Python Beginner's Mistakes

Python is a relatively easy language to get started in where there's plenty of room for the beginner to find their programming feet. However, as with any other programming language, it can be easy to make common mistakes that'll stop your code from running.

DEF BEGINNER(MISTAKES=10)

Here are ten common Python programming mistakes most beginners find themselves making. Being able to identify these mistakes will save you headaches in the future.

VERSIONS

To add to the confusion that most beginners already face when coming into programming, Python has two live versions of its language available to download and use. There is Python version 2.7.x and Python 3.6.x. The 3.6.x version is the most recent, and the one we'd recommend starting. But, version 2.7.x code doesn't always work with 3.6.x code and vice versa.

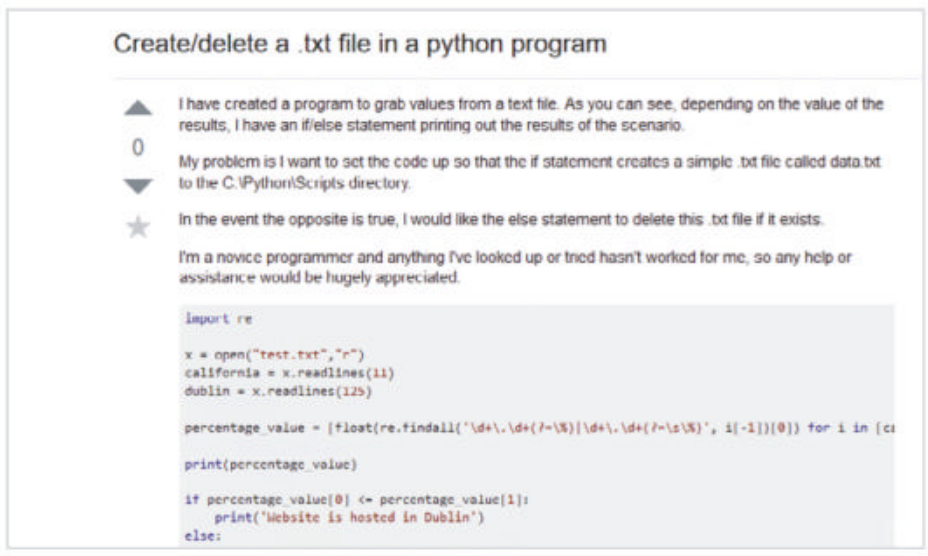
INDENTS, TABS AND SPACES

Python uses precise indentations when displaying its code. The indents mean that the code in that section is a part of the previous statement, and not something linked with another part of the code. Use four spaces to create an indent, not the Tab key.

```
MOVESPEED = 11
MOVE = 1
SHOOT = 15

# set up counting
score = 0

# set up font
font = pygame.font.SysFont('calibri', 50)

def makeplayer():
    player = pygame.Rect(370, 635, 60, 25)
    return player

def makeinvaders(invaders):
    y = 0
    for i in invaders:
        x = 0
        for j in range(11):
            invader = pygame.Rect(75+x, 75+y, 50, 20)
            i.append(invader)
            x += 60
        y += 45
    return invaders

def makewalls(walls):
    wall1 = pygame.Rect(60, 520, 120, 30)
    wall2 = pygame.Rect(246, 520, 120, 30)
    wall3 = pygame.Rect(432, 520, 120, 30)
    wall4 = pygame.Rect(618, 520, 120, 30)
    walls = [wall1, wall2, wall3, wall4]
```

THE INTERNET

Every programmer has and does at some point go on the Internet and copy some code to insert into their own routines. There's nothing wrong with using others' code, but you need to know how the code works and what it does before you go blindly running it on your own computer.



COMMENTING

Again we mention commenting. It's a hugely important factor in programming, even if you're the only one who is ever going to view the code, you need to add comments as to what's going on. Is this function where you lose a life? Write a comment and help you, or anyone else, see what's going on.

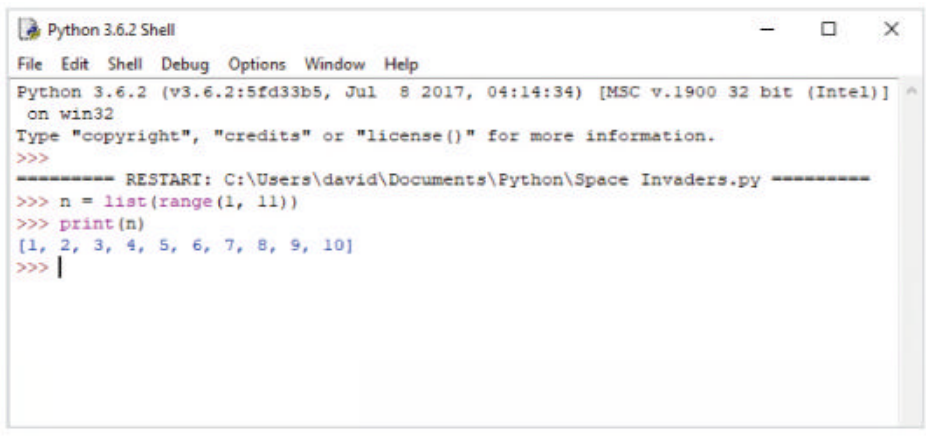
```
# set up pygame
pygame.init()
mainClock = pygame.time.Clock()

# set up the window
width = 800
height = 700
screen = pygame.display.set_mode((width, height), 0, 32)
pygame.display.set_caption('caption')

# set up movement variables
moveLeft = False
moveRight = False
moveUp = False
moveDown = False

# set up direction variables
DOWNLEFT = 1
DOWNRIGHT = 3
```

