

Introduction to  
**Programming with R**

Applying Functions

# Defining Functions

function()

```
get_votes <- function()
```

```
get_votes <- function(...)
```

```
get_votes <- function(...) {  
  ...  
}
```

**Scope**

mario

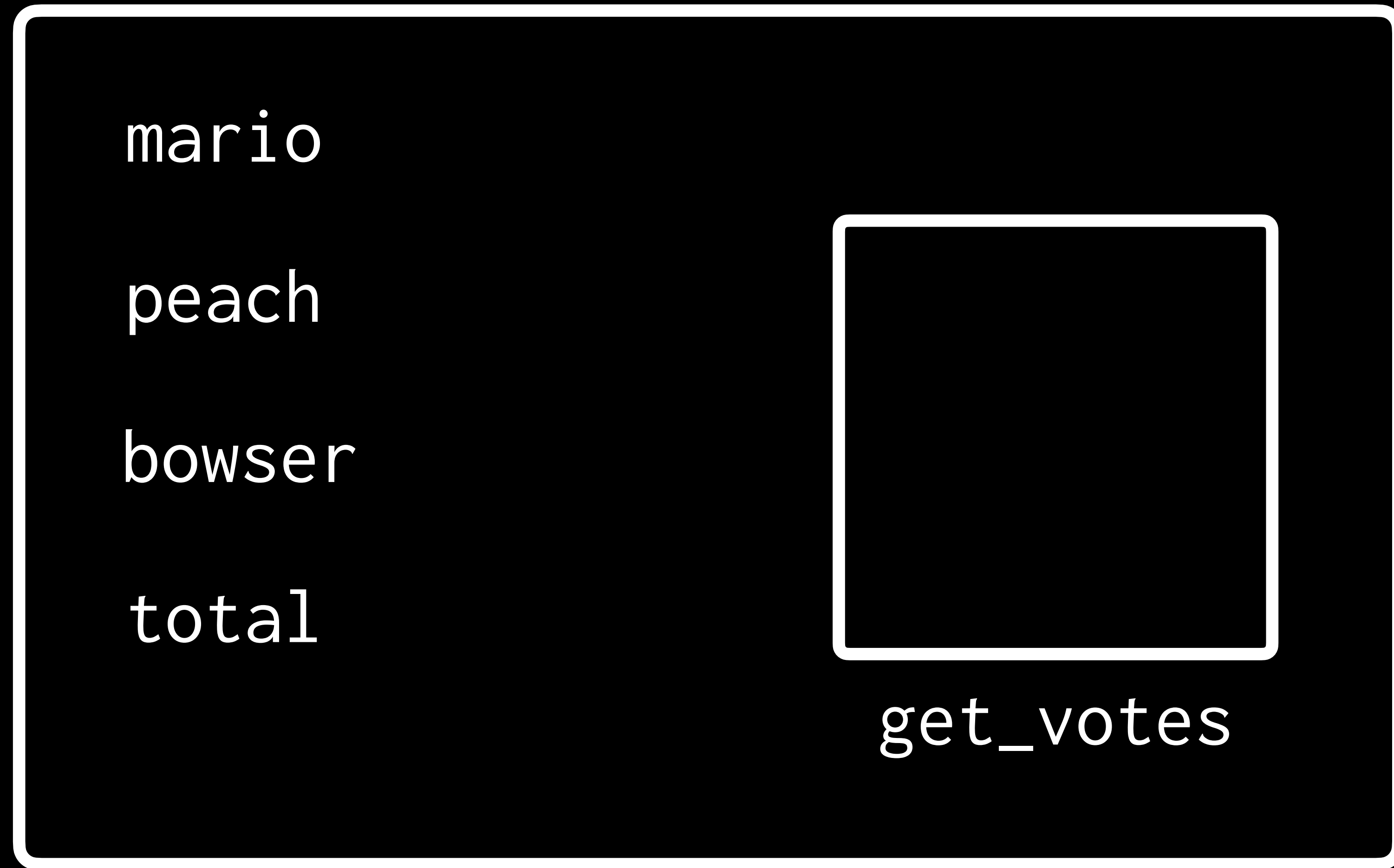
peach

bowser

total

Global Environment





Global Environment

votes

prompt

get\_votes

# Loops

start



"quack!"



