



Programming for Social Scientists

Johan A. Dornschneider-Elkink

Strings



```
party = "Fianna Fáil"
```

```
abbreviation = 'FF'
```

```
intro = '''
```

```
Fianna Fáil was founded in 1926 by members of Sinn Féin, under  
the leadership of Éamon de Valera. Since then, it has been one  
of the leading political parties in the Republic of Ireland,  
seeing its first serious vote collapse only 85 years later, in  
the 2011 elections to Dáil Éireann.
```

```
'''
```

Creating strings

WORKERS!



FIANNA FÁIL
gave you
THE CONDITIONS OF EMPLOYMENT
ACT • HOLIDAYS WITH PAY
WORK ON THE BOGS, ROADS & LAND
UNEMPLOYMENT ASSISTANCE
HOUSING, HOSPITALS, ETC.
There will be more
INDUSTRIES—SCHOOLS—HOUSES

Vote FIANNA FÁIL IS ON
YOUR SIDE—ALWAYS WAS
AND ALWAYS WILL BE

FIANNA FAIL

```
def say_hello():  
    """  
    This function prints a friendly greeting to the screen.  
    """  
  
    print("Hello!")
```

```
intro = '''  
Fianna Fáil was founded in 1926 by members of Sinn Féin, under  
the leadership of Éamon de Valera. Since then, it has been one  
of the leading political parties in the Republic of Ireland,  
seeing its first serious vote collapse only 85 years later, in  
the 2011 elections to Dáil Éireann.  
'''
```

Creating strings

String indexing

```
party = "Fine Gael"
```

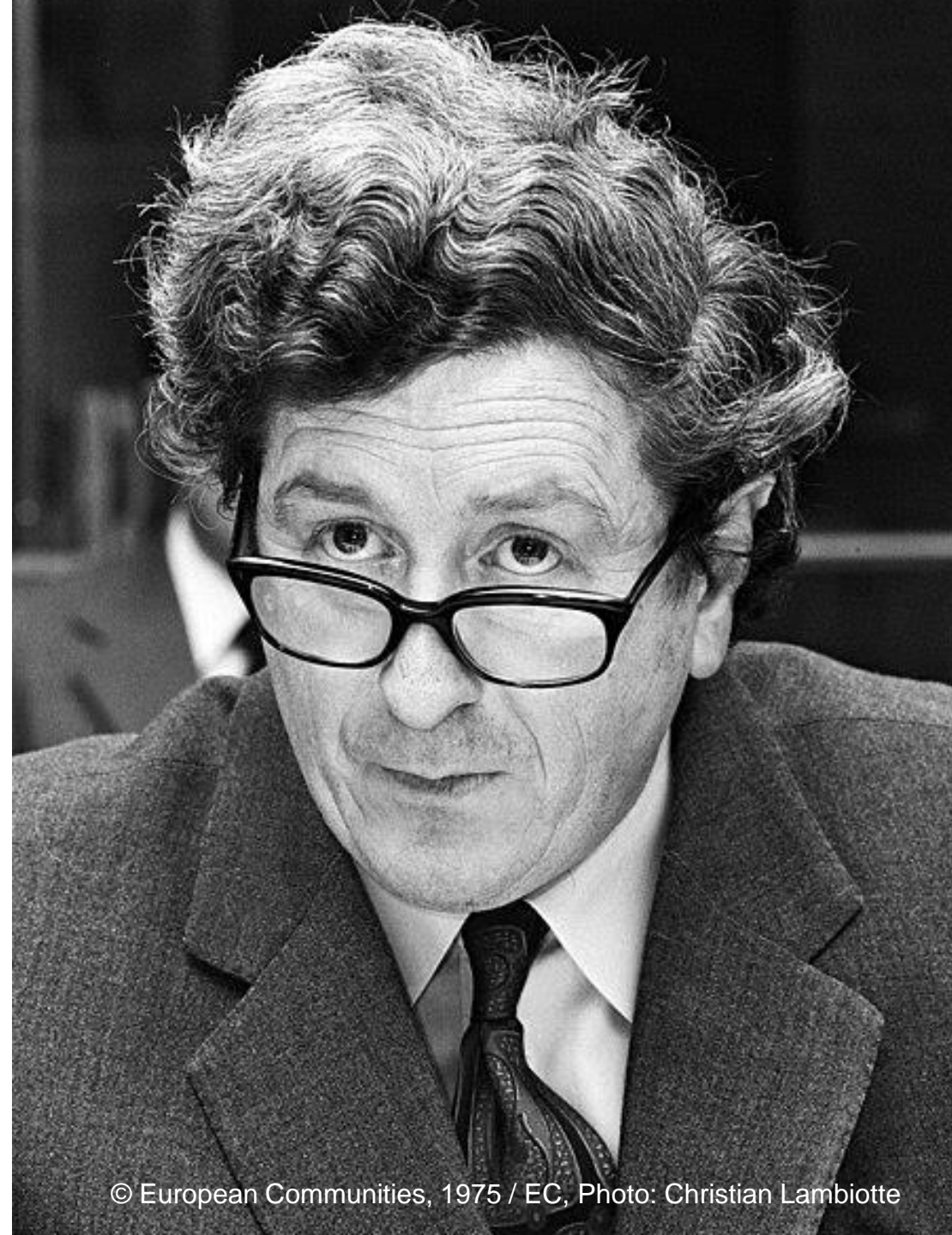
```
first_character = party[0]
```

```
last_character = party[-1]
```

```
fine = party[:4]
```

```
gael = party[5:]
```

```
space = party[4:5]
```



