

Hadi Heydarizadeh Shali, Python Programming Tools, Spring 2022, First report
(Errors and debugging):

Question: Download the code inC_1_1_ball.py from eLearn and confirm that the copy runs without error. You can now introduce errors in the code, one at a time. For each error introduced, save and run the program, and observe how well Python's debugging tools can track the actual error. When you are finished with one error, re-set the program to the original (and check that it works!) before moving on to the next error.

Original Code:

```
1-      # Program for computing the height of a ball in vertical motion

2-      v0 = 5          # Initial velocity
3-      g = 9.81        # Acceleration of gravity
4-      t = 0.6          # Time

5-      y = v0*t - 0.5*g*t**2    # Vertical position

6-      print( y)
```

Result:

1.2342

a) Insert the word *hello* on the empty line above the assignment to *v0*:

Code:

```
1- # Program for computing the height of a ball in vertical motion
2- hello
3- v0 = 5          # Initial velocity
4- g = 9.81        # Acceleration of gravity
5- t = 0.6          # Time

6- y = v0*t - 0.5*g*t**2    # Vertical position

7- print( y)
```

Result:

hello

NameError: name 'hello' is not defined

b) Remove the # sign in front of the comment initial velocity:

Code:

1- *Program for computing the height of a ball in vertical motion*

2- $v0 = 5$ *# Initial velocity*

3- $g = 9.81$ *# Acceleration of gravity*

4- $t = 0.6$ *# Time*

5- $y = v0*t - 0.5*g*t**2$ *# Vertical position*

6- $print(y)$

Result:

Program for computing the height of a ball in vertical motion

^

SyntaxError: invalid syntax

c) Remove the = sign in the assignment to v0.

Code:

1- *# Program for computing the height of a ball in vertical motion*

2- $v0 \ 5$ *# Initial velocity*

3- $g = 9.81$ *# Acceleration of gravity*

4- $t = 0.6$ *# Time*

5- $y = v0*t - 0.5*g*t**2$ *# Vertical position*

6- $print(y)$

Result:

$v0 \ 5$ *# Initial velocity*

^

SyntaxError: invalid syntax

d) Change the reserved word *print* into *pint*.

Code:

1- *# Program for computing the height of a ball in vertical motion*

2- $v0 = 5$ *# Initial velocity*

3- $g = 9.81$ *# Acceleration of gravity*

4- $t = 0.6$ *# Time*

5- $y = v0*t - 0.5*g*t**2$ *# Vertical position*

6- *pint(y)*

Result:

pint(y)

NameError: name 'pint' is not defined

e) Change the calculation of y to $y = v0*t$.

Code:

1- *# Program for computing the height of a ball in vertical motion*

2- $v0 = 5$ *# Initial velocity*

3- $g = 9.81$ *# Acceleration of gravity*

4- $t = 0.6$ *# Time*

5- $y = v0*t$ *# Vertical position*

6- *pint(y)*

Result:

3.0