

JULIA PROGRAMMING

Conditionals and Loops

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Conditionals & Loops

- All the tasks in the given order
- Choose among alternatives that meet certain conditions
- Do the given tasks until certain conditions are met / not met

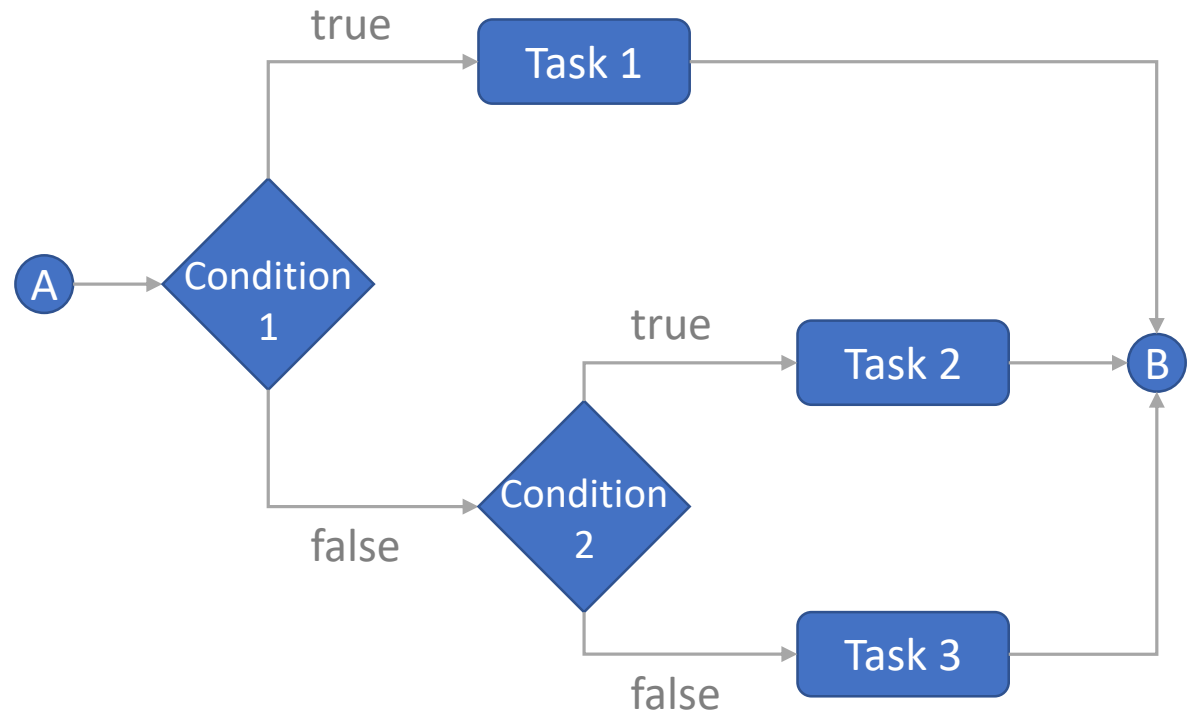
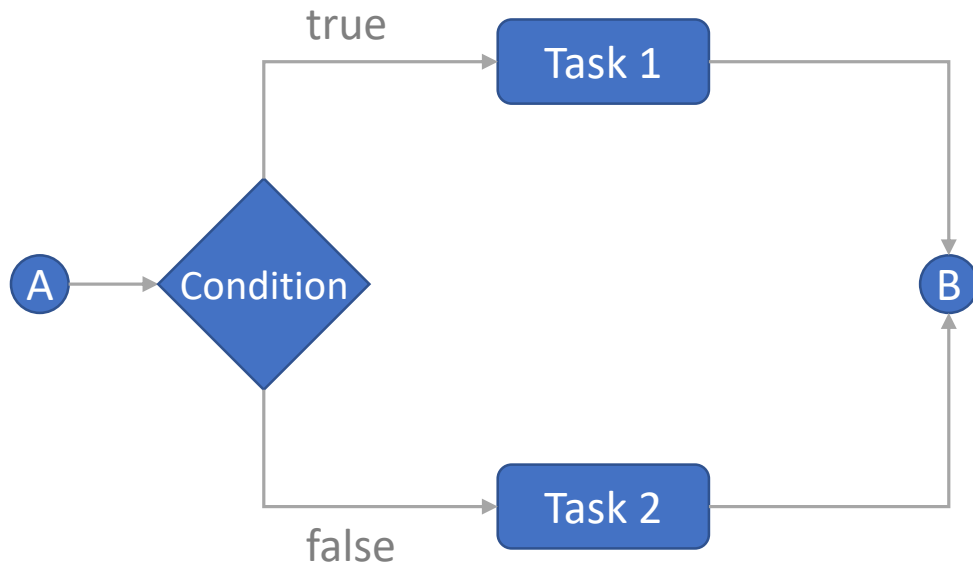
Sequential Tasks

