Tail Recursion

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```
void fun(int n)
{
  if (n==0)
    return;
  print(n);
  fun(n-1);
}
```

This will take less time than this

```
void fun(int n)
{
  if (n==0)
    return;
  fun(n-1);
  print(n);
}
```

This can be converted to Tail recursion

```
void fun(int n, int k)
{
  k=1
  if (n==0)
    return;
  print(k);
  fun(n-1, k+1);
}
```

Parent function have nothing to do when child function is finished → Tail recursion

```
int fact(int n)
{
  if (n==0 || n==1)
    return 1;
  return n * fact(n-1);
}
```

To convert

→ NOT a tail recursion

```
int fact(int n, int k)
{
  k=1
  if (n==0 || n==1)
    return k;
  return fact(n-1, k*n)
}
```

fact(3,1)

→ fact(2, 1*3)

→ fact(1, 1*3*2)

↓

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