

# **“Dragon Realm”**

*Invent Your Own Computer Games with Python*

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# Introduction

## ■ “Dragon Realm”

- Sample Run
- Source Code

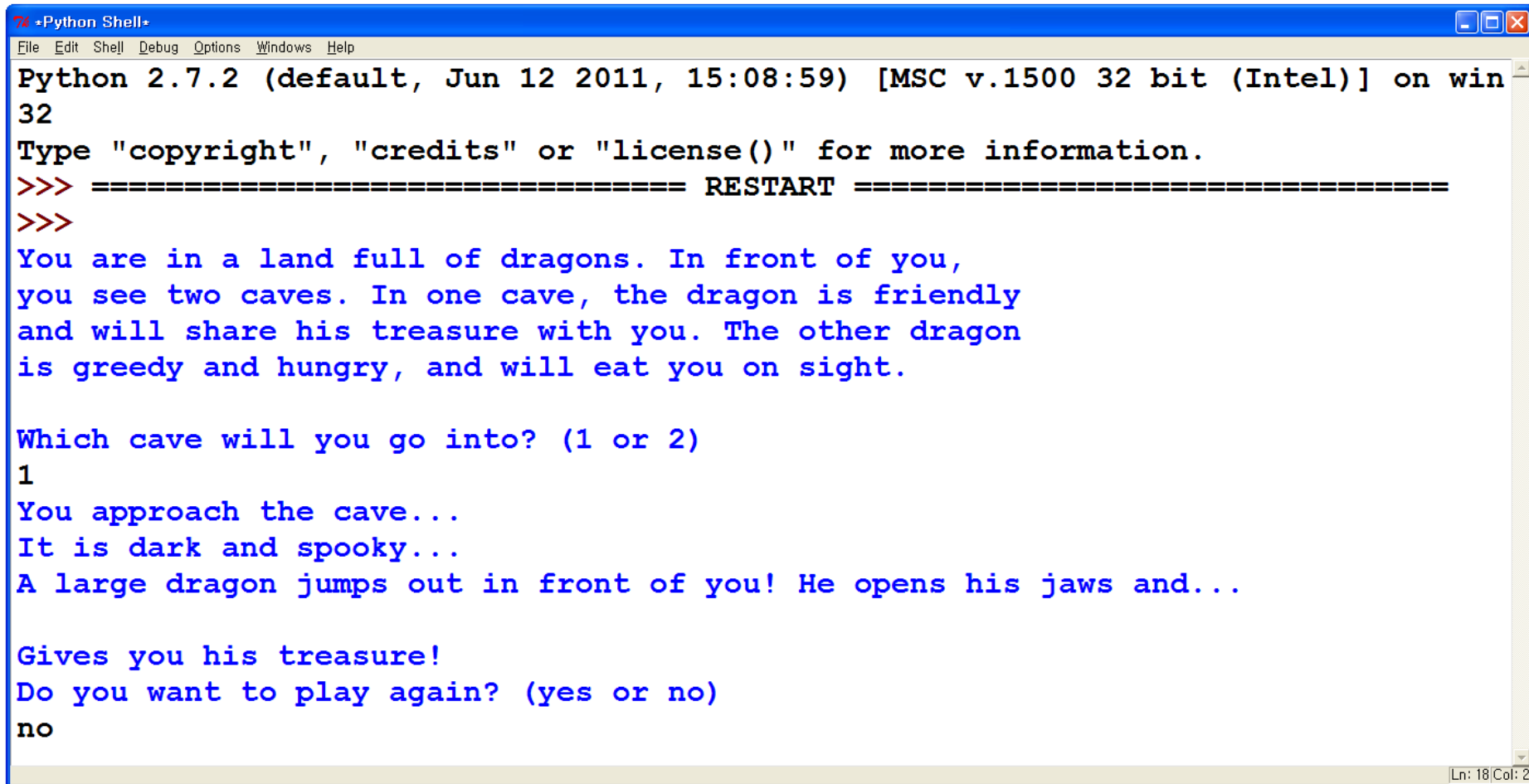
## ■ Code Explanation

- `def` statements
- The Colon :
- Step by Step, One More Time
- Designing the Program

## ■ Things Covered In This Chapter

# “Dragon Realm”

## ■ Sample Run

A screenshot of a Python Shell window titled "Python Shell". The window has a menu bar with "File", "Edit", "Shell", "Debug", "Options", "Windows", and "Help". The main text area shows the following output:

```
Python 2.7.2 (default, Jun 12 2011, 15:08:59) [MSC v.1500 32 bit (Intel)] on win
32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
You are in a land full of dragons. In front of you,
you see two caves. In one cave, the dragon is friendly
and will share his treasure with you. The other dragon
is greedy and hungry, and will eat you on sight.

Which cave will you go into? (1 or 2)
1
You approach the cave...
It is dark and spooky...
A large dragon jumps out in front of you! He opens his jaws and...

Gives you his treasure!
Do you want to play again? (yes or no)
no
```

The status bar at the bottom right indicates "Ln: 18 Col: 2".

# “Dragon Realm”

## ■ Source Code (1/2)

```
import random
import time

def displayIntro():
    print 'You are in a land full of dragons. In front of you,'
    print 'you see two caves. In one cave, the dragon is friendly'
    print 'and will share his treasure with you. The other dragon'
    print 'is greedy and hungry, and will eat you on sight.'
    print

def chooseCave():
    cave = ''
    while cave != '1' and cave != '2':
        print 'Which cave will you go into? (1 or 2)'
        cave = raw_input()

    return cave

def checkCave(chosenCave):
    print 'You approach the cave...'
    time.sleep(2)
    print 'It is dark and spooky...'
    time.sleep(2)
    print 'A large dragon jumps out in front of you! He opens his jaws and...'
    print
    time.sleep(2)
```

# “Dragon Realm”

## ■ Source Code (2/2)

```
friendlyCave = random.randint(1, 2)

if chosenCave == str(friendlyCave):
    print 'Gives you his treasure!'
else:
    print 'Gobbles you down in one bite!'

playAgain = 'yes'
while playAgain == 'yes' or playAgain == 'y':

    displayIntro()

    caveNumber = chooseCave()

    checkCave(caveNumber)

    print 'Do you want to play again? (yes or no)'
    playAgain = raw_input()
```

# Code Explanation

## ■ Two `import` statements.

```
import random  
import time
```

- Import random module.
- Time-related functions that the **time module** includes.

# Code Explanation

## ■ Defining the displayIntro( ) Function

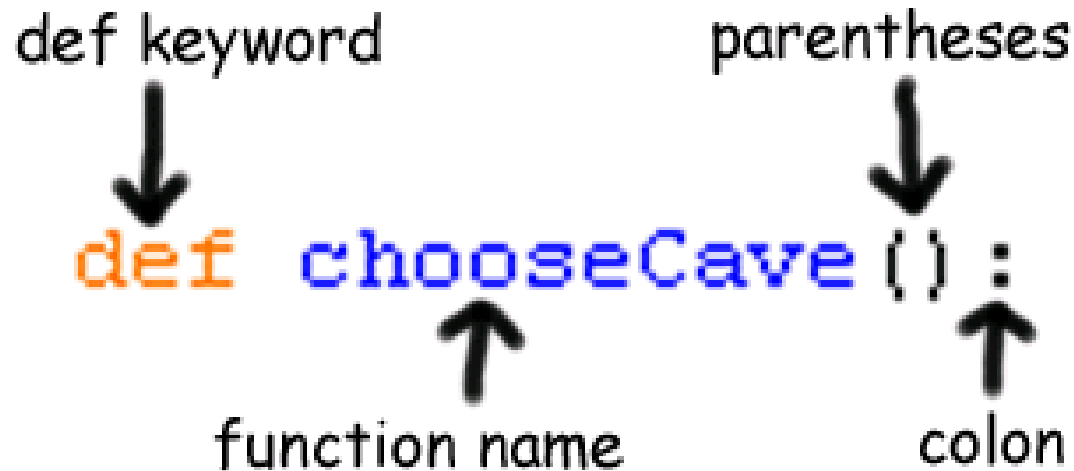
```
def displayIntro():  
    print 'You are in a land full of dragons. In front of you,'  
    print 'you see two caves. In one cave, the dragon is friendly'  
    print 'and will share his treasure with you. The other dragon'  
    print 'is greedy and hungry, and will eat you on sight.'  
    print
```

- **def statement**
  - made up of the **def keyword**, followed by a **function name** with **parentheses**, and then a **colon** (the : sign).
  - There is a block after the statement called the def-block.