- All the tasks in the given order



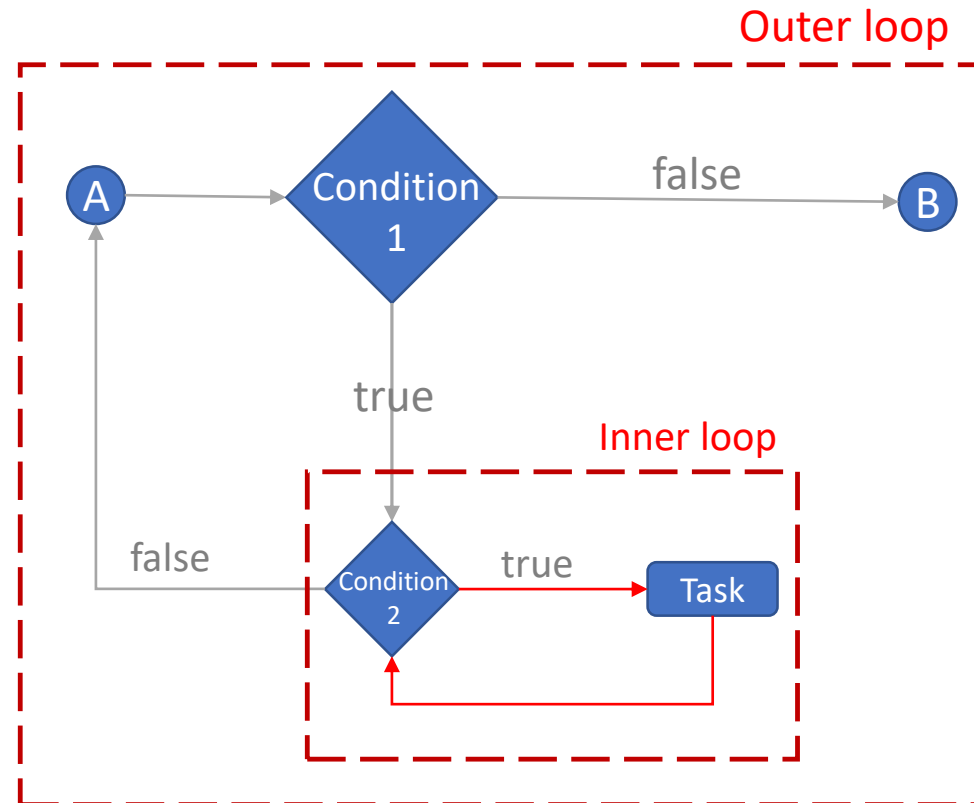
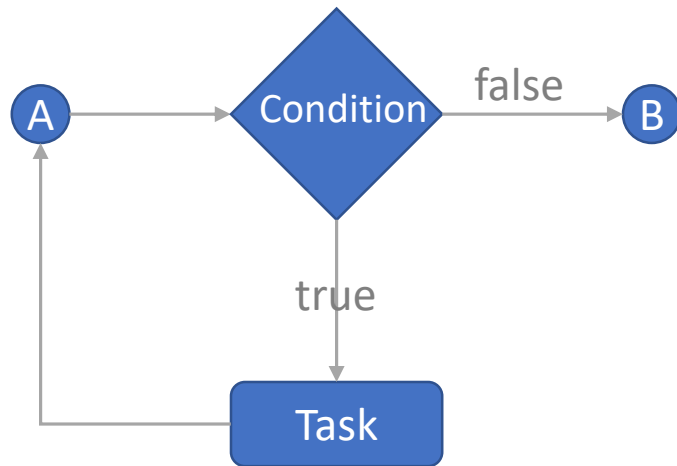
Conditionals

