

# ECTTP: Overview

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# Course Overview

- Week One: Course overview
- Week One: Variables
- Week Two: Conditions
- Week Three: Loops
- Week Four: Functions
- Week Five: Tuples
- Week Six: Lists
- **Week Seven: How to think as a programmer ←**
- **First Test! (vrijdag 21 oktober)**
- Week Eight: Classes and Objects
- Week Nine:
- Week Ten:
- Week Eleven:
- **Second Test!**

# Onderwerpen

- Variabele
- Datatype
- Conditie
- For-loop
- If-statement
- While-loop
- Functie
- Integer
- String
- List
- Boolean
- Operatoren
- Scope
- Range
- Return
- Tuple
- Indenten
- Def
- Elif
- Else

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# How to think as a programmer

1. What exactly does my function return ? And so which variables do I need (and what type are they and what are their starting values)?
2. Is there an if-statement needed or multiple ifs (is there a branch needed in my code)? What would be the condition?
3. Do I need a for-loop to traverse a word or list? If so, what would be the range?

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# Example

Write a function called `count_hi(inputString)`, which returns the number of times that the string "hi" appears anywhere in the `inputString`.

Examples:

`count_hi('abc hi ho')` → 1

`count_hi('ABChi hi')` → 2

`count_hi('hihi')` → 2

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## Now let's think as a programmer!

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1. What exactly does my function return ? And so which variables do I need (and what type are they)?

Answer: You will need a "counter" variable which is an integer, it will start at zero

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# Our Solution so far

```
def count_hi(inputString):  
    counter = 0  
    ...  
    ...  
    ...  
    return counter
```

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## Now let's think as a programmer!

2. Is there an if-statement needed or multiple ifs (is there a branch needed in my code)? What would be the condition?

Answer: We probably need to check if the substring 'hi' appears within the string, IF this is the case then we add one to our counter. So yes we will need an if-statement!

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**Now let's think as a programmer!**

2. Is there an if-statement needed or multiple ifs (is there a branch needed in my code)? What would be the condition?

Answer: The if statement will check if a letter is equal to 'h' and if the next letter is equal to 'i'

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## Our Solution so far

```
def count_hi(inputString):  
    counter = 0  
  
    if inputString [ ? ] == 'h' and inputString [ ? + 1 ] == 'i':  
        counter += 1  
  
    return counter
```

Note: another way to write the if-statement's condition is with the slice operator to get a substring:

```
if inputString[ i : i + 2 ] == 'hi':
```

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## Now let's think as a programmer!

3. Do I need a for-loop to traverse a word or list? If so, what would be the range?

Answer: We want to access all the letters of the `inputString`, so yes we need a for loop. The range can be equal to the length of the word - 1. We look one letter ahead of our current evaluated letter, so we do not need to go all the way to the end.

We don't have to check if the last letter is equal to 'h' because it can never spell the word 'hi', since it is already the last letter.

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# Our Solution

```
def count_hi(inputString):  
    counter = 0  
    for i in range(0, len(inputString) - 1):  
        if inputString [ i ] == 'h' and  
            inputString [i +1] == 'i':  
            counter += 1  
    return counter
```

# Wat komt er op de toets?

- Onderwerpen zijn:
- Datatypes (Booleans, strings,int, float)
- Loops (for-loop, while-loop)
- Modulo (%-operator)
- Functies (def Sum(a,b): return a+b)
- If-Statements (if True: x+=1 else: x+=2)
- Let op: Wanneer er op een toets gevraagd wordt naar een functie, schrijf je alleen de functie op, je hoeft dus niks te printen in de functie, tenzij hier expliciet naar wordt gevraagd!



# Learn to Code!

- <https://www.sololearn.com/Courses/>

# Seventh lab is online

[https://github.com/vmuijrrers/ECTP/blob/master/Labs/Lab\\_7.md](https://github.com/vmuijrrers/ECTP/blob/master/Labs/Lab_7.md)

#For examples/tutorials and references!  
py.processing.org

#For more practise with python!  
codecademy.com

#Now let's practise some more with codingbat:  
<http://codingbat.com/python>

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