# Code Explanation

## ■ `def` statement

- parts of a `def` statement





# Code Explanation

## ■ **def** statement

- **creating**, or **defining**, a new function.
- When we *call* this function
  - the code inside the def-block will be executed.
- also say we define variables.
- **def** statement doesn't execute the code right now
  - it only defines what code is executed when we call the `displayIntro()` function later in the program.

# Code Explanation

## ■ Defining the chooseCave ( ) Function

- defining another function called chooseCave.

```
def chooseCave ( ) :
```

- Inside the chooseCave ( ) function

```
cave = ''
```

```
while cave != '1' and cave != '2':
```

- create a **new variable** called cave and store a blank string in it.
- then we will start a while loop.
  - » contains a **new operator**

# Code Explanation

## ■ Boolean Operators

- **Compare** two Boolean values
- **Evaluate** to a single Boolean value.
  - Boolean expressions are always either **True** or **False**.
- **The and Boolean operator**
  - combines two Boolean values to produce a new Boolean value.

# Code Explanation

## ■ Boolean Operators

- how the and operator works.
- If the Boolean values on both sides of the and keyword are **True**
  - then the expression with the and operator **evaluates to True**.

- This sentence is **True**.

“Cats have whiskers and dogs have tails.”

- This sentence is **False**.

“Cats have whiskers and dogs have wings”

# Code Explanation

## ■ Evaluating an Expression

```
while cave != '1' and cave != '2':
```

- Two expressions connected by the and Boolean operator.
  - We first **evaluate** these expressions to get their Boolean.
  - Then we evaluate the Boolean values with the and operator.

# Code Explanation

## ■ Evaluating an Expression

- The steps of how the interpreter evaluates the condition.

```
while cave != '1' and cave != '2':
```



```
while '' != '1' and cave != '2':
```



```
while True and cave != '2':
```



```
while True and '' != '2':
```



```
while True and True:
```



```
while True:
```

# Code Explanation

## ■ Experimenting with the and and or Operators

### and operator

```
>>> True and True
True
>>> True and False
False
>>> False and True
False
>>> False and False
False
```

### or operator

```
>>> True or True
True
>>> True or False
True
>>> False or True
True
>>> False or False
False
```

# Code Explanation

## ■ Experimenting with the not Operators

```
>>> not True
False
>>> not False
True
>>> True not 
SyntaxError: invalid syntax
```

- use both the **and** and **not** operators in a single expression

```
>>> True and not False
True
```



# Code Explanation

## ■ Truth Tables

- The **and** operator's truth table.

A and B is	Entire statement
True and True is	True
True and False is	False
False and True is	False
False and False is	False

# Code Explanation

## ■ Truth Tables

- The **or** operator's truth table.

A or B is	Entire statement
True or True is	True
True or False is	True
False or True is	True
False or False is	False

# Code Explanation

## ■ Truth Tables

- The **not** operator's truth table.

not    A	Entire statement
not   True	Flase
not   False	True

# Code Explanation

## ■ Getting the Player's Input

```
while cave != '1' and cave != '2':  
    print 'Which cave will you go into? (1 or 2)'  
    cave = raw_input()
```

- If this condition evaluates to **True**
  - enter the **while-block** again.
- But if the player typed in 1 or 2
  - This causes the condition to evaluate to **False**.
  - the program execution will continue on **past the while loop**.

# Code Explanation

## ■ Return Values

- **return keyword**

```
return cave
```

- It **returns the string** that is stored in cave.
- Only found inside def-blocks.
- Once the return statement is executed
  - » we immediately jump out of the def-block.

# Code Explanation

## ■ Variable Scope

- Variables **created inside** the function
  - forgotten after the execution leaves the function.
  - The scope of the variable is inside in the function's block.
- The scope of variables **created outside** of functions
  - outside of all functions in the program.

# Code Explanation

## ■ Variable cave is defined

```
def chooseCave():  
    cave = ''
```

- It is important to know **when a variable is defined**.
  - because that is how we know the **variable's scope**.
- when the execution left the `chooseCave()` function
  - the `cave` variable was forgotten and destroyed.
  - that is, left `chooseCave()`'s local scope.

# Code Explanation

## ■ Defining the `checkCave()` Function

```
def checkCave(chosenCave):
```

- put the text `chosenCave` in between the parentheses.
- **Parameters**
  - The variable names in between the parentheses.
  - for some functions , we would pass an argument in between the parentheses.

```
>>> import random
```

```
>>> str(5)
```

```
'5'
```

```
>>> random.randint(1, 20)
```

```
9
```



# Code Explanation



## ■ Quiz

- Imagine we had a short program that looked like this.

```
def sayHello(name):  
    print 'Hello, ' + name  
  
print 'Say hello to Alice.'  
fizzy = 'Alice'  
sayHello(fizzy)  
print 'Do not forget to say hello to Bob.'  
sayHello('Bob')
```

# Code Explanation



## ■ Quiz

- Imagine we had a short program that looked like this.

```
def sayHello(name):  
    print 'Hello, ' + fizzy  
  
print 'Say hello to Alice.'  
fizzy = 'Alice'  
sayHello(fizzy)  
print 'Do not forget to say hello to Bob.'  
sayHello('Bob')
```

# Code Explanation

## ■ Local Variables and Global Variables with the Same Name

- Now look at this program, which is a **bit different**.

```
def spam(myName) :  
    print 'Hello, ' + myName  
    myName = 'Waffles'  
    print 'Your new name is ' + myName
```

```
myName = 'Albert'  
spam(myName)  
print 'Howdy, ' + myName
```

# Code Explanation

## ■ Where to Put Function Definitions

- A function's definition has to come before you call the function.

```
sayGoodBye()
```

```
def sayGoodBye():  
    print 'Good bye!'
```

```
Traceback (most recent call last):  
  File "<pyshell#3>", line 2, in <module>  
    sayGoodBye()  
NameError: name 'sayGoodBye' is not defined
```

# Code Explanation

## ■ Where to Put Function Definitions

- To fix this, put the function definition before the function call.

```
def sayGoodBye():  
    print 'Good bye!'
```

```
sayGoodBye()
```

```
Good bye!
```

# Code Explanation

## ■ Displaying the Game Results

- The `time.sleep()` function

```
print 'You approach the cave...'  
time.sleep(2)
```

- Imported the **time module**.
- The time module has a function called `sleep()`
  - » will pause the program for a few seconds.
  - » to pause for exactly 2 seconds.

# Code Explanation

## ■ Displaying the Game Results

- Print some more text and wait again for another 2 seconds.
- These short pauses add suspense to the game.

```
print 'It is dark and spooky...'  
time.sleep(2)  
print 'A large dragon jumps out in front of you! He opens his jaws and...'  
print  
time.sleep(2)
```

# Code Explanation

## ■ Deciding Which Cave has the Friendly Dragon

```
friendlyCave = random.randint(1, 2)
```

- **randomly chose** which cave had the friendly dragon in it.
- the `random.randint()` function will return either the integer **1 or 2**.
- store this value in a variable called `friendlyCave`.



# Code Explanation

## ■ Deciding Which Cave has the Friendly Dragon

- check if the **integer 1 or 2** is equal to the cave randomly selected.

```
if chosenCave == str(friendlyCave):  
    print 'Gives you his treasure!'
```

- can't compare strings and integers with the `==` sign.
  - '1' does not equal 1.
  - So we are passing `friendlyCave` to the `str()` function.
- we could have also had this line instead

```
if int(chosenCave) == friendlyCave:
```

# Code Explanation

## ■ Deciding Which Cave has the Friendly Dragon

- **else keyword**

```
else:  
    print 'Gobbles you down in one bite!'
```

- always comes after the if-block.
- If this condition is true then execute the if-block or else execute the else-block."
- Remember to put the colon (the : sign) after the else keyword.