- Choose among alternatives that meet certain conditions

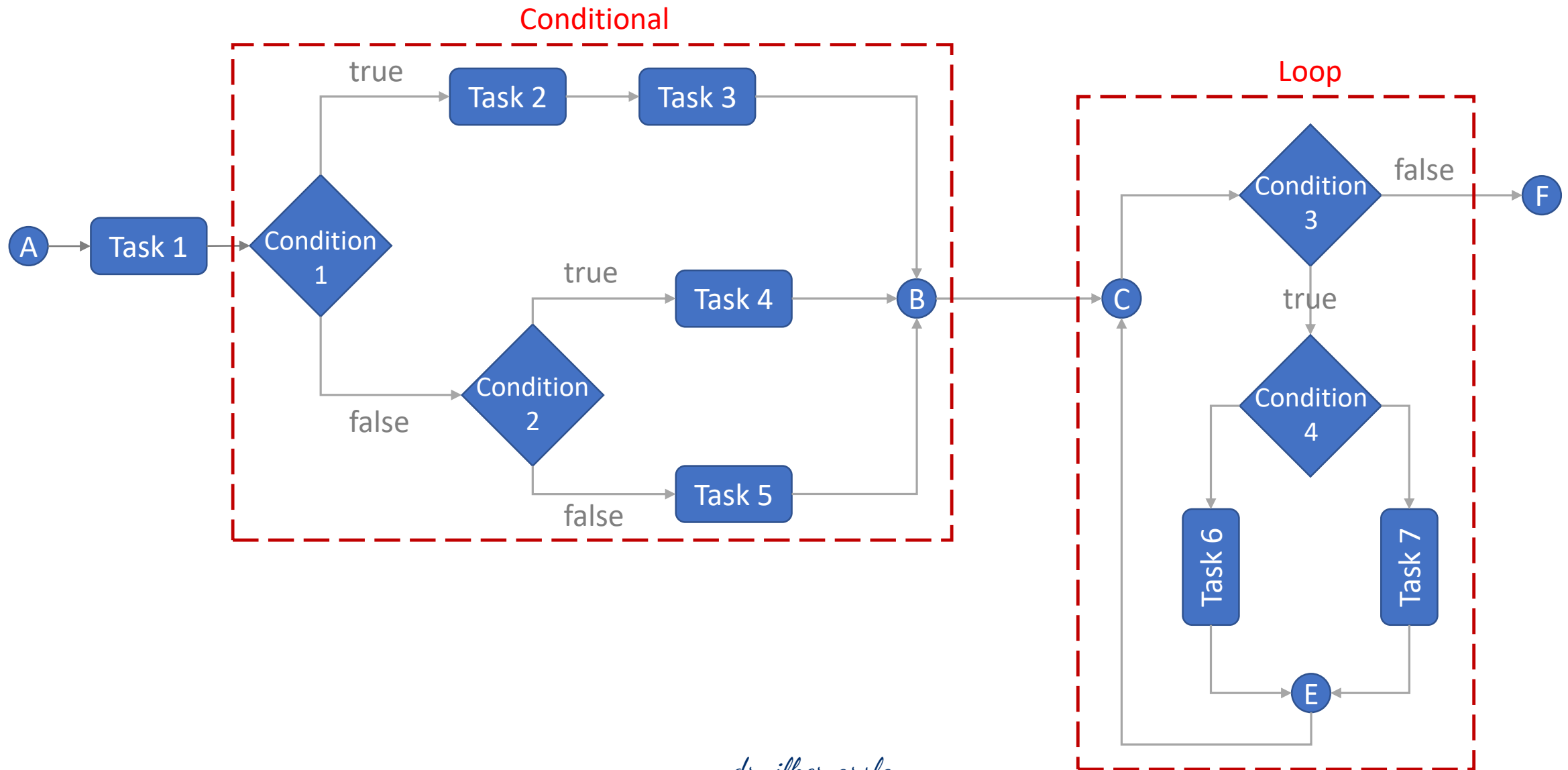


Loops

- Do the given tasks until certain conditions are met / not met



Together



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Compound Expressions

