

Syntax Errors

What is a Syntax Error?

A Syntax Error is an error which arises as a result of grammatical errors in the code.

A Program with a Syntax Error does not run.

A Program with a Syntax Error does not compile.

Examples of Programs with Syntax Errors include:-

- (1) Misspelling of Keywords such as print**
- (2) Variable Names not defined**
- (3) Missing Quotation Marks**
- (4) Missing Parenthesis (or otherwise known as brackets)**
- (5) Missing Indentation**
- (6) Missing Colons**

All of this is best understood by looking at examples.

Correct Program 1 - Misspelling of a Keyword

```
## Program 1 - Misspelling of a Keyword  
a = 10  
b = 12  
total = a+b  
pint(total)
```

Error Message from trying to run Program 1

```
NameError                                Traceback (most recent call last)  
<ipython-input-18-07967ce41d38> in <module>  
      3 b = 12  
      4 total = a+b  
----> 5 pint(total)
```

```
NameError: name 'pint' is not defined
```

Program 1 - Misspelling of a Keyword

```
## Program 1 - Misspelling of a Keyword  
a = 10  
b = 12  
total = a+b  
pint(total)
```

Error Message from trying to run Program 1

```
NameError                                Traceback (most recent call last)  
<ipython-input-18-07967ce41d38> in <module>  
      3 b = 12  
      4 total = a+b  
----> 5 pint(total)
```

```
NameError: name 'pint' is not defined
```

Corrected Program 1

```
## Program 1 - Corrected - Misspelling of a Keyword
```

```
a = 10
```

```
b = 12
```

```
total = a+b
```

```
print(total) # In the above program pint should have been print
```

Correct Program 2 - Forgetting Quotation Marks

```
## Program 2 - Forgetting Quotation Marks
```

```
name = input(" What is your name ? ")
```

```
Subject = input("What is your favourite subject? ")
```

```
print(name, " Your favourite subject is , Subject)
```

Error Message from trying to run Program 2

File "<ipython-input-3-3a7e60327ee0>", line 4

print(name, " Your favourite subject is , Subject)

^
—

SyntaxError: EOL while scanning string literal

Program 2 - Forgetting Quotation Marks

```
## Program 2 - Forgetting Quotation Marks
```

```
name = input(" What is your name ? ")
```

```
Subject = input("What is your favourite subject? ")
```

```
print(name, " Your favourite subject is , Subject)
```

Error Message from trying to run Program 2

```
File "<ipython-input-3-3a7e60327ee0>", line 4  
    print(name, " Your favourite subject is , Subject)
```

^
—

SyntaxError: EOL while scanning string literal

Corrected Program 2

```
## Program 2 - Corrected - Forgetting Quotation Marks
```

```
name = input(" What is your name ? ")
```

```
Subject = input("What is your favourite subject? ")
```

```
print(name, " Your favourite subject is ", Subject) # A Quotation Mark was missing
```

Correct Program 3 - Variable name not defined/defined

```
##Program 3 - Variable Name Not Found/Defined  
Apples = 10  
Bananas = 12  
Total = apples + Bananas  
print(Total)
```

Error Message from trying to run Program 3

```
NameError                                Traceback (most recent call last)  
<ipython-input-1-1f67d6c11bdc> in <module>  
      2 Apples = 10  
      3 Bananas = 12  
----> 4 Total = apples + Bananas  
      5 print(Total)
```

NameError: name 'apples' is not defined

Program 3 - Variable name not defined/found

```
##Program 3 - Variable Name Not Found/Defined  
Apples = 10  
Bananas = 12  
Total = apples + Bananas  
print(Total)
```

Error Message from trying to run Program 2

```
NameError                                Traceback (most recent call last)  
<ipython-input-1-1f67d6c11bdc> in <module>  
      2 Apples = 10  
      3 Bananas = 12  
----> 4 Total = apples + Bananas  
      5 print(Total)
```

```
NameError: name 'apples' is not defined
```

Corrected Program 3

```
##Program 3 - Corrected - Variable Name Not Found/Defined  
Apples = 10  
Bananas = 12  
Total = Apples + Bananas    #The variable apples should be Apples!  
print(Total)
```


