

CPSC 231 - Lab

CONDITONS I



Let's make
pasta!

What is algorithm?

- ✓ A process or set of rules to be followed in calculations or other problem-solving operations, especially by a computer.

Pasta Algorithm!

Boil water in a large pot: use at least 4 quarts of water for every pound of noodles.

Salt the water with at least a tablespoon

Add pasta

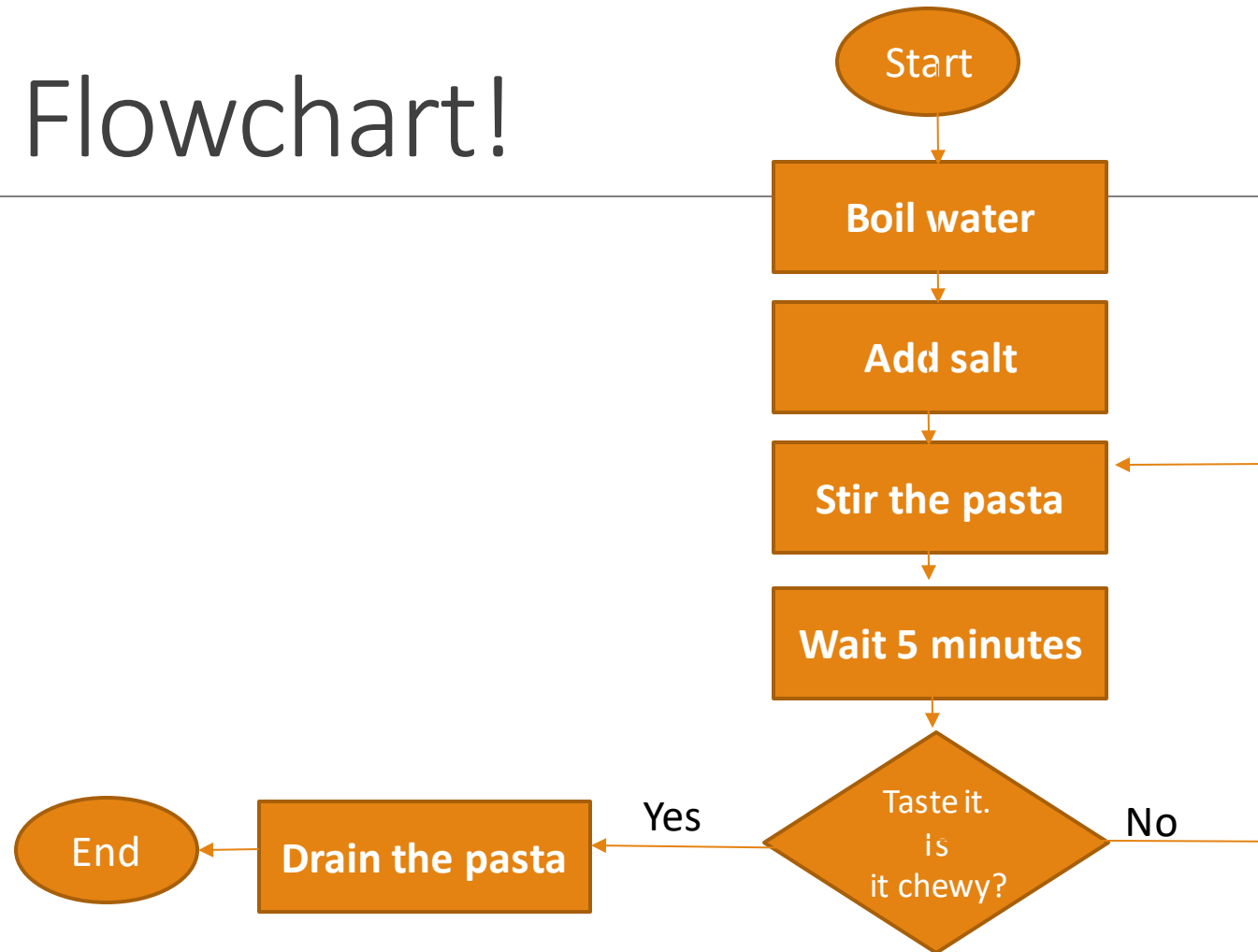
Stir the pasta: Do it every 5 minutes.

Test the pasta by tasting it: Pasta cooked properly should be a little chewy.