# Code Explanation

## ■ The Colon :

- always place a colon at the end of `if`, `else`, `while`, and `def` statements.
  - This line is where our program really begins.

```
playAgain = 'yes'
```

- Here is the beginng of a `while` loop.

```
while playAgain == 'yes' or playAgain == 'y':
```

# Code Explanation

## ■ Calling the Functions

- Jumps to the first line in the `displayIntro()` function.

```
displayIntro()
```

- The return value is stored in a new variable named `caveNumber`.

```
caveNumber = chooseCave()
```

- This line calls our `checkCave()` function with the argument of `caveNumber`'s value.

```
checkCave(caveNumber)
```

# Code Explanation

## ■ Asking the Player to Play Again

- The variable `playAgain`
  - stores the string that the user typed in.
  - then we reach the end of the while-block
  - so the program rechecks the while statement's condition  
(`playAgain == 'yes' or playAgain == 'y'`)

```
print('Do you want to play again? (yes or no) ')  
playAgain = input()
```

# Code Explanation – step by step

```
import random
import time

def displayIntro():
    print 'You are in a land full of dragons. In front of you,'
    print 'you see two caves. In one cave, the dragon is friendly'
    print 'and will share his treasure with you. The other dragon'
    print 'is greedy and hungry, and will eat you on sight.'
    print

def chooseCave():
    cave = ''
    while cave != '1' and cave != '2':
        print 'Which cave will you go into? (1 or 2)'
        cave = raw_input()

    return cave

def checkCave(chosenCave):
    print 'You approach the cave...'
```

# Code Explanation – step by step

```
import random
import time
```

```
def displayIntro():
    print 'You are in a land full of dragons. In front of you,'
    print 'you see two caves. In one cave, the dragon is friendly'
    print 'and will share his treasure with you. The other dragon'
    print 'is greedy and hungry, and will eat you on sight.'
    print
```

```
def chooseCave():
    cave = ''
    while cave != '1' and cave != '2':
        print 'Which cave will you go into? (1 or 2)'
        cave = raw_input()

    return cave
```

```
def checkCave(chosenCave):
    print 'You approach the cave...'
```

# Code Explanation – step by step

```
import random
import time
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```
def displayIntro():
    print 'You are in a land full of dragons. In front of you,'
    print 'you see two caves. In one cave, the dragon is friendly'
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    print 'is greedy and hungry, and will eat you on sight.'
    print
```

```
def chooseCave():
    cave = ''
    while cave != '1' and cave != '2':
        print 'Which cave will you go into? (1 or 2)'
        cave = raw_input()

    return cave
```

```
def checkCave(chosenCave):
    print 'You approach the cave...'
```



# Code Explanation – step by step

```
import random
import time
```

```
def displayIntro():
    print 'You are in a land full of dragons. In front of you,'
    print 'you see two caves. In one cave, the dragon is friendly'
    print 'and will share his treasure with you. The other dragon'
    print 'is greedy and hungry, and will eat you on sight.'
    print
```

```
def chooseCave():
    cave = ''
    while cave != '1' and cave != '2':
        print 'Which cave will you go into? (1 or 2)'
        cave = raw_input()

    return cave
```

```
def checkCave(chosenCave):
    print 'You approach the cave...'
```

# Code Explanation – step by step

```
def checkCave(chosenCave):  
    print 'You approach the cave...'  
    time.sleep(2)  
    print 'It is dark and spooky...'  
    time.sleep(2)  
    print 'A large dragon jumps out in front of you! He opens his jaws and...'  
    print  
    time.sleep(2)  
  
    friendlyCave = random.randint(1, 2)  
  
    if chosenCave == str(friendlyCave):  
        print 'Gives you his treasure!'  
    else:  
        print 'Gobbles you down in one bite!'  
  
playAgain = 'yes'  
while playAgain == 'yes' or playAgain == 'y':
```

# Code Explanation – step by step

```
def checkCave(chosenCave):  
    print 'You approach the cave...'  
    time.sleep(2)  
    print 'It is dark and spooky...'  
    time.sleep(2)  
    print 'A large dragon jumps out in front of you! He opens his jaws and...'  
    print  
    time.sleep(2)  
  
    friendlyCave = random.randint(1, 2)  
  
    if chosenCave == str(friendlyCave):  
        print 'Gives you his treasure!'  
    else:  
        print 'Gobbles you down in one bite!'  
  
playAgain = 'yes'  
while playAgain == 'yes' or playAgain == 'y':
```

# Code Explanation – step by step

Global Scope

```
playAgain == 'yes'
```

```
playAgain = 'yes'
```

```
while playAgain == 'yes' or playAgain == 'y':
```

```
    displayIntro()
```

```
    caveNumber = chooseCave()
```

```
    checkCave(caveNumber)
```

```
    print 'Do you want to play again? (yes or no) '
```

```
    playAgain = raw_input()
```

# Code Explanation – step by step

Global Scope

```
playAgain == 'yes'
```

```
playAgain = 'yes'  
while playAgain == 'yes' or playAgain == 'y':
```

```
    displayIntro()
```

```
    caveNumber = chooseCave()
```

```
    checkCave(caveNumber)
```

```
    print 'Do you want to play again? (yes or no) '  
    playAgain = raw_input()
```

# Code Explanation – step by step

```
import random
import time
```

Global Scope

```
playAgain == 'yes'
```

```
def displayIntro():
    print 'You are in a land full of dragons. In front of you,'
    print 'you see two caves. In one cave, the dragon is friendly'
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    print 'is greedy and hungry, and will eat you on sight.'
    print

def chooseCave():
    cave = ''
    while cave != '1' and cave != '2':
        print 'Which cave will you go into? (1 or 2)'
        cave = raw_input()

    return cave
```

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Global Scope

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def displayIntro():
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    print 'You are in a land full of dragons. In front of you,'
    print 'you see two caves. In one cave, the dragon is friendly'
    print 'and will share his treasure with you. The other dragon'
    print 'is greedy and hungry, and will eat you on sight.'
    print
```

```
def chooseCave():
```

```
    cave = ''
    while cave != '1' and cave != '2':
        print 'Which cave will you go into? (1 or 2)'
        cave = raw_input()

    return cave
```

# Code Explanation – step by step

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        print 'Which cave will you go into? (1 or 2)'
        cave = raw_input()

    return cave
```



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Global Scope

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def chooseCave():
    cave = ''
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        print 'Which cave will you go into? (1 or 2)'
        cave = raw_input()

    return cave
```

# Code Explanation – step by step

```
import random
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Global Scope

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def displayIntro():
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    print 'is greedy and hungry, and will eat you on sight.'
    print

def chooseCave():
    cave = ''
    while cave != '1' and cave != '2':
        print 'Which cave will you go into? (1 or 2)'
        cave = raw_input()

    return cave
```

# Code Explanation – step by step

```
import random
import time
```

Global Scope

```
playAgain == 'yes'
```

```
def displayIntro():
    print 'You are in a land full of dragons. In front of you,'
    print 'you see two caves. In one cave, the dragon is friendly'
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    print 'is greedy and hungry, and will eat you on sight.'
    print
```

```
def chooseCave():
    cave = ''
    while cave != '1' and cave != '2':
        print 'Which cave will you go into? (1 or 2)'
        cave = raw_input()

    return cave
```

# Code Explanation – step by step

```
import random
import time
```

Global Scope

```
playAgain == 'yes'
```

```
def displayIntro():
    print 'You are in a land full of dragons. In front of you,'
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    print 'is greedy and hungry, and will eat you on sight.'
    print
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def chooseCave():
    cave = ''
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# Code Explanation – step by step

```
import random
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Global Scope

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    return cave
```

# Code Explanation – step by step

```
import random
import time
```

Global Scope

```
playAgain == 'yes'
```

```
def displayIntro():
    print 'You are in a land full of dragons.'
    print 'you see two caves. In one cave, the
    print 'and will share his treasure with you. The other dragon'
    print 'is greedy and hungry, and will eat you on sight.'
    print
```

Lobal Scope

```
cave == ''
```

```
def chooseCave():
    cave = ''
    while cave != '1' and cave != '2':
        print 'Which cave will you go into? (1 or 2)'
        cave = raw_input()

    return cave
```

# Code Explanation – step by step

```
import random
import time
```

Global Scope

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Lobal Scope

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        cave = raw_input()

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# Code Explanation – step by step

```
import random
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```

Global Scope

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playAgain == 'yes'
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def displayIntro():
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Lobal Scope

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cave == ''
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def chooseCave():
    cave = ''
    while cave != '1' and cave != '2':
        print 'Which cave will you go into? (1 or 2)'
        cave = raw_input()

    return cave
```



# Code Explanation – step by step

```
import random
import time
```

Global Scope

```
playAgain == 'yes'
```

```
def displayIntro():
    print 'You are in a land full of dragons.'
    print 'you see two caves. In one cave, the
    print 'and will share his treasure with you. The other dragon'
    print 'is greedy and hungry, and will eat you on sight.'
    print
```

