

# Elevator



*This reference sheet shows both versions of the finished program—before refactoring and after refactoring.*

## Before refactoring

```
import time
items = []

def print_pause(message_to_print):
    print(message_to_print)
    time.sleep(1)

print_pause("You have just arrived at your new job!")
print_pause("You are in the elevator.")

while True:
    print_pause("Please enter the number for the "
                "floor you would like to visit:")
    floor = input("1. Lobby\n"
                  "2. Human resources\n"
                  "3. Engineering department\n")
    if floor == '1':
        print_pause("You push the button for the first floor.")
        print_pause("After a few moments, you find "
                    "yourself in the lobby.")
        if "ID card" in items:
            print_pause("The clerk greets you, but she has already "
                        "given you your ID card, so there is nothing "
                        "more to do here now.")
        else:
            print_pause("The clerk greets you and gives you your ID "
                        "card.")
            items.append("ID card")
    elif floor == '2':
        print_pause("You push the button for the second floor.")
        print_pause("After a few moments, you find yourself "
                    "in the human resources department.")
```

```

if "handbook" in items:
    print_pause("The HR folks are busy at their desks.")
    print_pause("There doesn't seem to be much to do here.")
else:
    print_pause("The head of HR greets you.")
    if "ID card" in items:
        print_pause("He looks at your ID card and then "
                    "gives you a copy of the employee handbook.")
        items.append("handbook")
    else:
        print_pause("He has something for you, but says he can't "
                    "give it to you until you go get your ID card.")
    print_pause("You head back to the elevator.")
elif floor == '3':
    print_pause("You push the button for the third floor.")
    print_pause("After a few moments, you find yourself "
                "in the engineering department.")
    print_pause("This is where you work!")
    if "ID card" in items:
        print_pause("You use your ID card to open the door.")
        print_pause("Your program manager greets you and tells "
                    "you that you need to have a copy of the "
                    "employee handbook in order to start work.")
    if "handbook" in items:
        print_pause("Fortunately, you got that from HR!")
        print_pause("Congratulations! You are ready to start your new job "
                    "as vice president of engineering!")

        break
    else:
        print_pause("They scowl when they see that you don't have it, "
                    "and send you back to the elevator.")
else:
    print_pause("Unfortunately, the door is locked "
                "and you can't get in.")
    print_pause("It looks like you need some kind of "
                "key card to open the door.")
    print_pause("You head back to the elevator.")

print_pause("Where would you like to go next?")

```

## After refactoring

```
import time

def print_pause(message_to_print):
    print(message_to_print)
    time.sleep(1)

def intro():
    print_pause("You have just arrived at your new job!")
    print_pause("You are in the elevator.")

def first_floor(items):
    print_pause("You push the button for the first floor.")
    print_pause("After a few moments, you find "
                "yourself in the lobby.")
    if "ID card" in items:
        print_pause("The clerk greets you, but she has already "
                    "given you your ID card, so there is nothing "
                    "more to do here now.")
    else:
        print_pause("The clerk greets you and gives you your ID "
                    "card.")
        items.append("ID card")
    print_pause("You head back to the elevator.")
    ride_elevator(items)

def second_floor(items):
    print_pause("You push the button for the second floor.")
    print_pause("After a few moments, you find yourself "
                "in the human resources department.")
    if "handbook" in items:
        print_pause("The HR folks are busy at their desks.")
        print_pause("There doesn't seem to be much to do here.")
    else:
        print_pause("The head of HR greets you.")
        if "ID card" in items:
            print_pause("He looks at your ID card and then "
                        "gives you a copy of the employee handbook.")
```

```

        items.append("handbook")
    else:
        print_pause("He has something for you, but says he can't "
                    "give it to you until you go get your ID card.")
print_pause("You head back to the elevator.")
ride_elevator(items)

def third_floor(items):
    print_pause("You push the button for the third floor.")
    print_pause("After a few moments, you find yourself "
                "in the engineering department.")
    print_pause("This is where you work!")
    if "ID card" in items:
        print_pause("You use your ID card to open the door.")
        print_pause("Your program manager greets you and tells "
                    "you that you need to have a copy of the "
                    "employee handbook in order to start work.")
        if "handbook" in items:
            print_pause("Fortunately, you got that from HR!")
            print_pause("Congratulations! You are ready to start your new job "
                        "as vice president of engineering!")
        else:
            print_pause("They scowl when they see that you don't have it, "
                        "and send you back to the elevator.")
            ride_elevator(items)
    else:
        print_pause("Unfortunately, the door is locked "
                    "and you can't get in.")
        print_pause("It looks like you need some kind of "
                    "key card to open the door.")
        print_pause("You head back to the elevator.")
        ride_elevator(items)

def ride_elevator(items):
    print_pause("Please enter the number for the "
                "floor you would like to visit:")
    floor = input("1. Lobby\n"
                 "2. Human resources\n"
                 "3. Engineering department\n")
    if floor == '1':
        first_floor(items)
    elif floor == '2':
        second_floor(items)

```

```
elif floor == '3':  
    third_floor(items)  
  
def play_game():  
    items = []  
    intro()  
    ride_elevator(items)  
  
play_game()
```