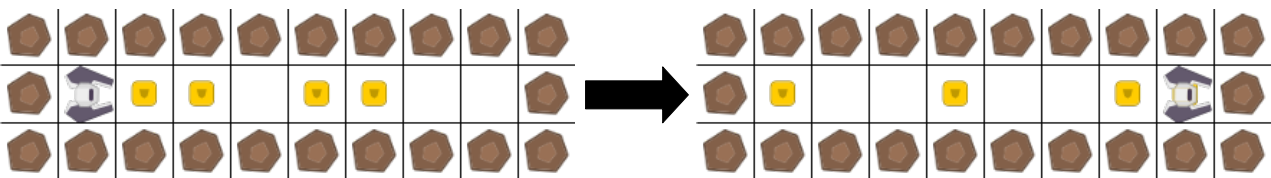## Knowledge store Spacebug (10): Subprograms

Subprograms can be used to **define** own commands.

After the definition of a subprogram, it can be **called** once or repeatedly.

The subprogram cannot be called before it is defined.
Therefore, definitions of subprograms belong in the top half of the program.

Example: Inverting all powerups within a one-line box


```
def _____
    if onPow():
        removePow()
    else:
        putPow()

while not rockFront():
    _____
    move()
    _____
```

Advantages of subprograms

It is bad to copy large amounts of code because...

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Example: Simplifying a program using subprograms

```
# go three steps
move()
move()
move()

# put a powerup and move
putPow()
turnLeft()

# go three steps
move()
move()
move()

# put a powerup and move
putPow()
turnLeft()

# go three steps
move()
move()
move()

# put a powerup and move
putPow()
turnLeft()
```

```
def threeSteps():
  move()
  move()
  move()

def putPowerupAndMove():
  putPow()
  turnLeft()

threeSteps()
putPowerupAndMove()
threeSteps()
putPowerupAndMove()
threeSteps()
putPowerupAndMove()
```