COUNTING LOOPS

Remember that in Python a loop doesn't count the last number you specify in a range. So if you wanted the loop to count from 1 to 10, then you will need to use:

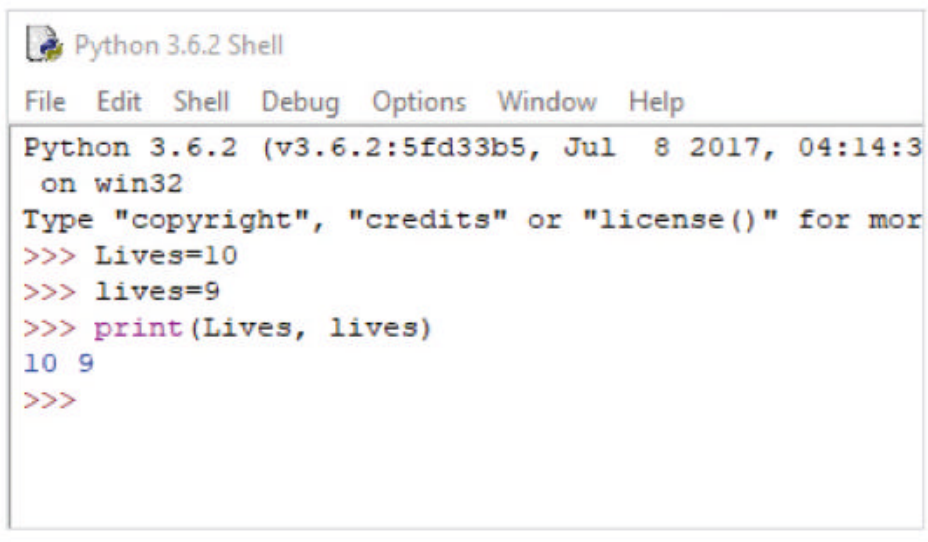
```
n = list(range(1, 11))
```

Which will return 1 to 10.



CASE SENSITIVE

Python is a case sensitive programming language, so you will need to check any variables you assign. For example, `Lives=10` is a different variable to lives=10, calling the wrong variable in your code can have unexpected results.



BRACKETS

Everyone forgets to include that extra bracket they should have added to the end of the statement. Python relies on the routine having an equal amount of closed brackets to open brackets, so any errors in your code could be due to you forgetting to count your brackets; including square brackets.

```
def print_game_status(self):
        print (board[len(self.missed_letters)])
        print ('Word: ' + self.hide_word())
        print ('Letters Missed: ',)
        for letter in self.missed_letters:
                print (letter,)
        print ()
        print ('Letters Guessed: ',)
        for letter in self.guessed_letters:
                print (letter,)
        print ()
```

COLONS

It's common for beginners to forget to add a colon to the end of a structural statement, such as:

```
class Hangman:
def guess(self, letter):
```

And so on. The colon is what separates the code, and creates the indents to which the following code belongs to.

```
class Hangman:
        def __init__(self,word):
                self.word = word
                self.missed_letters = []
                self.guessed_letters = []

        def guess(self,letter):
                if letter in self.word and letter not in self.guessed_letters:
                        self.guessed_letters.append(letter)
                elif letter not in self.word and letter not in self.missed_letters:
                        self.missed_letters.append(letter)
                else:
                        return False
                return True

        def hangman_over(self):
                return self.hangman_won() or (len(self.missed_letters) == 6)

        def hangman_won(self):
                if '_' not in self.hide_word():
                        return True
                return False

        def hide_word(self):
                rtn = ''
                for letter in self.word:
                        if letter not in self.guessed_letters:
                                rtn += '_'
                        else:
                                rtn += letter
                return rtn
```

OPERATORS

Using the wrong operator is also a common mistake to make. When you're performing a comparison between two values, for example, you need to use the equality operator (a double equals, ==). Using a single equal (=) is an assignment operator that places a value to a variable (such as, lives=10).

```
b = 5
c = 10
d = 10
b == c #false because 5 is not equal to 10
c == d #true because 10 is equal to 10
```

OPERATING SYSTEMS

Writing code for multiple platforms is difficult, especially when you start to utilise the external commands of the operating system. For example, if your code calls for the screen to be cleared, then for Windows you would use `cls`. Whereas, for Linux you need to use `clear`. You need to solve this by capturing the error and issuing it with an alternative command.

```
# Code to detect error for using a different OS
run=1
while(run==1):
    try:
        os.system('clear')
    except OSError:
        os.system('cls')
    print('\n>>>>>>>>>>Python 3 File Manager<<<<<<<<<<\n')
```