Correct Program 4 - Variable Name not found/defined

```
## Program 4 - Variable Name not found
x = 6
y = 8
product = x*y
print(products)
```

Error Message from trying to run Program 4

```
NameError                                Traceback (most recent call last)
<ipython-input-2-174049d6c5f8> in <module>
      3 y = 8
      4 product = x*y
----> 5 print(products)

NameError: name 'products' is not defined
```

Program 4 - Variable Name not found/defined

```
## Program 4 - Variable Name not found
x = 6
y = 8
product = x*y
print(products)
```

Error Message from trying to run Program 4

```
NameError                                Traceback (most recent call last)
<ipython-input-2-174049d6c5f8> in <module>
      3 y = 8
      4 product = x*y
----> 5 print(products)
```

NameError: name 'products' is not defined

Corrected Program 4

```
## Program 4 - Corrected - Variable Name not found
x = 6
y = 8
product = x*y
print(product) #The Variable name is product not products
```

Correct Program 5 - Missing Parenthesis (or brackets)

```
## Program 5 - Missing Parenthesis (or otherwise known as Brackets)
Hours = int(input("How many hours do you spend sleeping each day"))
print(Hours)
```

Error Message from trying to run Program 5

```
File "<ipython-input-4-2a395ee2bd6c>", line 3
    print(Hours)
```

^

```
SyntaxError: invalid syntax
```

Program 5 - Missing Parenthesis (or brackets)

```
## Program 5 - Missing Parenthesis (or otherwise known as Brackets)
Hours = int(input("How many hours do you spend sleeping each day"))
print(Hours)
```

Error Message from trying to run Program 5

```
File "<ipython-input-4-2a395ee2bd6c>", line 3
    print(Hours)
          ^
SyntaxError: invalid syntax
```

Corrected Program 5

```
## Program 5 - Corrected - Missing Parenthesis (or otherwise known as Brackets)
Hours = int(input("How many hours do you spend sleeping each day")) #You need to balance the
brackets
print(Hours)
```

Correct Program 6 - Missing Brackets/Parenthesis

```
## Program 6 - Missing Brackets/Parenthesis
```

```
Minutes = int(input("How many minutes does it take you to get to school? "))  
print(Minutes)
```

Error Message from trying to run Program 6

```
File "<ipython-input-7-fe3f9a69f31f>", line 3  
    print(Minutes)  
          ^  
SyntaxError: invalid syntax
```

Program 6 - Missing Brackets/Parenthesis

```
## Program 6 - Missing Brackets/Parenthesis
```

```
Minutes = int(input("How many minutes does it take you to get to school? "))  
print(Minutes)
```

```
Error Message from trying to run Program 6  
File "<ipython-input-7-fe3f9a69f31f>", line 3  
    print(Minutes)  
          ^  
SyntaxError: invalid syntax
```

Corrected Program 6

```
## Program 6 - Corrected - Missing Brackets/Parenthesis
```

```
Minutes = int(input("How many minutes does it take you to get to school? ")) # You need to balance the brackets  
print(Minutes)
```

Correct Program 7 - Forgetting a colon

```
### Program 7 - Forgetting a Colon
```

```
age = int(input("How old are you? "))  
if age >=18  
    print("You are old enough to vote")  
else:  
    print("You are too young to vote ")
```

Error Message from trying to run Program 7

```
File "<ipython-input-8-b692b3cff3fd>", line 3  
    if age >=18  
           ^  
SyntaxError: invalid syntax
```

Program 7 - Forgetting a colon

```
### Program 7 - Forgetting a Colon

age = int(input("How old are you? "))
if age >=18
    print("You are old enough to vote")
else:
    print("You are too young to vote ")
```

Error Message from trying to run Program 7

```
File "<ipython-input-8-b692b3cff3fd>", line 3
    if age >=18
               ^
SyntaxError: invalid syntax
```

Corrected Program 7

```
### Program 7 - Corrected - Forgetting a Colon
age = int(input("How old are you? "))
if age >=18:    #This statement needs a colon
    print("You are old enough to vote")
else:
    print("You are too young to vote ")
```