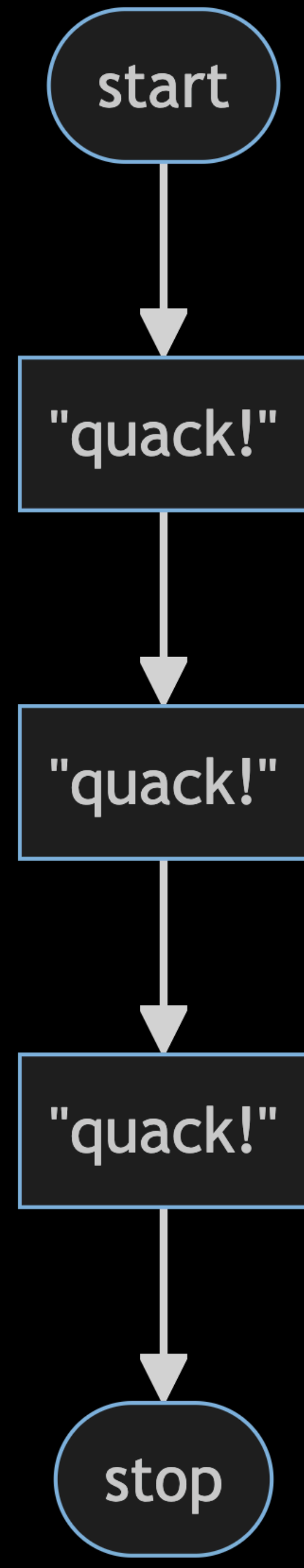
"quack!"



"quack!"

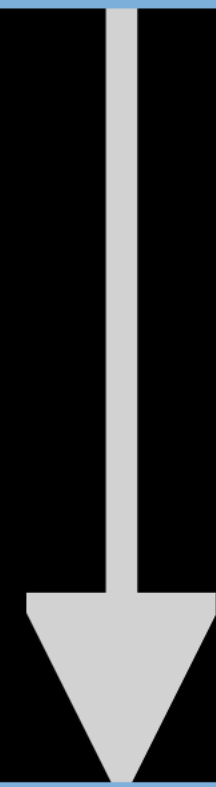


stop

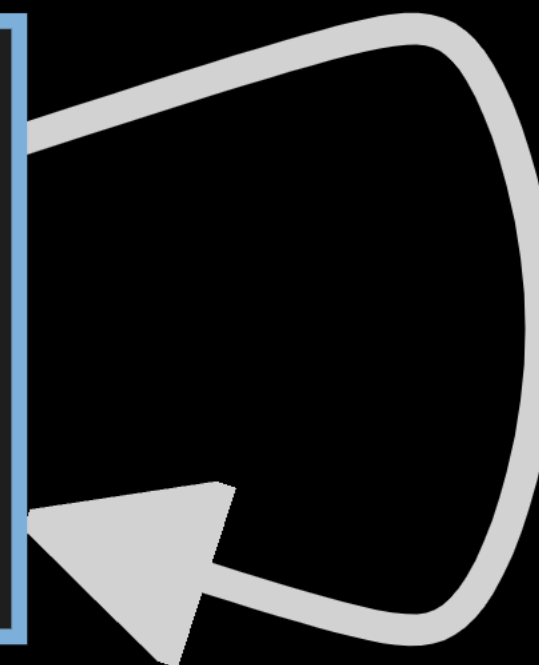


repeat

start

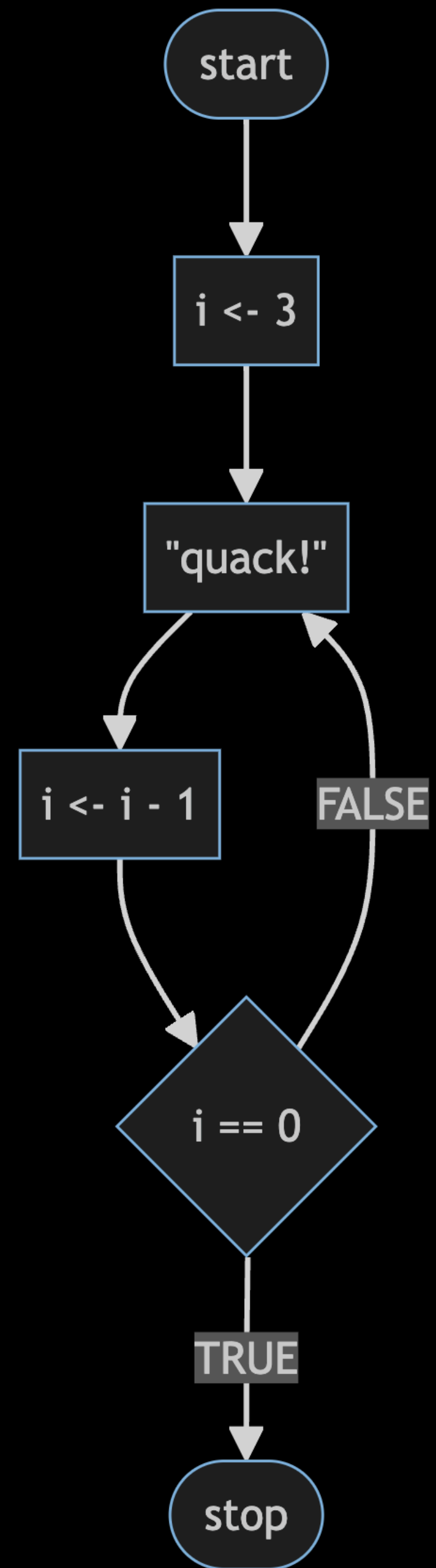


"quack!"



