = 1;
printf("Enter the Number to calculate factorial");
scanf("%d", &n);
do {
    while(n > 1) {
        result = result * n;
        n = n - 1;
    }
    printf("The result is %d", result);
} while(result < 1);

```

6 × 5 × 4 × 3 × 2 × 1  
 $\frac{6}{\cancel{6}} \times \frac{5}{\cancel{5}} \times \frac{4}{\cancel{4}} \times \frac{3}{\cancel{3}} \times \frac{2}{\cancel{2}} \times \frac{1}{\cancel{1}}$   
 result =  $\boxed{6}$

6 × 5 × 4 × 3 × 2  
 $\frac{6}{\cancel{6}} \times \frac{5}{\cancel{5}} \times \frac{4}{\cancel{4}} \times \frac{3}{\cancel{3}} \times \frac{2}{\cancel{2}}$   
 result =  $\boxed{120}$

6 × 5 × 4  
 $\frac{6}{\cancel{6}} \times \frac{5}{\cancel{5}} \times \frac{4}{\cancel{4}}$   
 result =  $\boxed{120}$

6 × 5 × 4 × 3 × 2  
 $\frac{6}{\cancel{6}} \times \frac{5}{\cancel{5}} \times \frac{4}{\cancel{4}} \times \frac{3}{\cancel{3}} \times \frac{2}{\cancel{2}}$   
 result =  $\boxed{120}$

6 × 5 × 4 × 3 × 2 × 1  
 $\frac{6}{\cancel{6}} \times \frac{5}{\cancel{5}} \times \frac{4}{\cancel{4}} \times \frac{3}{\cancel{3}} \times \frac{2}{\cancel{2}} \times \frac{1}{\cancel{1}}$   
 result =  $\boxed{120}$

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$$\begin{aligned} t_1 &= 0; \rightarrow 1^{\text{st}} \text{ term} \\ t_2 &= 1; \rightarrow 2^{\text{nd}} \text{ term} \end{aligned}$$

→ ⑤ WAP to print fibonacci sequence and  
 to How many terms are printed should be entered by  
 user

```
int t1 = 0; int sum;
int t2 = 1;
int n;
printf("Enter the terms"); // t1 = 0, t2 = 1
scanf("%d", &n);
for (int i = 1; i < n; i++) {
    sum = t1 + t2;
    t1 = t2;
    t2 = sum;
    printf("%d ", sum);
}
```

```

for(i=3; i<n; i++)
{
    sum = t1+t2;
    t1=t2; t2 = sum;
    printf("%d", sum);
}
    
```

```

if(n==1)
{
    print(t1)
}
else
{
    printf("%d", t1);
    print(t2)
}
    
```

Q Highest Common Factor?

~~13, 17~~

In the case of Prime Number  
HCF is always 1

Q Print all the Divisors of Given Number

⑬  $\Rightarrow 1, 3, 5, 15 \rightarrow$

$36 \Rightarrow 1, 2, 3, 4, 6, 9, 12, 18, 36$

$i=1$

$n=36; \text{ while } (i \leq n)$

$i=1$       { if ( $n \% i == 0$ )  
 $i=2$       { { print("x.d", i);  
 $i=3$       {  
 $i=4$       { i++;  
 $i=5$  } max } } }  
 max (12)

$n=12$       {  
 $n=36$  }  
 $i=1$       {  
 $i=2$       {  
 $i=3$       {  
 $i=4$       {  
 $i=5$  } } }  
 $i=6$  } } }  
 $i=7$  } } }  
 $i=8$  } } }  
 $i=9$  } } }  
 $i=10$  } } }  
 $i=11$  } } }  
 $i=12$  } } }  
 $i=13$  } } }  
 $i=14$  } } }  
 $i=15$  } } }  
 $i=16$  } } }  
 $i=17$  } } }  
 $i=18$  } } }  
 $i=19$  } } }  
 $i=20$  } } }  
 $i=21$  } } }  
 $i=22$  } } }  
 $i=23$  } } }  
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 $i=25$  } } }  
 $i=26$  } } }  
 $i=27$  } } }  
 $i=28$  } } }  
 $i=29$  } } }  
 $i=30$  } } }  
 $i=31$  } } }  
 $i=32$  } } }  
 $i=33$  } } }  
 $i=34$  } } }  
 $i=35$  } } }  
 $i=36$  } } }

$i \leq n$   
 ~~$i \leq n$~~   $(n \% i == 0)$   
 ~~$i \leq n$~~   $i = 2$   
 $i \% i == 0$

max = 1  
 $i = 1$   
break

$n_1=12;$   
 $n_2=36;$   
 $i=n_1;$   
 $n_1=16;$   
 $n_2=30;$   
 $i=16;$

while ( $i >= 1$ )  
{  
if ( $(n_1 \% i == 0) \& (n_2 \% i == 0)$ )  
{  
max = i;  
break;  
}  
i++;  
}  
max2  
max5

$n_1=12, n_2=36, i=16;$   

16	16	30
0	x	y
1	0	x
2	x	x
3	1	x
4	6	x
5	8	x
6	0	x
7	5	x
8	7	x
9	6	x
10	5	x
11	4	x
12	3	x
13	2	x
14	1	x
15	0	x
16	0	x

  
 $i=10$

$i > n_2$   
 $i > n_1$   
max

$10, 9, 8, 7, 6, 5, 4, 3, 2, 1$   
 $36 \Rightarrow 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13$

10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20

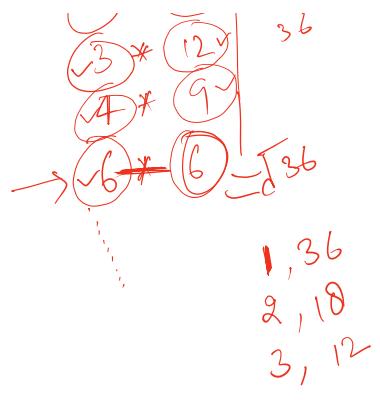
21, 22, 23, 24, 25, 26, 27

28, 29, 30, 31, 32

33, 34, 35, 36

66

factor  
 $1 \times 36$   
 $2 \times 18$



```

i=1    n = 36
while ( i < @sqrt(n) )
{
    if ( n % i == 0 )
        {
            print(i);
            print( n / i );
        }
    i++;
}

```