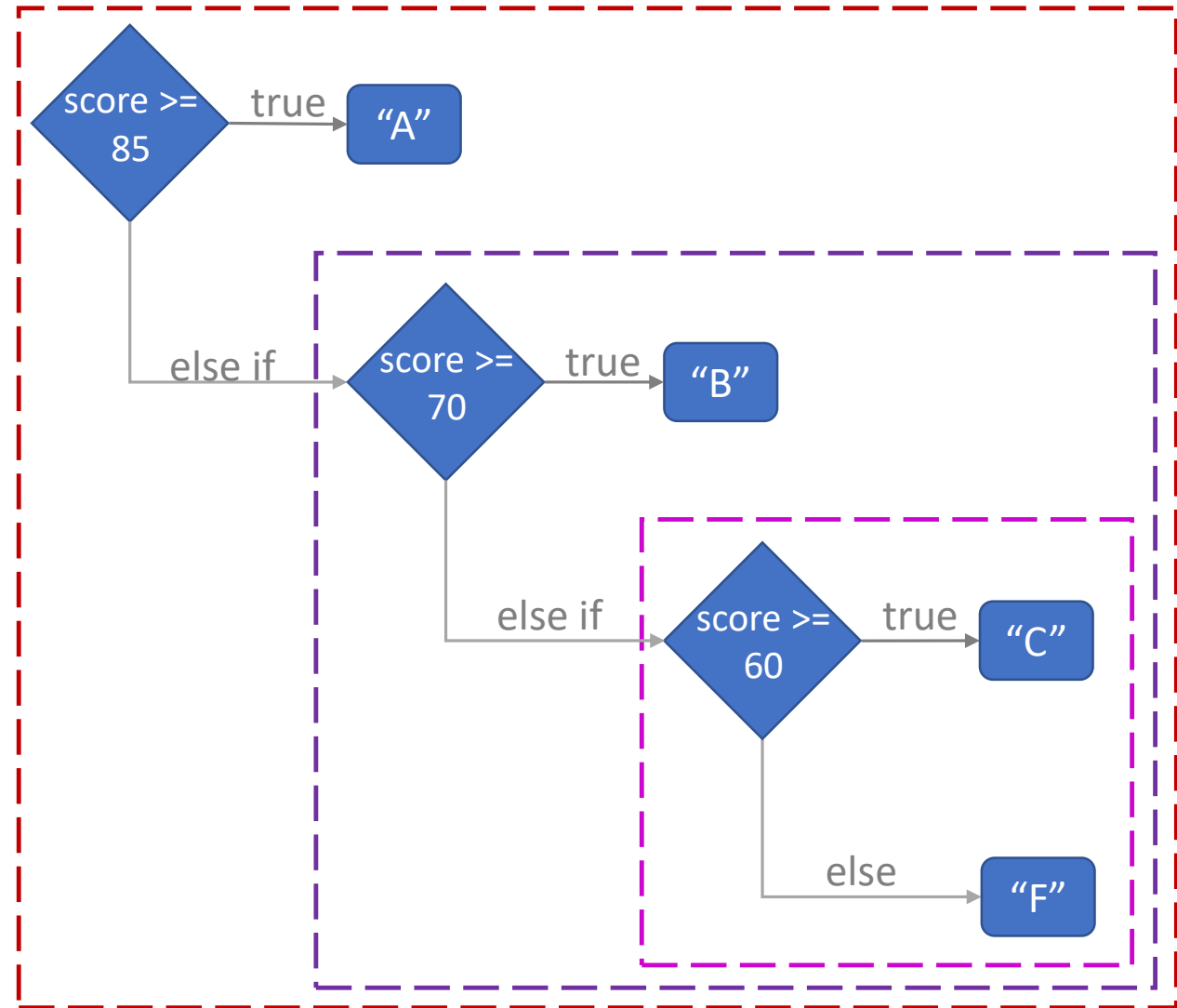
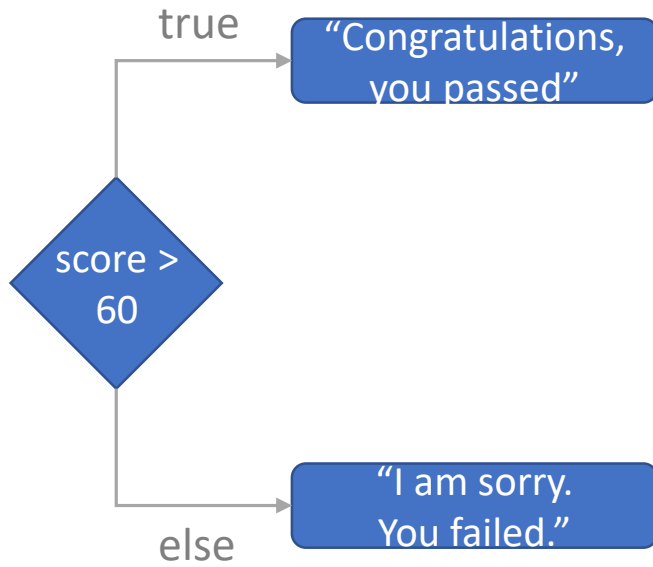
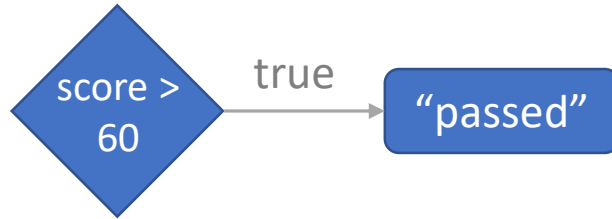
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Conditional Evaluation