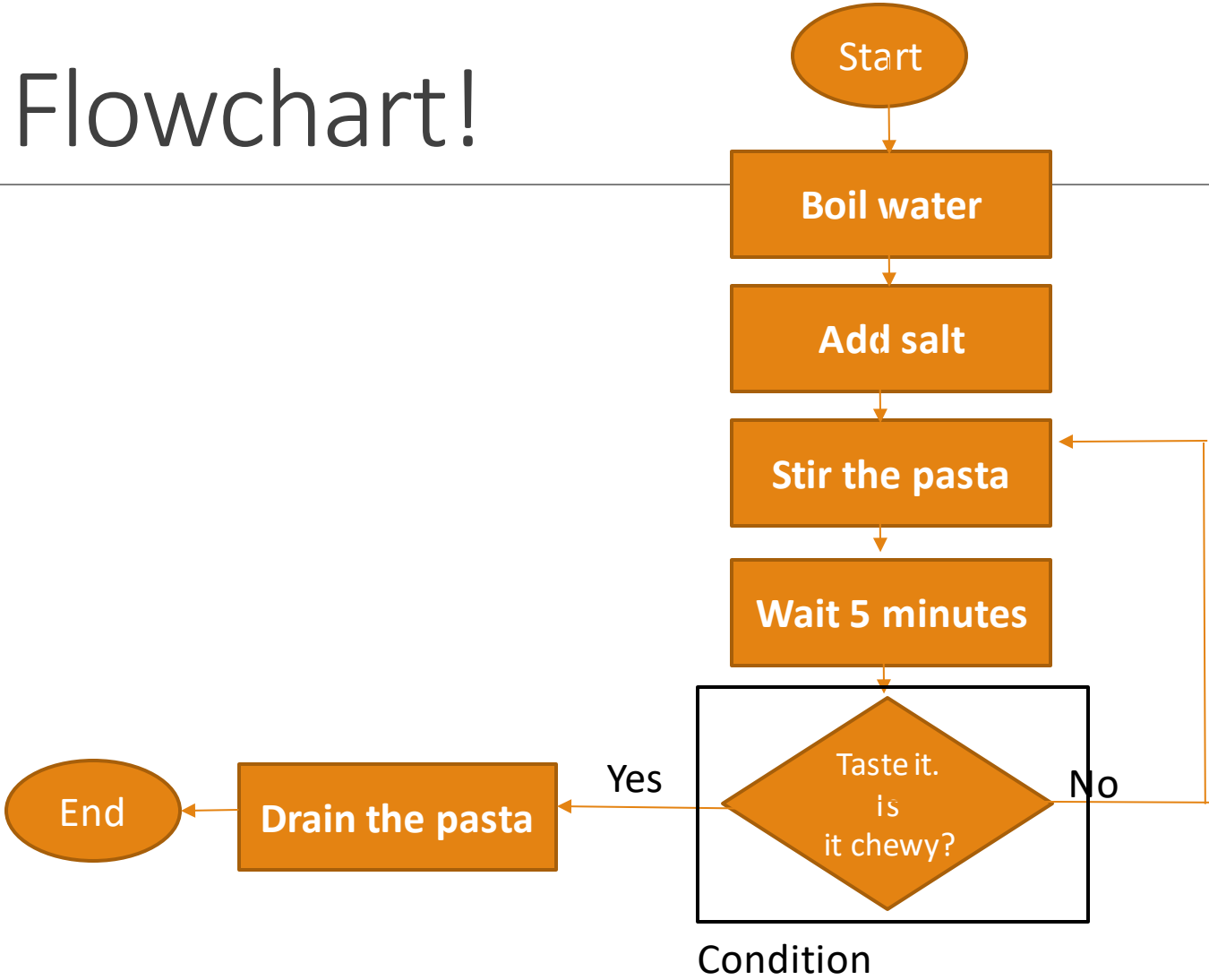
Drain the pasta

Enjoy your pasta

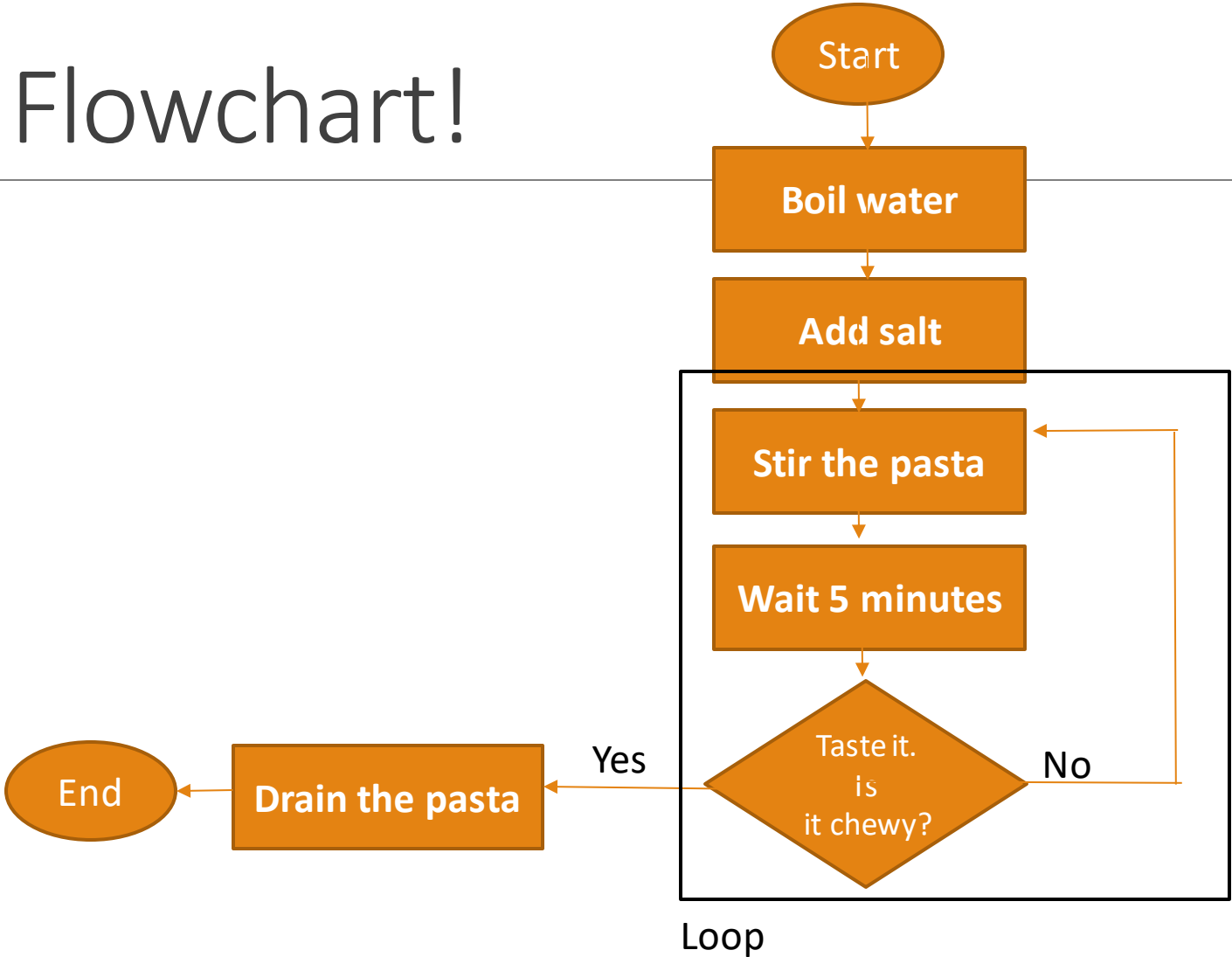
Pasta Flowchart!



Pasta Flowchart!



Pasta Flowchart!



Factorial (n!)