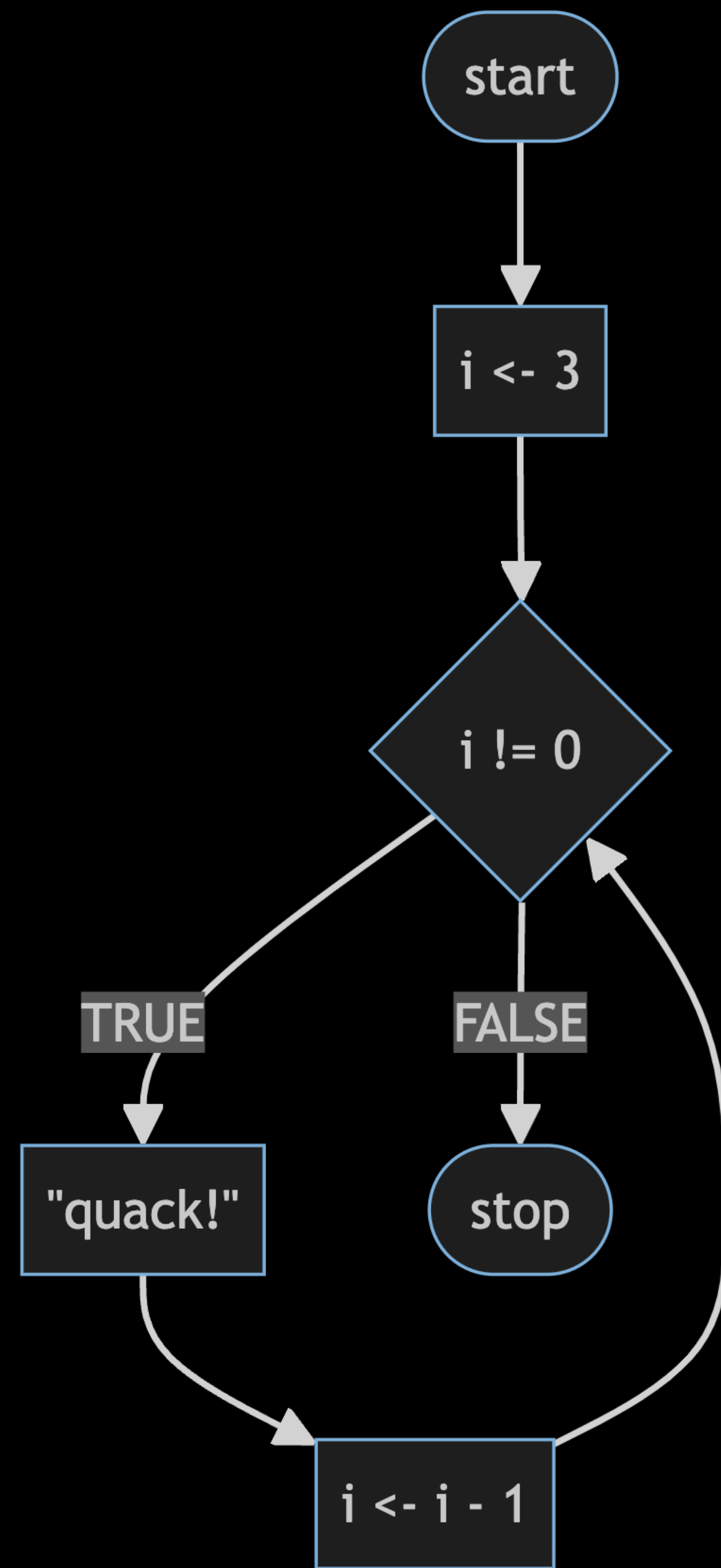
break

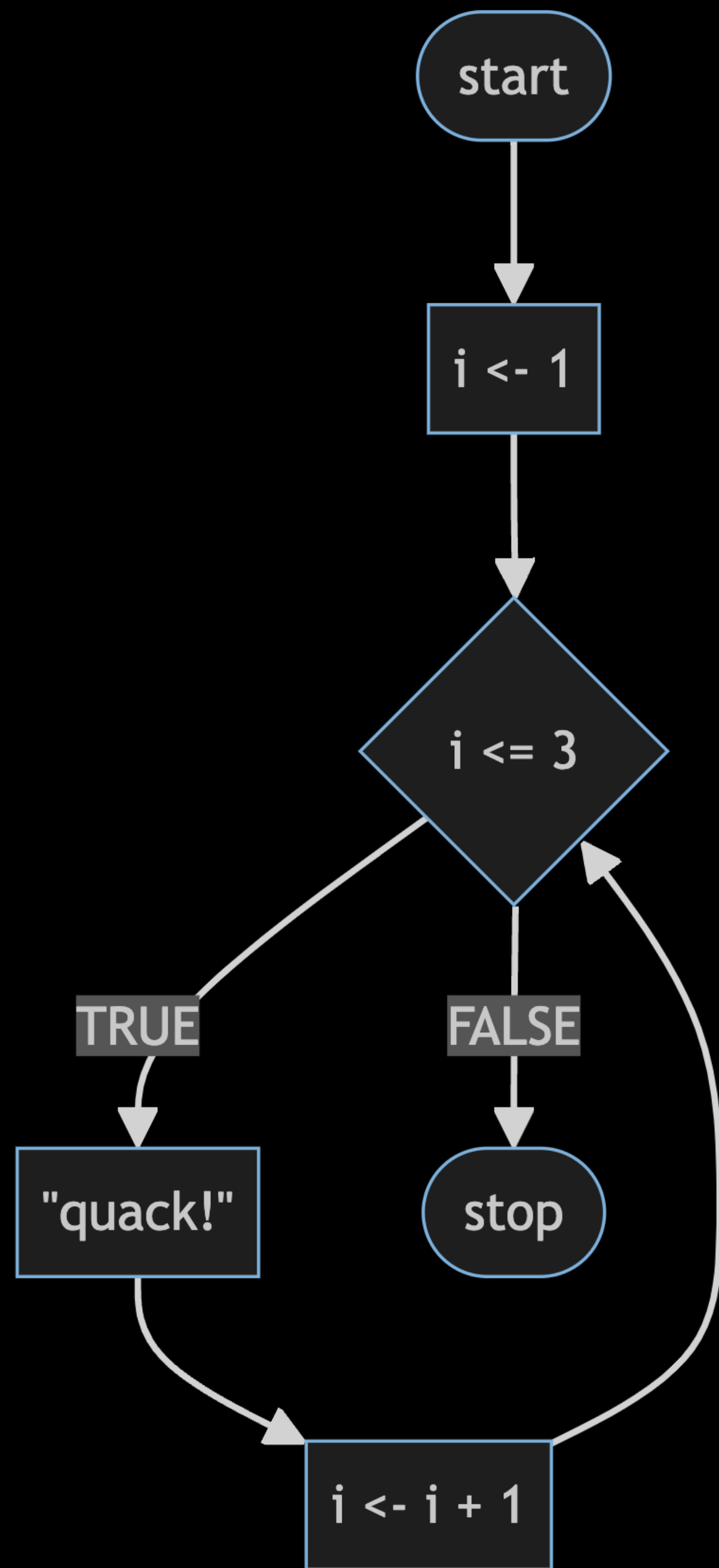
next





while





for

**Tabulate**

**poll**

**mail**

Mario

37

63

Peach

43

107

Bowser

84

36

	<b>poll</b>	<b>mail</b>
Mario	37	63
Peach	43	107
Bowser	84	36

poll

mail

Mario

37

63

?

Peach

43

107

Bowser

84

36

37	63
43	107
84	36

poll

mail

Mario

37

63

Peach

43

107

Bowser

84

36

?



	poll	mail
Mario	37	63
Peach	43	107
Bowser	84	36

votes

	poll	mail
Mario	37	63
Peach	43	107
Bowser	84	36

```
votes["Mario", ]
```

	poll	mail
Mario	37	63
Peach	43	107
Bowser	84	36

```
votes["Peach", ]
```

	poll	mail
Mario	37	63
Peach	43	107
Bowser	84	36

```
votes["Bowser", ]
```

total\_votes

100

Mario

```
total_votes["Mario"] <- 100
```

100	150
Mario	Peach

```
total_votes["Peach"] <- 150
```

100	150	120
Mario	Peach	Bowser

```
total_votes["Bowser"] <- 120
```



100	150	120
-----	-----	-----

Mario

Peach

Bowser

total\_votes

# Functional Programming

apply

	poll	mail
Mario	37	63
Peach	43	107
Bowser	84	36

```
apply(votes, MARGIN = 1, FUN = sum)
```


	poll	mail	
Mario	37	63	→
Peach	43	107	→
Bowser	84	36	→

`apply(votes, MARGIN = 1, FUN = sum)`

	poll	mail
Mario	37	63
Peach	43	107
Bowser	84	36

```
apply(votes, MARGIN = 2, FUN = sum)
```

	poll	mail
Mario	37	63
Peach	43	107
Bowser	84	36



```
apply(votes, MARGIN = 2, FUN = sum)
```

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