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Conditionals



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Short-Circuit Evaluation

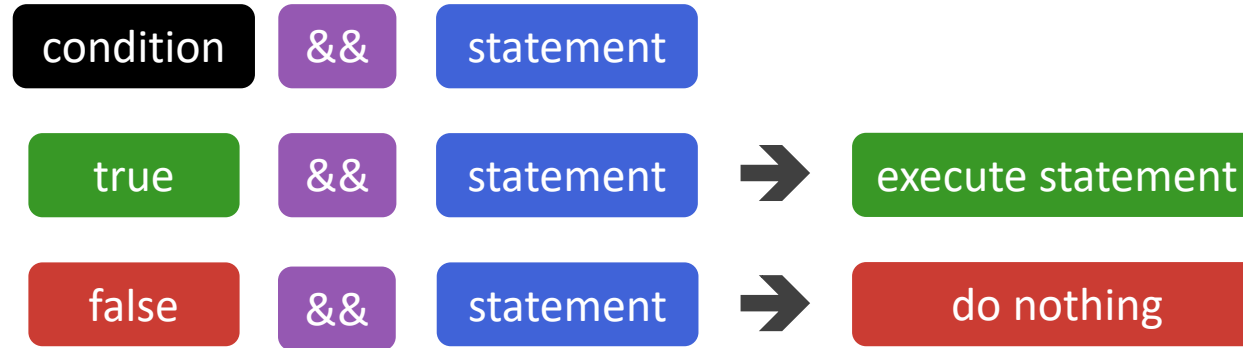
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Short-Circuit Evaluation: &&

| cond 1 | && | cond 2 | = | result |
|--------|----|--------|---|--------|
| true | && | true | = | true |
| true | && | false | = | false |
| false | && | true | = | false |
| false | && | false | = | false |

| cond | && | statement | = | result |
|-------|----|--------------------|---|--------|
| | | statement executed | = | true |
| false | && | statement | = | false |
| true | && | statement | = | true |

Short-Circuit Evaluation: &&



```
if condition == true  
    execute the statement  
end
```



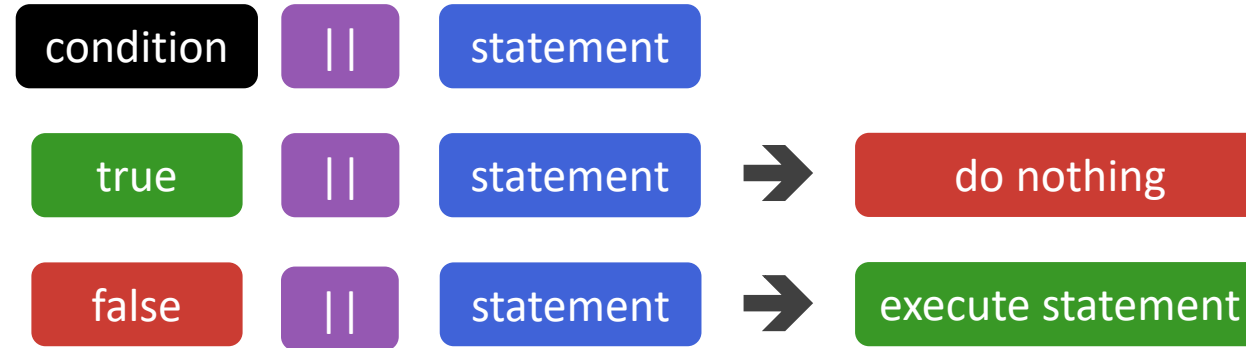
```
condition && statement
```

Short-Circuit Evaluation: ||

| cond 1 | | cond 2 | = | result |
|--------|--|--------|---|--------|
| true | | true | = | true |
| true | | false | = | true |
| false | | true | = | true |
| false | | false | = | false |

| cond | | statement | = | result |
|-------|--|--------------------|---|--------|
| | | statement executed | = | true |
| true | | statement | = | true |
| false | | statement | = | true |