Some typical string functions

```
party = "Sinn Féin"
```

```
title = '''
```

```
Mary Lou McDonald says Sinn Féin will re-run  
referendums on family and care if they do not pass  
'''
```

```
quote = '''
```

```
We would return to the Citizens' Assembly wording,  
that's what should be happening now and if this is  
not successful, that's where we will bring that.  
'''
```

```
source = "Irish Independent, 20 Feb 2024"
```



Some typical string functions

```
party = "Sinn Féin"

title = '''
Mary Lou McDonald says Sinn Féin will re-run
referendums on family and care if they do not pass
'''

quote = '''
We would return to the Citizens' Assembly wording,
that's what should be happening now and if this is
not successful, that's where we will bring that.
'''

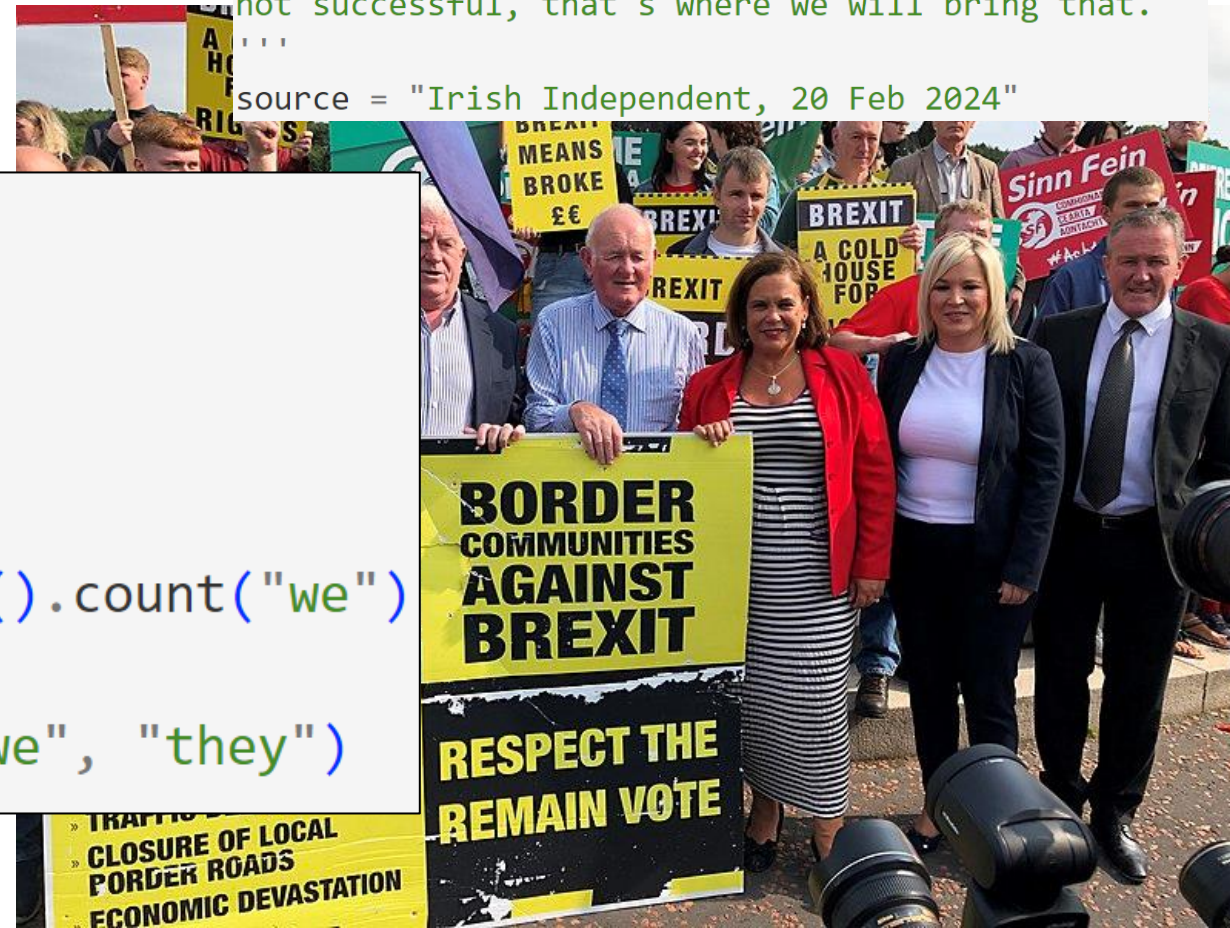
source = "Irish Independent, 20 Feb 2024"
```

```
number_of_characters = len(quote)

quote_lowercase = quote.lower()
quote_uppercase = quote.upper()

count_references_to_we = quote.lower().count("we")

replace_we = quote.lower().replace("we", "they")
```