Lobal Scope

```
cave == '3'
```

```
def chooseCave():
    cave = ''
    while cave != '1' and cave != '2':
        print 'Which cave will you go into? (1 or 2)'
        cave = raw_input()

    return cave
```

# Code Explanation – step by step

```
import random
import time
```

Global Scope

```
playAgain == 'yes'
```

```
def displayIntro():
    print 'You are in a land full of dragons.
    print 'you see two caves. In one cave, the
    print 'and will share his treasure with you. The other dragon'
    print 'is greedy and hungry, and will eat you on sight.'
    print
```

Lobal Scope

```
cave == '3'
```

```
def chooseCave():
    cave = ''
    while cave != '1' and cave != '2':
        print 'Which cave will you go into? (1 or 2)'
        cave = raw_input()

    return cave
```

# Code Explanation – step by step

```
import random
import time
```

Global Scope

```
playAgain == 'yes'
```

```
def displayIntro():
    print 'You are in a land full of dragons.'
    print 'you see two caves. In one cave, the
    print 'and will share his treasure with you. The other dragon'
    print 'is greedy and hungry, and will eat you on sight.'
    print
```

Lobal Scope

```
cave == '3'
```

```
def chooseCave():
    cave = ''
    while cave != '1' and cave != '2':
        print 'Which cave will you go into? (1 or 2)'
        cave = raw_input()

    return cave
```

# Code Explanation – step by step

```
import random
import time
```

Global Scope

```
playAgain == 'yes'
```

```
def displayIntro():
    print 'You are in a land full of dragons.'
    print 'you see two caves. In one cave, the
    print 'and will share his treasure with you. The other dragon'
    print 'is greedy and hungry, and will eat you on sight.'
    print
```

Lobal Scope

```
cave == '2'
```

```
def chooseCave():
    cave = ''
    while cave != '1' and cave != '2':
        print 'Which cave will you go into? (1 or 2)'
        cave = raw_input()

    return cave
```

# Code Explanation – step by step

```
return cave
```

```
def checkCave(chosenCave):  
    print 'You approach the cave...'  
    time.sleep(2)  
    print 'It is dark and spooky...'  
    time.sleep(2)  
    print 'A large dragon jumps out in front of you! He op  
    print  
    time.sleep(2)  
  
    friendlyCave = random.randint(1, 2)  
  
    if chosenCave == str(friendlyCave):  
        print 'Gives you his treasure!'  
    else:  
        print 'Gobbles you down in one bite!'  
  
playAgain = 'yes'  
while playAgain == 'yes' or playAgain == 'y':  
  
    displayIntro()  
  
    caveNumber = chooseCave()  
  
    checkCave(caveNumber)  
  
    print 'Do you want to play again? (yes or no)'
```

Global Scope

```
playAgain == 'yes'
```

Global Scope

```
cave == '2'
```

# Code Explanation – step by step

```
    return cave

def checkCave(chosenCave):
    print 'You approach the cave...'
    time.sleep(2)
    print 'It is dark and spooky...'
    time.sleep(2)
    print 'A large dragon jumps out in front of you! He opens his jaws and...'
    print
    time.sleep(2)

    friendlyCave = random.randint(1, 2)

    if chosenCave == str(friendlyCave):
        print 'Gives you his treasure!'
    else:
        print 'Gobbles you down in one bite!'

playAgain = 'yes'
while playAgain == 'yes' or playAgain == 'y':

    displayIntro()

    caveNumber = chooseCave()

    checkCave(caveNumber)

    print 'Do you want to play again? (yes or no)'
```

## Global Scope

```
playAgain == 'yes'
```

```
caveNumber == '2'
```

# Code Explanation – step by step

```
return cave
```

```
def checkCave(chosenCave):  
    print 'You approach the cave...'  
    time.sleep(2)  
    print 'It is dark and spooky...'  
    time.sleep(2)  
    print 'A large dragon jumps out in front of you! He opens his jaws and...'  
    print  
    time.sleep(2)  
  
    friendlyCave = random.randint(1, 2)  
  
    if chosenCave == str(friendlyCave):  
        print 'Gives you his treasure!'  
    else:  
        print 'Gobbles you down in one bite!'  
  
playAgain = 'yes'  
while playAgain == 'yes' or playAgain == 'y':
```

## Global Scope

```
playAgain == 'yes'
```

```
caveNumber == '2'
```

# Code Explanation – step by step

```
return cave
```

```
def checkCave(chosenCave):  
    print 'You approach the cave...'  
    time.sleep(2)  
    print 'It is dark and spooky...'  
    time.sleep(2)  
    print 'A large dragon jumps out in front of you! H  
    print  
    time.sleep(2)  
  
    friendlyCave = random.randint(1, 2)  
  
    if chosenCave == str(friendlyCave):  
        print 'Gives you his treasure!'  
    else:  
        print 'Gobbles you down in one bite!'  
  
playAgain = 'yes'  
while playAgain == 'yes' or playAgain == 'y':
```

## Global Scope

```
playAgain == 'yes'
```

```
caveNumber == '2'
```

## Local Scope

```
chosenCave == '2'
```



# Code Explanation – step by step

```
    return cave

def checkCave(chosenCave):
    print 'You approach the cave...'
    time.sleep(2)
    print 'It is dark and spooky...'
    time.sleep(2)
    print 'A large dragon jumps out in front of you! H'
    print
    time.sleep(2)

    friendlyCave = random.randint(1, 2)

    if chosenCave == str(friendlyCave):
        print 'Gives you his treasure!'
    else:
        print 'Gobbles you down in one bite!'

playAgain = 'yes'
while playAgain == 'yes' or playAgain == 'y':
```

## Global Scope

```
playAgain == 'yes'
```

```
caveNumber == '2'
```

## Lobal Scope

```
chosenCave == '2'
```

# Code Explanation – step by step

```
    return cave

def checkCave(chosenCave):
    print 'You approach the cave...'
    time.sleep(2)
    print 'It is dark and spooky...'
    time.sleep(2)
    print 'A large dragon jumps out in front of you! H'
    print
    time.sleep(2)

    friendlyCave = random.randint(1, 2)

    if chosenCave == str(friendlyCave):
        print 'Gives you his treasure!'
    else:
        print 'Gobbles you down in one bite!'

playAgain = 'yes'
while playAgain == 'yes' or playAgain == 'y':
```

## Global Scope

playAgain == 'yes'

caveNumber == '2'

## Global Scope

chosenCave == '2'

# Code Explanation – step by step

```
return cave
```

```
def checkCave(chosenCave):  
    print 'You approach the cave...'  
    time.sleep(2)  
    print 'It is dark and spooky...'  
    time.sleep(2)  
    print 'A large dragon jumps out in front of you! H  
    print  
    time.sleep(2)
```

```
friendlyCave = random.randint(1, 2)
```

```
if chosenCave == str(friendlyCave):  
    print 'Gives you his treasure!'  
else:  
    print 'Gobbles you down in one bite!'
```

```
playAgain = 'yes'  
while playAgain == 'yes' or playAgain == 'y':
```

## Global Scope

```
playAgain == 'yes'
```

```
caveNumber == '2'
```

## Local Scope

```
chosenCave == '2'
```

# Code Explanation – step by step

```
    return cave

def checkCave(chosenCave):
    print 'You approach the cave...'
    time.sleep(2)
    print 'It is dark and spooky...'
    time.sleep(2)
    print 'A large dragon jumps out in front of you! H
    print
    time.sleep(2)

    friendlyCave = random.randint(1, 2)

    if chosenCave == str(friendlyCave):
        print 'Gives you his treasure!'
    else:
        print 'Gobbles you down in one bite!'

playAgain = 'yes'
while playAgain == 'yes' or playAgain == 'y':
```

## Global Scope

```
playAgain == 'yes'
```

```
caveNumber == '2'
```

## Global Scope

```
chosenCave == '2'
```

# Code Explanation – step by step

```
return cave
```

```
def checkCave(chosenCave):  
    print 'You approach the cave...'  
    time.sleep(2)  
    print 'It is dark and spooky...'  
    time.sleep(2)  
    print 'A large dragon jumps out in front of you! H  
    print  
    time.sleep(2)
```

```
friendlyCave = random.randint(1, 2)
```

```
if chosenCave == str(friendlyCave):  
    print 'Gives you his treasure!'  
else:  
    print 'Gobbles you down in one bite!'
```

```
playAgain = 'yes'  
while playAgain == 'yes' or playAgain == 'y':
```