Short-Circuit Evaluation: ||



```
if condition == false  
    execute the statement  
end
```



```
condition || statement
```

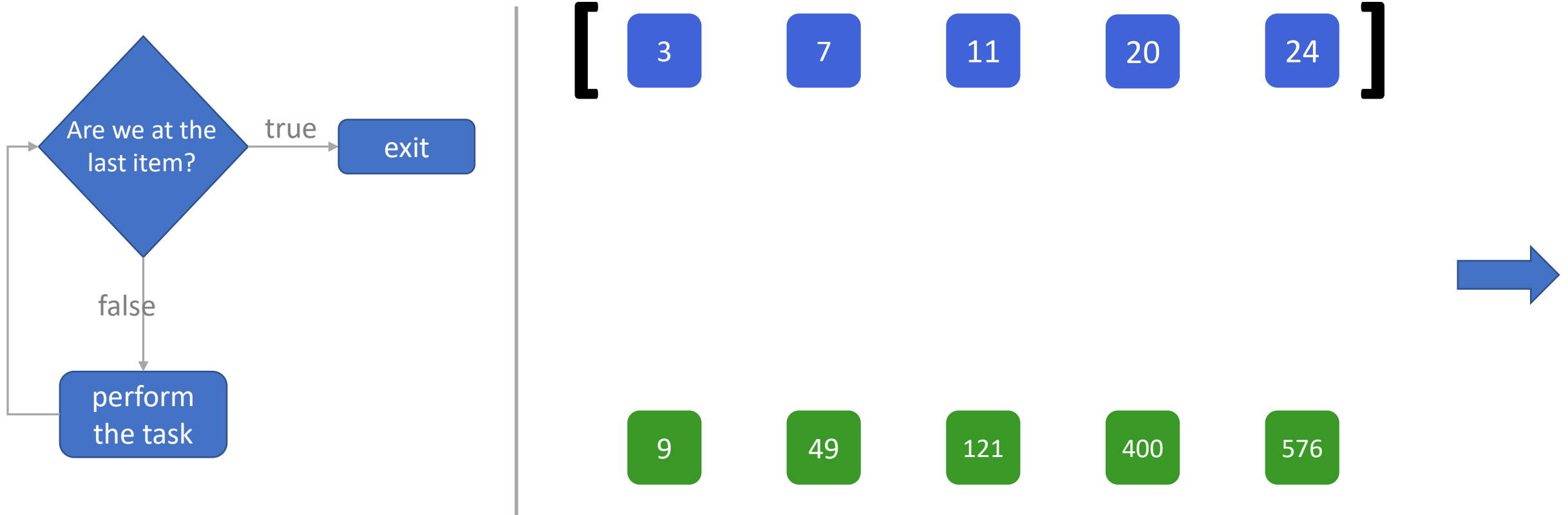
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For Loops

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For Loops

Perform a task for a predetermined number of times.



For Loops

```
for <iterator> in <range>  
    <statements>  
end
```

```
for i in 1:4  
    println(i^2)  
end
```

| | | |
|-----|---|-------------|
| i=1 | → | println(1) |
| i=2 | → | println(4) |
| i=3 | → | println(9) |
| i=4 | → | println(16) |

```
end
```