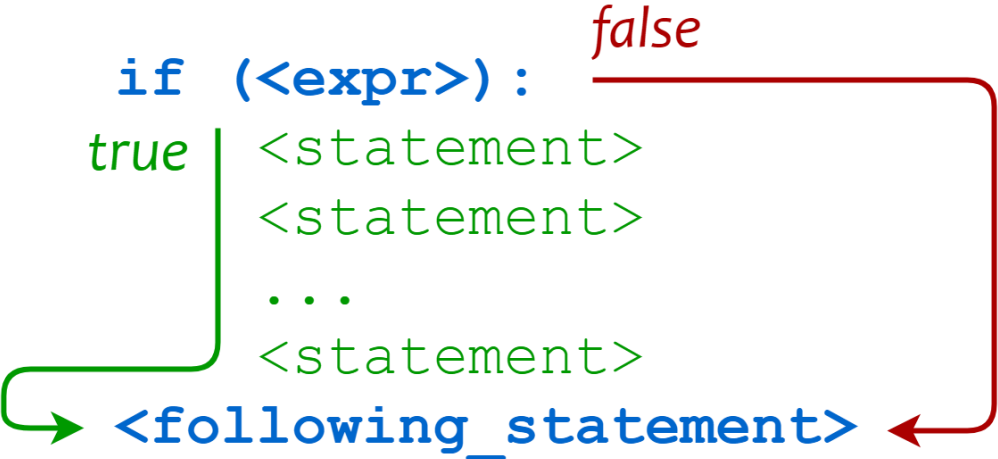
1. Get a number and put in n
2. if n is equal to 0, print 1 and go to 8
3. put n into sum
4. $n = n - 1$
5. if is n equal to 0, go to 7
6. $sum = sum * n$ and go to 4
7. print sum
8. end