Correct Program 8 - Forgetting the Colon

```
## Program 8 - Forgetting the Colon
Minutes = int(input("How many minutes does it take you to get to school ?"))
if Minutes > 60:
    print("That is a lot of time ")
else
    print("That is a reasonable amount of time")
```

Error Message from trying to run Program 8

File "<ipython-input-10-7ea4950ff675>", line 5

else

^

SyntaxError: invalid syntax

Program 8 - Forgetting the Colon

```
## Program 8 - Forgetting the Colon
Minutes = int(input("How many minutes does it take you to get to school ?"))
if Minutes > 60:
    print("That is a lot of time ")
else
    print("That is a reasonable amount of time")
```

Error Message from trying to run Program 8

```
File "<ipython-input-10-7ea4950ff675>", line 5
    else
      ^
SyntaxError: invalid syntax
```

Corrected Program 8

```
## Program 8 - Corrected Program - Forgetting the Colon
Minutes = int(input("How many minutes does it take you to get to school ?"))
if Minutes > 60:
    print("That is a lot of time ")
else:                                     # A Colon is needed after the else
    print("That is a reasonable amount of time")
```

Correct Program 9 - Forgetting the colon

```
## Program 9 - Forgetting the colon
```

```
for j in range(1,5)  
    k = j**2  
    print(k)
```

Error Message from trying to run Program 9

File "<ipython-input-12-0e181aeb84f9>", line 2
 for j in range(1,5)

^

SyntaxError: invalid syntax

Program 9 - Forgetting the colon

```
## Program 9 - Forgetting the colon
```

```
for j in range(1,5)  
    k = j**2  
    print(k)
```

Error Message from trying to run Program 9

```
File "<ipython-input-12-0e181aeb84f9>", line 2  
    for j in range(1,5)
```

^

SyntaxError: invalid syntax

Corrected Program 9

```
## Program 9 - Correction - Forgetting the colon  
for j in range(1,5):    # A colon is expected here  
    k = j**2  
    print(k)
```

Program 10 - Missing Indentation

```
### Program 10 - Missing Indentation
Minutes = int(input("How many minutes does it take you to get to school ?"))
if Minutes >=60:
print("That is a lot of time ")
else:
    print("That is a reasonable amount of time ")
```

Error Message from trying to run Program 10

```
File "<ipython-input-8-efd14189616e>", line 4
    print("That is a lot of time ")
    ^
```

IndentationError: expected an indented block

Program 10 - Missing Indentation

```
### Program 10 - Missing Indentation
Minutes = int(input("How many minutes does it take you to get to school ?"))
if Minutes >=60:
print("That is a lot of time ")
else:
    print("That is a reasonable amount of time ")
```

Error Message from trying to run Program 10

```
File "<ipython-input-8-efd14189616e>", line 4
    print("That is a lot of time ")
    ^
IndentationError: expected an indented block
```

Corrected Program 10

```
### Program 10 - Correction - Missing Indentation
Minutes = int(input("How many minutes does it take you to get to school ?"))
if Minutes >=60:
    print("That is a lot of time ")    # This line is now indented
else:
    print("That is a reasonable amount of time ")
```

Correct Program 11 - Missing Indentation

```
### Program 11 - Missing Indentation
```

```
for j in range(1,5):  
k = j**3  
print(k)
```

Error Message from trying to run Program 11

File "<ipython-input-16-33dc5a4c42f4>", line 3

```
k = j**3  
^
```

IndentationError: expected an indented block

Program 11 - Missing Indentation

```
### Program 11 - Missing Indentation
```

```
for j in range(1,5):  
k = j**3  
print(k)
```

Error Message from trying to run Program 11

File "<ipython-input-16-33dc5a4c42f4>", line 3

```
k = j**3  
^
```

IndentationError: expected an indented block

Corrected Program 11

```
### Program 11 - Correction - Missing Indentation  
for j in range(1,5):  
    k = j**3 # The for block needs to be indented  
    print(k)
```