## Global Scope

```
playAgain == 'yes'
```

```
caveNumber == '2'
```

## Global Scope

```
chosenCave == '2'
```

# Code Explanation – step by step

```
return cave
```

```
def checkCave(chosenCave):  
    print 'You approach the cave...'  
    time.sleep(2)  
    print 'It is dark and spooky...'  
    time.sleep(2)  
    print 'A large dragon jumps out in front of you! H  
    print  
    time.sleep(2)
```

```
friendlyCave = random.randint(1, 2)
```

```
if chosenCave == str(friendlyCave):  
    print 'Gives you his treasure!'  
else:  
    print 'Gobbles you down in one bite!'
```

```
playAgain = 'yes'  
while playAgain == 'yes' or playAgain == 'y':
```

## Global Scope

```
playAgain == 'yes'
```

```
caveNumber == '2'
```

## Global Scope

```
chosenCave == '2'
```

# Code Explanation – step by step

```
return cave
```

```
def checkCave(chosenCave):  
    print 'You approach the cave...'  
    time.sleep(2)  
    print 'It is dark and spooky...'  
    time.sleep(2)  
    print 'A large dragon jumps out in front of you! H  
    print  
    time.sleep(2)
```

```
friendlyCave = random.randint(1, 2)
```

```
if chosenCave == str(friendlyCave):  
    print 'Gives you his treasure!'  
else:  
    print 'Gobbles you down in one bite!'
```

```
playAgain = 'yes'  
while playAgain == 'yes' or playAgain == 'y':
```

## Global Scope

```
playAgain == 'yes'
```

```
caveNumber == '2'
```

## Global Scope

```
chosenCave == '2'
```

# Code Explanation – step by step

```
return cave
```

```
def checkCave(chosenCave):  
    print 'You approach the cave...'  
    time.sleep(2)  
    print 'It is dark and spooky...'  
    time.sleep(2)  
    print 'A large dragon jumps out in front of you! H  
    print  
    time.sleep(2)  
  
    friendlyCave = random.randint(1, 2)
```

```
    if chosenCave == str(friendlyCave):  
        print 'Gives you his treasure!'  
    else:  
        print 'Gobbles you down in one bite!'
```

```
playAgain = 'yes'  
while playAgain == 'yes' or playAgain == 'y':
```

## Global Scope

```
playAgain == 'yes'  
caveNumber == '2'
```

## Local Scope

```
chosenCave == '2'  
friendlyCave == 2
```



# Code Explanation – step by step

```
    return cave

def checkCave(chosenCave):
    print 'You approach the cave...'
    time.sleep(2)
    print 'It is dark and spooky...'
    time.sleep(2)
    print 'A large dragon jumps out in front of you! H'
    print
    time.sleep(2)

    friendlyCave = random.randint(1, 2)

    if chosenCave == str(friendlyCave):
        print 'Gives you his treasure!'
    else:
        print 'Gobbles you down in one bite!'

playAgain = 'yes'
while playAgain == 'yes' or playAgain == 'y':
```

## Global Scope

```
playAgain == 'yes'
caveNumber == '2'
```

## Lobal Scope

```
chosenCave == '2'
friendlyCave == 2
```

# Code Explanation – step by step

```
friendlyCave = random.randint(1, 2)

if chosenCave == str(friendlyCave):
    print 'Gives you his treasure!'
else:
    print 'Gobbles you down in one bite!'
```

```
playAgain = 'yes'
while playAgain == 'yes' or playAgain == 'y':
```

```
    displayIntro()
```

```
    caveNumber = chooseCave()
```

```
    checkCave(caveNumber)
```

```
    print 'Do you want to play again? (yes or no)'
    playAgain = raw_input()
```

## Global Scope

```
playAgain == 'yes'
```

```
caveNumber == '2'
```

# Code Explanation – step by step

```
friendlyCave = random.randint(1, 2)

if chosenCave == str(friendlyCave):
    print 'Gives you his treasure!'
else:
    print 'Gobbles you down in one bite!'
```

```
playAgain = 'yes'
while playAgain == 'yes' or playAgain == 'y':
```

```
    displayIntro()
```

```
    caveNumber = chooseCave()
```

```
    checkCave(caveNumber)
```

```
    print 'Do you want to play again? (yes or no)'
```

```
    playAgain = raw_input()
```

## Global Scope

```
playAgain == 'y'
```

```
caveNumber == '2'
```

# Code Explanation – step by step

```
friendlyCave = random.randint(1, 2)

if chosenCave == str(friendlyCave):
    print 'Gives you his treasure!'
else:
    print 'Gobbles you down in one bite!'
```

```
playAgain = 'yes'
while playAgain == 'yes' or playAgain == 'y':
```

```
    displayIntro()
```

```
    caveNumber = chooseCave()
```

```
    checkCave(caveNumber)
```

```
    print 'Do you want to play again? (yes or no)'
    playAgain = raw_input()
```

## Global Scope

```
playAgain == 'y'
```

```
caveNumber == '2'
```

# Code Explanation – step by step

```
friendlyCave = random.randint(1, 2)

if chosenCave == str(friendlyCave):
    print 'Gives you his treasure!'
else:
    print 'Gobbles you down in one bite!'
```

```
playAgain = 'yes'
while playAgain == 'yes' or playAgain == 'y':
```

```
    displayIntro()
```

```
    caveNumber = chooseCave()
```

```
    checkCave(caveNumber)
```

```
    print 'Do you want to play again? (yes or no)'
    playAgain = raw_input()
```

## Global Scope

```
playAgain == 'y'
```

```
caveNumber == '2'
```

# Code Explanation – step by step

```
import random
import time
```

```
def displayIntro():
```

```
    print 'You are in a land full of dragons. In front of you,'
    print 'you see two caves. In one cave, the dragon is friendly'
    print 'and will share his treasure with you. The other dragon'
    print 'is greedy and hungry, and will eat you on sight.'
    print
```

```
def chooseCave():
```

```
    cave = ''
```

```
    while cave != '1' and cave != '2':
```

```
        print 'Which cave will you go into? (1 or 2)'
```

```
        cave = raw_input()
```

```
    return cave
```

## Global Scope

```
playAgain == 'y'
```

```
caveNumber == '2'
```

# Code Explanation – step by step

```
import random
import time
```

```
def displayIntro():
```

```
    print 'You are in a land full of dragons. In front of you,'
    print 'you see two caves. In one cave, the dragon is friendly'
    print 'and will share his treasure with you. The other dragon'
    print 'is greedy and hungry, and will eat you on sight.'
    print
```

```
def chooseCave():
```

```
    cave = ''
```

```
    while cave != '1' and cave != '2':
```

```
        print 'Which cave will you go into? (1 or 2)'
```

```
        cave = raw_input()
```

```
    return cave
```

Global Scope

```
playAgain == 'y'
```

```
caveNumber == '2'
```

# Code Explanation – step by step

```
import random
import time
```

```
def displayIntro():
    print 'You are in a land full of dragons. In front of you,'
    print 'you see two caves. In one cave, the dragon is friendly'
    print 'and will share his treasure with you. The other dragon'
    print 'is greedy and hungry, and will eat you on sight.'
    print

def chooseCave():
    cave = ''
    while cave != '1' and cave != '2':
        print 'Which cave will you go into? (1 or 2)'
        cave = raw_input()

    return cave
```

## Global Scope

```
playAgain == 'y'
```

```
caveNumber == '2'
```



# Code Explanation – step by step

```
import random
import time
```

```
def displayIntro():
    print 'You are in a land full of dragons. In front of you,'
    print 'you see two caves. In one cave, the dragon is friendly'
    print 'and will share his treasure with you. The other dragon'
    print 'is greedy and hungry, and will eat you on sight.'
    print

def chooseCave():
    cave = ''
    while cave != '1' and cave != '2':
        print 'Which cave will you go into? (1 or 2)'
        cave = raw_input()

    return cave
```

## Global Scope

```
playAgain == 'y'
```

```
caveNumber == '2'
```

# Code Explanation – step by step

```
import random
import time
```

```
def displayIntro():
    print 'You are in a land full of dragons. In front of you,'
    print 'you see two caves. In one cave, the dragon is friendly'
    print 'and will share his treasure with you. The other dragon'
    print 'is greedy and hungry, and will eat you on sight.'
    print
```

```
def chooseCave():
    cave = ''
    while cave != '1' and cave != '2':
        print 'Which cave will you go into? (1 or 2)'
        cave = raw_input()

    return cave
```