Conditions - if

```
if EXPRESSION:  
    TABSTATEMENT
```

```
age = int(input("Enter your age!"))  
  
if age > 17:  
    print("You can buy alcohol")  
if age <= 17:  
    print("You cannot buy alcohol")
```

```
if (<expr>): false  
true | <statement>  
      | <statement>  
      | ...  
      | <statement>  
      |  
      | <following_statement> ←
```



Conditions - nested if

```
if EXPRESSION:  
    TAB if EXPRESSION2:  
        TABTAB if EXPRESSION3:  
            TABTABTAB STATEMENT
```

```
age = int(input("Enter your age!"))  
state = int(input("Enter your state!"))  
  
if age <= 17:  
    print("You cannot buy alcohol")  
if age > 18:  
    if age >= 19:  
        print("You can buy alcohol")  
    if age < 19:  
        if state == "Alberta":  
            print("You cannot buy alcohol")  
        if state == "Quebec":  
            print("You can buy alcohol")
```

Conditions - nested if

```
if EXPRESSION:  
    TABif EXPRESSION2:  
        TABTABSTATEMENT
```

```
age = int(input("Enter your age!"))  
state = int(input("Enter your state!"))  
  
if state == "Alberta":  
    if age > 17:  
        print("You can buy alcohol")  
    if age <= 17:  
        print("You cannot buy alcohol")  
if state == "Quebec":  
    if age > 18:  
        print("You can buy alcohol")  
    if age <= 18:  
        print("You cannot buy alcohol")
```

Conditions - And Condition

```
if EXPRESSION and/or EXPRESSION2:  
TABSTATEMENT
```

```
age = int(input("Enter your age!"))  
state = int(input("Enter your state!"))  
  
if state == "Alberta" and age > 17:  
    print("You can buy alcohol")  
if state == "Alberta" and age <= 17:  
    print("You cannot buy alcohol")  
if state == "Quebec" and age > 18:  
    print("You can buy alcohol")  
if state == "Quebec" and age <= 18:  
    print("You cannot buy alcohol")
```

Conditions - Or Condition

```
if EXPRESSION and/or EXPRESSION2:  
    TABSTATEMENT
```

```
age = int(input("Enter your age!"))  
state = int(input("Enter your state!"))  
  
if state == ("Alberta" and age > 17) or (state == "Quebec" and age > 18):  
    print("You can buy alcohol")  
if state == ("Alberta" and age <= 17) or (state == "Quebec" and age <= 18):  
    print("You can buy alcohol")
```

Conditions - Or Cond

```
age = int(input("Enter your age!"))
state = int(input("Enter your state!"))

if age <= 17:
    print("You cannot buy alcohol")
if age > 18:
    if age >= 19:
        print("You can buy alcohol")
if age < 19:
    if state == "Alberta":
        print("You cannot buy alcohol")
    if state == "Quebec":
        print("You can buy alcohol")
```

```
age = int(input("Enter your age!"))
state = int(input("Enter your state!"))

if state == "Alberta":
    if age > 17:
        print("You can buy alcohol")
    if age <= 17:
        print("You cannot buy alcohol")
if state == "Quebec":
    if age > 18:
        print("You can buy alcohol")
    if age <= 18:
        print("You cannot buy alcohol")
```

```
age = int(input("Enter your age!"))
state = int(input("Enter your state!"))

if state == "Alberta" and age > 17:
    print("You can buy alcohol")
if state == "Alberta" and age <= 17:
    print("You cannot buy alcohol")
if state == "Quebec" and age > 18:
    print("You can buy alcohol")
if state == "Quebec" and age <= 18:
    print("You cannot buy alcohol")
```

```
age = int(input("Enter your age!"))
state = int(input("Enter your state!"))

if state == ("Alberta" and age > 17) or (state
== "Quebec" and age > 18):
    print("You can buy alcohol")
if state == ("Alberta" and age <= 17) or (state
== "Quebec" and age <= 18):
    print("You can buy alcohol")
```