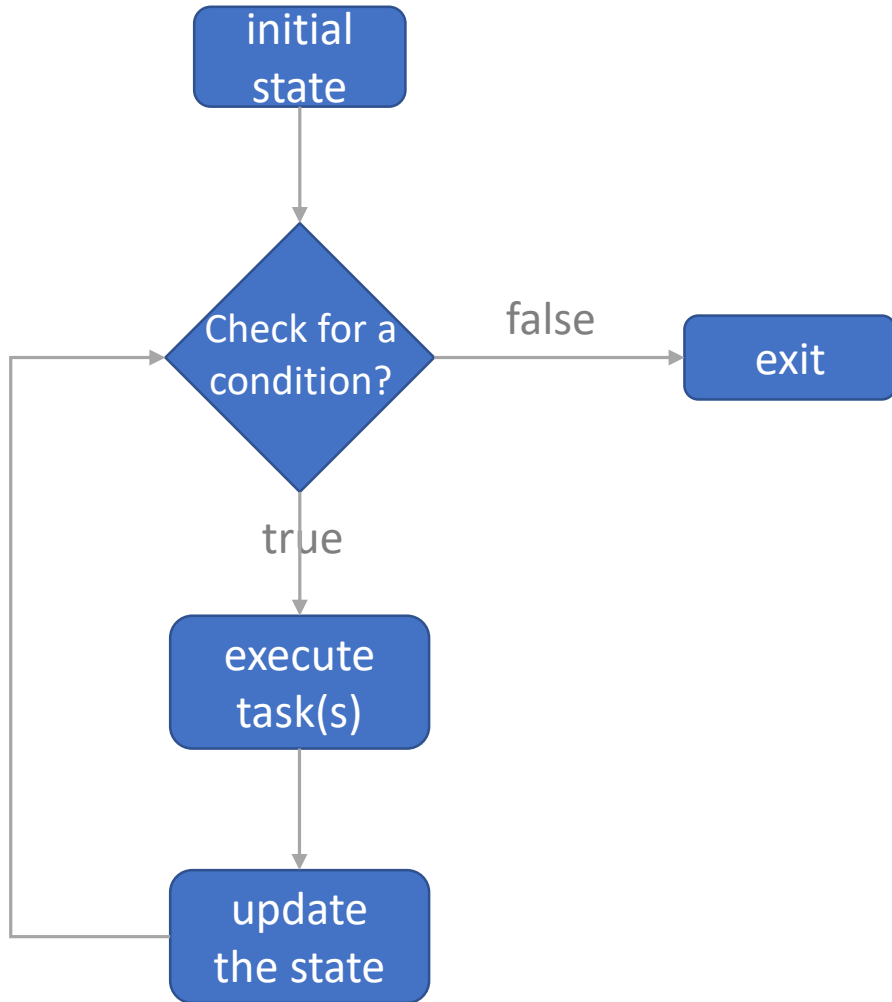
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While Loops

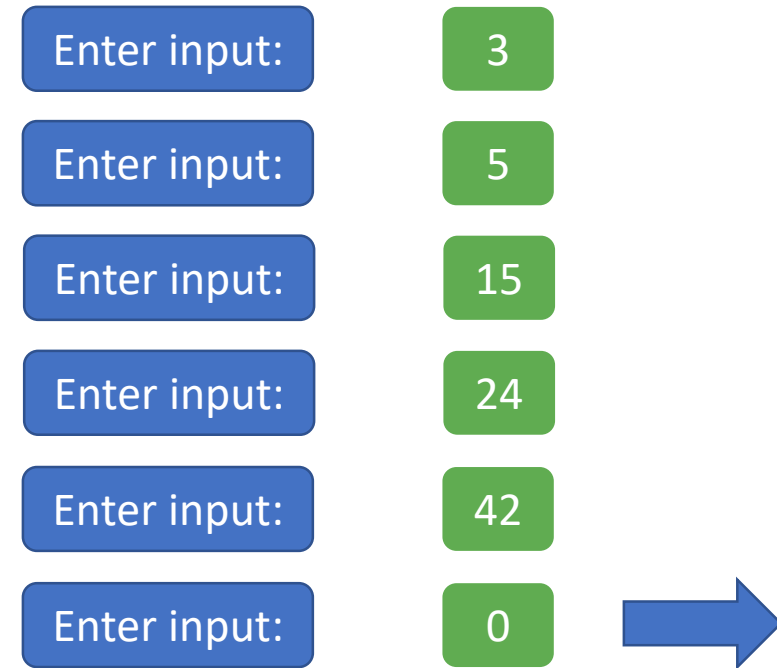
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While Loops