## Global Scope

```
playAgain == 'y'
```

```
caveNumber == '2'
```

# Code Explanation – step by step

```
print 'is greedy and hungry, and will eat you on sight.'  
print
```

```
def chooseCave():  
    cave = ''  
    while cave != '1' and cave != '2':  
        print 'Which cave will you go into? (1 or 2)'  
        cave = raw_input()  
  
    return cave  
  
def checkCave(chosenCave):  
    print 'You approach the cave...'  
    time.sleep(2)  
    print 'It is dark and spooky...'  
    time.sleep(2)  
    print 'A large dragon jumps out in front of you! He opens his jaws and...'  
    print  
    time.sleep(2)  
  
    friendlyCave = random.randint(1, 2)  
  
    if chosenCave == str(friendlyCave):  
        print 'Gives you his treasure!'  
    else:  
        print 'Gobbles you down in one bite!'  
  
playAgain = 'yes'  
while playAgain == 'yes' or playAgain == 'y':  
  
    displayIntro()  
  
    caveNumber = chooseCave()  
  
    checkCave(caveNumber)
```

## Global Scope

```
playAgain == 'y'
```

```
caveNumber == '2'
```

# Code Explanation – step by step

```
print 'is greedy and hungry, and will eat you on sight.'
print

def chooseCave():
    cave = ''
    while cave != '1' and cave != '2':
        print 'Which cave will you go into? (1 or 2)'
        cave = raw_input()

    return cave

def checkCave(chosenCave):
    print 'You approach the cave...'
    time.sleep(2)
    print 'It is dark and spooky...'
    time.sleep(2)
    print 'A large dragon jumps out in front of you! He opens his jaws and...'
    print
    time.sleep(2)

    friendlyCave = random.randint(1, 2)

    if chosenCave == str(friendlyCave):
        print 'Gives you his treasure!'
    else:
        print 'Gobbles you down in one bite!'

playAgain = 'yes'
while playAgain == 'yes' or playAgain == 'y':

    displayIntro()

    caveNumber = chooseCave()

    checkCave(caveNumber)
```

## Global Scope

playAgain == 'y'

caveNumber == '2'

# Code Explanation – step by step

```
def chooseCave() :  
    cave = ''  
    while cave != '1' and cave != '2':  
        print 'Which cave will you go into? (1 or 2)'  
        cave = raw_input()  
  
    return cave  
  
def checkCave(chosenCave) :  
    print 'You approach the cave...'  
    time.sleep(2)  
    print 'It is dark and spooky...'  
    time.sleep(2)  
    print 'A large dragon jumps out in front of you! He opens his jaws and...'  
    print  
    time.sleep(2)  
  
    friendlyCave = random.randint(1, 2)  
  
    if chosenCave == str(friendlyCave):  
        print 'Gives you his treasure!'  
    else:  
        print 'Gobbles you down in one bite!'
```

## Global Scope

```
playAgain == 'y'  
caveNumber == '2'
```

# Code Explanation – step by step

```
def chooseCave():
    cave = ''
    while cave != '1' and cave != '2':
        print 'Which cave will you go into? (1 or 2)'
        cave = raw_input()

    return cave

def checkCave(chosenCave):
    print 'You approach the cave...'
    time.sleep(2)
    print 'It is dark and spooky...'
    time.sleep(2)
    print 'A large dragon jumps out in front of you! He opens his jaws and...'
    print
    time.sleep(2)

    friendlyCave = random.randint(1, 2)

    if chosenCave == str(friendlyCave):
        print 'Gives you his treasure!'
    else:
        print 'Gobbles you down in one bite!'
```

## Global Scope

playAgain == 'y'

caveNumber == '2'

# Code Explanation – step by step

```
def chooseCave():
    cave = ''
    while cave != '1' and cave != '2':
        print 'Which cave will you go into? (1 or 2)'
        cave = raw_input()

    return cave

def checkCave(chosenCave):
    print 'You approach the cave...'
    time.sleep(2)
    print 'It is dark and spooky...'
    time.sleep(2)
    print 'A large dragon jumps out in front of you! He opens his jaws and...'
    print
    time.sleep(2)

    friendlyCave = random.randint(1, 2)

    if chosenCave == str(friendlyCave):
        print 'Gives you his treasure!'
    else:
        print 'Gobbles you down in one bite!'
```

## Global Scope

```
playAgain == 'y'
caveNumber == '2'
```

## Lobal Scope

```
cave == ''
```

# Code Explanation – step by step

```
def chooseCave():
    cave = ''
    while cave != '1' and cave != '2':
        print 'Which cave will you go into? (1 or 2)'
        cave = raw_input()

    return cave

def checkCave(chosenCave):
    print 'You approach the cave...'
    time.sleep(2)
    print 'It is dark and spooky...'
    time.sleep(2)
    print 'A large dragon jumps out in front of you! He opens his jaws and...'
    print
    time.sleep(2)

    friendlyCave = random.randint(1, 2)

    if chosenCave == str(friendlyCave):
        print 'Gives you his treasure!'
    else:
        print 'Gobbles you down in one bite!'
```

## Global Scope

```
playAgain == 'y'
caveNumber == '2'
```

## Lobal Scope

```
cave == ''
```



# Code Explanation – step by step

```
def chooseCave():  
    cave = ''  
    while cave != '1' and cave != '2':  
        print 'Which cave will you go into? (1 or 2)'  
        cave = raw_input()
```

```
    return cave
```

```
def checkCave(chosenCave):  
    print 'You approach the cave...'  
    time.sleep(2)  
    print 'It is dark and spooky...'  
    time.sleep(2)  
    print 'A large dragon jumps out in front of you! He opens his jaws and...'  
    print  
    time.sleep(2)  
  
    friendlyCave = random.randint(1, 2)  
  
    if chosenCave == str(friendlyCave):  
        print 'Gives you his treasure!'  
    else:  
        print 'Gobbles you down in one bite!'
```

## Global Scope

```
playAgain == 'y'
```

```
caveNumber == '2'
```

## Local Scope

```
cave == ''
```

# Code Explanation – step by step

```
def chooseCave():
    cave = ''
    while cave != '1' and cave != '2':
        print 'Which cave will you go into? (1 or 2)'
        cave = raw_input()

    return cave

def checkCave(chosenCave):
    print 'You approach the cave...'
    time.sleep(2)
    print 'It is dark and spooky...'
    time.sleep(2)
    print 'A large dragon jumps out in front of you! He opens his jaws and...'
    print
    time.sleep(2)

    friendlyCave = random.randint(1, 2)

    if chosenCave == str(friendlyCave):
        print 'Gives you his treasure!'
    else:
        print 'Gobbles you down in one bite!'
```

## Global Scope

```
playAgain == 'y'
caveNumber == '2'
```

## Lobal Scope

```
cave == '1'
```

# Code Explanation – step by step

```
return cave
```

```
def checkCave(chosenCave):  
    print 'You approach the cave...'  
    time.sleep(2)  
    print 'It is dark and spooky...'  
    time.sleep(2)  
    print 'A large dragon jumps out in front of you! He opens his jaws and...'  
    print  
    time.sleep(2)  
  
    friendlyCave = random.randint(1, 2)  
  
    if chosenCave == str(friendlyCave):  
        print 'Gives you his treasure!'  
    else:  
        print 'Gobbles you down in one bite!'  
  
playAgain = 'yes'  
while playAgain == 'yes' or playAgain == 'y':  
  
    displayIntro()  
  
    caveNumber = chooseCave()  
  
    checkCave(caveNumber)  
  
    print 'Do you want to play again? (yes or no)'  
    playAgain = raw_input()
```

## Global Scope

```
playAgain == 'y'
```

```
caveNumber == '2'
```

## Local Scope

```
cave == '1'
```

# Code Explanation – step by step

```
return cave
```

```
def checkCave(chosenCave) :  
    print 'You approach the cave...'  
    time.sleep(2)  
    print 'It is dark and spooky...'  
    time.sleep(2)  
    print 'A large dragon jumps out in front of you! He opens his jaws and...'  
    print  
    time.sleep(2)  
  
    friendlyCave = random.randint(1, 2)  
  
    if chosenCave == str(friendlyCave):  
        print 'Gives you his treasure!'  
    else:  
        print 'Gobbles you down in one bite!'  
  
playAgain = 'yes'  
while playAgain == 'yes' or playAgain == 'y':  
  
    displayIntro()  
  
    caveNumber = chooseCave()  
  
    checkCave(caveNumber)  
  
    print 'Do you want to play again? (yes or no)'  
    playAgain = raw_input()
```