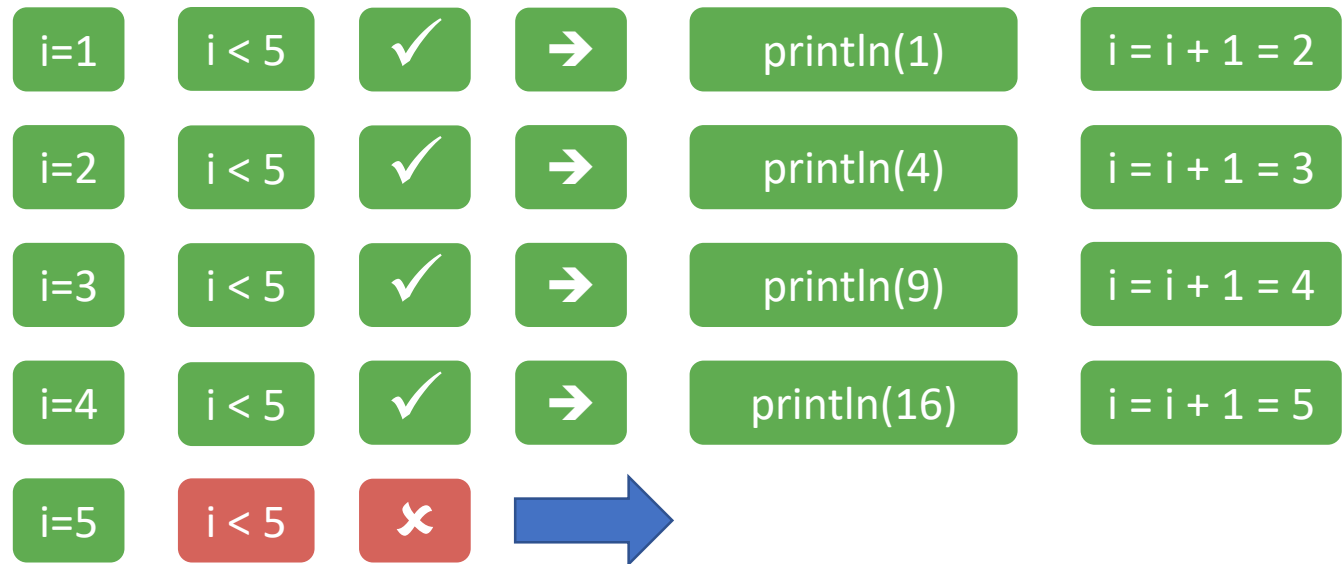
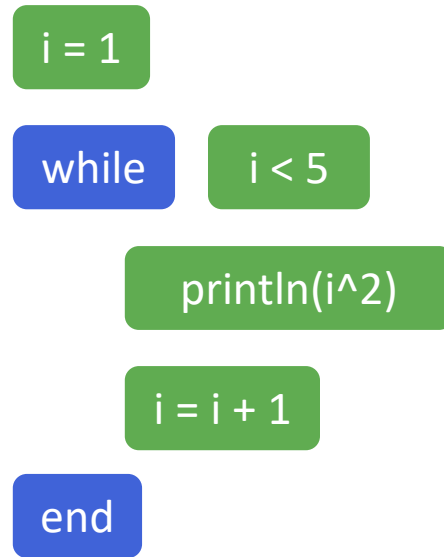
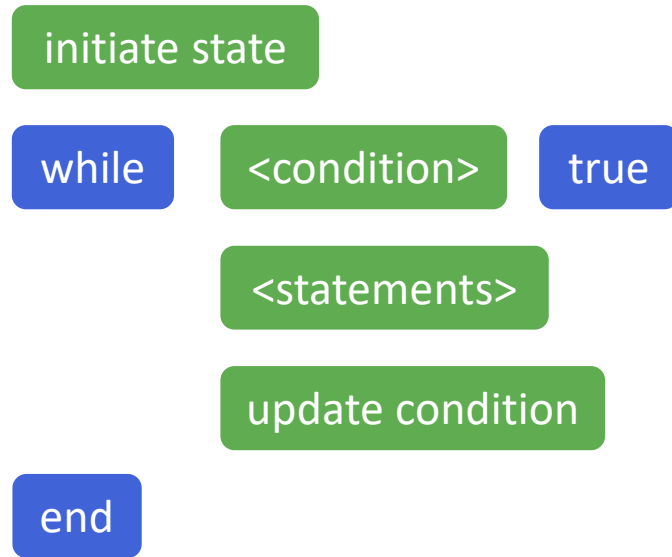
Perform a task as long as a condition holds.



Get input from the user until the user enters "0".



While Loops



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Continue and Break

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Comprehensions

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Comprehensions

```
arr = [5, 8, 12, 17, 24, 42];
```

```
sqarr = Int64[];
```

```
for el in arr
```

```
    append!(sqarr, el^2)
```

```
end
```

```
[ el^2 for el in arr ]
```

$$\{x^2 \mid x \in \text{arr}\}$$