## Global Scope

```
playAgain == 'y'
```

```
caveNumber == '1'
```

# Code Explanation – step by step

```
return cave
```

```
def checkCave(chosenCave):  
    print 'You approach the cave...'  
    time.sleep(2)  
    print 'It is dark and spooky...'  
    time.sleep(2)  
    print 'A large dragon jumps out in front of you! He opens his jaws and...'  
    print  
    time.sleep(2)  
  
    friendlyCave = random.randint(1, 2)  
  
    if chosenCave == str(friendlyCave):  
        print 'Gives you his treasure!'  
    else:  
        print 'Gobbles you down in one bite!'  
  
playAgain = 'yes'  
while playAgain == 'yes' or playAgain == 'y':  
  
    displayIntro()  
  
    caveNumber = chooseCave()  
  
    checkCave(caveNumber)  
  
    print 'Do you want to play again? (yes or no)'  
    playAgain = raw_input()
```

## Global Scope

```
playAgain == 'y'
```

```
caveNumber == '1'
```

# Code Explanation – step by step

```
    return cave

def checkCave(chosenCave) :
    print 'You approach the cave...'
    time.sleep(2)
    print 'It is dark and spooky...'
    time.sleep(2)
    print 'A large dragon jumps out in front of you! He opens his jaws and...'
    print
    time.sleep(2)

    friendlyCave = random.randint(1, 2)

    if chosenCave == str(friendlyCave):
        print 'Gives you his treasure!'
    else:
        print 'Gobbles you down in one bite!'

playAgain = 'yes'
while playAgain == 'yes' or playAgain == 'y':

    displayIntro()

    caveNumber = chooseCave()

    checkCave(caveNumber)

    print 'Do you want to play again? (yes or no)'
    playAgain = raw_input()
```

## Global Scope

```
playAgain == 'y'
caveNumber == '1'
```

## Local Scope

```
chosenCave == '1'
```

# Code Explanation – step by step

```
    return cave

def checkCave(chosenCave):
    print 'You approach the cave...'
    time.sleep(2)
    print 'It is dark and spooky...'
    time.sleep(2)
    print 'A large dragon jumps out in front of you! He opens his jaws and...'
    print
    time.sleep(2)

    friendlyCave = random.randint(1, 2)

    if chosenCave == str(friendlyCave):
        print 'Gives you his treasure!'
    else:
        print 'Gobbles you down in one bite!'

playAgain = 'yes'
while playAgain == 'yes' or playAgain == 'y':

    displayIntro()

    caveNumber = chooseCave()

    checkCave(caveNumber)

    print 'Do you want to play again? (yes or no)'
    playAgain = raw_input()
```

## Global Scope

```
playAgain == 'y'
```

```
caveNumber == '1'
```

## Local Scope

```
chosenCave == '1'
```

# Code Explanation – step by step

```
    return cave

def checkCave(chosenCave):
    print 'You approach the cave...'
    time.sleep(2)
    print 'It is dark and spooky...'
    time.sleep(2)
    print 'A large dragon jumps out in front of you! He opens his jaws and...'
    print
    time.sleep(2)

    friendlyCave = random.randint(1, 2)

    if chosenCave == str(friendlyCave):
        print 'Gives you his treasure!'
    else:
        print 'Gobbles you down in one bite!'

playAgain = 'yes'
while playAgain == 'yes' or playAgain == 'y':

    displayIntro()

    caveNumber = chooseCave()

    checkCave(caveNumber)

    print 'Do you want to play again? (yes or no)'
    playAgain = raw_input()
```

## Global Scope

```
playAgain == 'y'
caveNumber == '1'
```

## Local Scope

```
chosenCave == '1'
```



# Code Explanation – step by step

```
    return cave

def checkCave(chosenCave):
    print 'You approach the cave...'
    time.sleep(2)
    print 'It is dark and spooky...'
    time.sleep(2)
    print 'A large dragon jumps out in front of you! He opens his jaws and...'
    print
    time.sleep(2)

    friendlyCave = random.randint(1, 2)

    if chosenCave == str(friendlyCave):
        print 'Gives you his treasure!'
    else:
        print 'Gobbles you down in one bite!'

playAgain = 'yes'
while playAgain == 'yes' or playAgain == 'y':

    displayIntro()

    caveNumber = chooseCave()

    checkCave(caveNumber)

    print 'Do you want to play again? (yes or no)'
    playAgain = raw_input()
```

## Global Scope

```
playAgain == 'y'
```

```
caveNumber == '1'
```

## Local Scope

```
chosenCave == '1'
```

# Code Explanation – step by step

```
    return cave

def checkCave(chosenCave):
    print 'You approach the cave...'
    time.sleep(2)
    print 'It is dark and spooky...'
    time.sleep(2)
    print 'A large dragon jumps out in front of you! He opens his jaws and...'
    print
    time.sleep(2)

    friendlyCave = random.randint(1, 2)

    if chosenCave == str(friendlyCave):
        print 'Gives you his treasure!'
    else:
        print 'Gobbles you down in one bite!'

playAgain = 'yes'
while playAgain == 'yes' or playAgain == 'y':

    displayIntro()

    caveNumber = chooseCave()

    checkCave(caveNumber)

    print 'Do you want to play again? (yes or no)'
    playAgain = raw_input()
```

## Global Scope

```
playAgain == 'y'
```

```
caveNumber == '1'
```

## Local Scope

```
chosenCave == '1'
```

# Code Explanation – step by step

```
return cave
```

```
def checkCave(chosenCave) :  
    print 'You approach the cave...'  
    time.sleep(2)  
    print 'It is dark and spooky...'  
    time.sleep(2)  
    print 'A large dragon jumps out in front of you! He opens his jaws and...'  
    print  
    time.sleep(2)  
  
    friendlyCave = random.randint(1, 2)  
  
    if chosenCave == str(friendlyCave):  
        print 'Gives you his treasure!'  
    else:  
        print 'Gobbles you down in one bite!'  
  
playAgain = 'yes'  
while playAgain == 'yes' or playAgain == 'y':  
  
    displayIntro()  
  
    caveNumber = chooseCave()  
  
    checkCave(caveNumber)  
  
    print 'Do you want to play again? (yes or no)'  
    playAgain = raw_input()
```

## Global Scope

```
playAgain == 'y'
```

```
caveNumber == '1'
```

## Local Scope

```
chosenCave == '1'
```

# Code Explanation – step by step

```
return cave
```

```
def checkCave(chosenCave):  
    print 'You approach the cave...'  
    time.sleep(2)  
    print 'It is dark and spooky...'  
    time.sleep(2)  
    print 'A large dragon jumps out in front of you! He opens his jaws and...'  
    print  
    time.sleep(2)
```

```
friendlyCave = random.randint(1, 2)
```

```
if chosenCave == str(friendlyCave):  
    print 'Gives you his treasure!'  
else:  
    print 'Gobbles you down in one bite!'
```

```
playAgain = 'yes'  
while playAgain == 'yes' or playAgain == 'y':
```

```
    displayIntro()
```

```
    caveNumber = chooseCave()
```

```
    checkCave(caveNumber)
```

```
    print 'Do you want to play again? (yes or no)'  
    playAgain = raw_input()
```

## Global Scope

```
playAgain == 'y'
```

```
caveNumber == '1'
```

## Local Scope

```
chosenCave == '1'
```

# Code Explanation – step by step

```
return cave
```

```
def checkCave(chosenCave) :  
    print 'You approach the cave...'  
    time.sleep(2)  
    print 'It is dark and spooky...'  
    time.sleep(2)  
    print 'A large dragon jumps out in front of you! He opens his jaws and...'  
    print  
    time.sleep(2)
```

```
friendlyCave = random.randint(1, 2)
```

```
if chosenCave == str(friendlyCave):  
    print 'Gives you his treasure!'  
else:  
    print 'Gobbles you down in one bite!'
```

```
playAgain = 'yes'  
while playAgain == 'yes' or playAgain == 'y':
```

```
    displayIntro()
```

```
    caveNumber = chooseCave()
```

```
    checkCave(caveNumber)
```

```
    print 'Do you want to play again? (yes or no)'  
    playAgain = raw_input()
```

## Global Scope

```
playAgain == 'y'
```

```
caveNumber == '1'
```

## Local Scope

```
chosenCave == '1'
```

# Code Explanation – step by step

```
return cave
```

```
def checkCave(chosenCave) :  
    print 'You approach the cave...'  
    time.sleep(2)  
    print 'It is dark and spooky...'  
    time.sleep(2)  
    print 'A large dragon jumps out in front of you! He opens his jaws and...'  
    print  
    time.sleep(2)
```

```
friendlyCave = random.randint(1, 2)
```

```
if chosenCave == str(friendlyCave):  
    print 'Gives you his treasure!'  
else:  
    print 'Gobbles you down in one bite!'
```

```
playAgain = 'yes'  
while playAgain == 'yes' or playAgain == 'y':
```

```
    displayIntro()
```

```
    caveNumber = chooseCave()
```

```
    checkCave(caveNumber)
```

```
    print 'Do you want to play again? (yes or no)'  
    playAgain = raw_input()
```

## Global Scope

```
playAgain == 'y'
```

```
caveNumber == '1'
```

## Local Scope

```
chosenCave == '1'
```

```
friendlyCave == 2
```

# Code Explanation – step by step

```
return cave
```

```
def checkCave(chosenCave) :  
    print 'You approach the cave...'  
    time.sleep(2)  
    print 'It is dark and spooky...'  
    time.sleep(2)  
    print 'A large dragon jumps out in front of you! He opens his jaws and...'  
    print  
    time.sleep(2)  
  
    friendlyCave = random.randint(1, 2)  
  
    if chosenCave == str(friendlyCave):  
        print 'Gives you his treasure!'  
    else:  
        print 'Gobbles you down in one bite!'
```

```
playAgain = 'yes'  
while playAgain == 'yes' or playAgain == 'y':  
  
    displayIntro()  
  
    caveNumber = chooseCave()  
  
    checkCave(caveNumber)  
  
    print 'Do you want to play again? (yes or no)'  
    playAgain = raw_input()
```

## Global Scope

```
playAgain == 'y'  
caveNumber == '1'
```

## Local Scope

```
chosenCave == '1'  
friendlyCave == 2
```

# Code Explanation – step by step

```
friendlyCave = random.randint(1, 2)

if chosenCave == str(friendlyCave):
    print 'Gives you his treasure!'
else:
    print 'Gobbles you down in one bite!'

playAgain = 'yes'
while playAgain == 'yes' or playAgain == 'y':

    displayIntro()

    caveNumber = chooseCave()

    checkCave(caveNumber)

    print 'Do you want to play again? (yes or no)'
    playAgain = raw_input()
```

## Global Scope

```
playAgain == 'y'
```

```
caveNumber == '1'
```



# Code Explanation – step by step

```
friendlyCave = random.randint(1, 2)

if chosenCave == str(friendlyCave):
    print 'Gives you his treasure!'
else:
    print 'Gobbles you down in one bite!'

playAgain = 'yes'
while playAgain == 'yes' or playAgain == 'y':

    displayIntro()

    caveNumber = chooseCave()

    checkCave(caveNumber)

    print 'Do you want to play again? (yes or no)'
    playAgain = raw_input()
```

## Global Scope

```
playAgain == 'n'
```

```
caveNumber == '1'
```

# Code Explanation – step by step

```
friendlyCave = random.randint(1, 2)

if chosenCave == str(friendlyCave):
    print 'Gives you his treasure!'
else:
    print 'Gobbles you down in one bite!'
```

```
playAgain = 'yes'
while playAgain == 'yes' or playAgain == 'y':
```

```
    displayIntro()
```

```
    caveNumber = chooseCave()
```

```
    checkCave(caveNumber)
```

```
    print 'Do you want to play again? (yes or no)'
    playAgain = raw_input()
```

## Global Scope

```
playAgain == 'n'
```

```
caveNumber == '1'
```

# Code Explanation – step by step

```
friendlyCave = random.randint(1, 2)

if chosenCave == str(friendlyCave):
    print 'Gives you his treasure!'
else:
    print 'Gobbles you down in one bite!'

playAgain = 'yes'
while playAgain == 'yes' or playAgain == 'y':

    displayIntro()

    caveNumber = chooseCave()

    checkCave(caveNumber)

    print 'Do you want to play again? (yes or no)'
    playAgain = raw_input()
```

## Global Scope

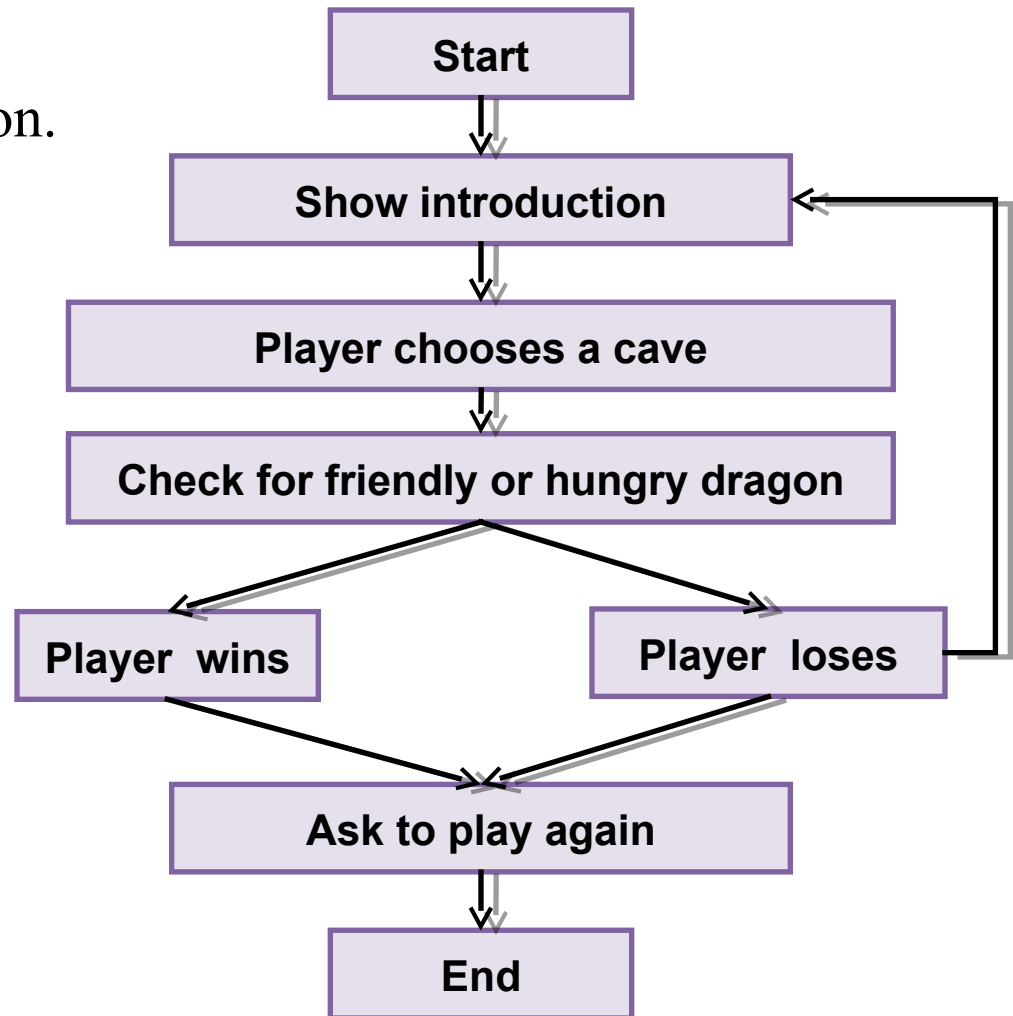
```
playAgain == 'n'
```

```
caveNumber == '1'
```

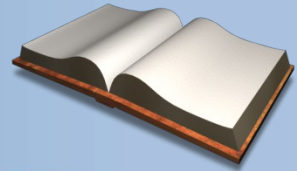
# Designing the Program

## ■ Flow chart

- shows every possible action.



# Things Covered In This Chapter



- The `time` module.
- The `time.sleep()` function.
- The `return` keyword.
- Creating our own functions with the `def` keyword.
- The `and` and `or` and `not` boolean operators.
- Truth tables
- Variable scope (Global and Local)
- Parameters and Arguments
- Flow charts