Some typical string functions

```
party = "Sinn Féin"
```

```
title = ''
```

```
Mary Lou McDonald says Sinn Féin will re-run  
referendums on family and care if they do not pass  
'''
```

```
def remove_punctuation(s):
```

```
    """
```

```
    Returns string s with all punctuation removed.
```

```
    """
```

```
list_of_words = remove_punctuation(quote)
```

```
assembly wording,  
w and if this is  
ll bring that.
```

```
o 2024"
```



Some typical string functions

```
import string
```

```
def remove_punctuation(s):
```

```
    """
```

```
    Returns string s with all punctuation removed.
```

```
    """
```

```
    translator = str.maketrans("", "", string.punctuation)
```

```
    return s.translate(translator)
```

```
list_of_words = remove_punctuation(quote)
```

```
party = "Sinn Féin"
```

```
title = '''
```

```
Mary Lou McDonald says Sinn Féin will re-run  
referendums on family and care if they do not pass  
'''
```

```
assembly wording,  
w and if this is  
ll bring that.
```

```
o 2024"
```



Some typical string functions

```
party = "Sinn Féin"
```

```
title = ''
```

```
Mary Lou McDonald says Sinn Féin will re-run  
referendums on family and care if they do not pass  
'''
```

```
import string
```

```
def remove_punctuation(s):
```

```
    """
```

```
    Returns string s with all punctuation removed.
```

```
    """
```

```
    translator = str.maketrans("", "", string.punctuation)
```

```
    return s.translate(translator)
```

```
list_of_words = remove_punctuation(quote).lower().replace("\n", "").split(" ")
```

```
list_of_words.sort()
```

```
print(", ".join(list_of_words))
```

```
assembly wording,  
w and if this is  
ll bring that.
```

```
> 2024"
```



Some typical string functions

```
party = "Sinn Féin"
```

```
title = ''
```

```
Mary Lou McDonald says Sinn Féin will re-run  
referendums on family and care if they do not pass  
''
```

```
import string
```

```
def remove_punctuation(s):
```

```
    """
```

```
    Returns string s with all punctuation removed.
```

```
    """
```

```
    translator = str.maketrans("", "", string.punctuation)
```

```
    return s.translate(translator)
```

```
list_of_words = remove_punctuation(quote).lower().replace("\n", "").split(" ")
```

```
list_of_words.sort()
```

```
print(", ".join(list_of_words))
```

and, assembly, be, bring, citizens, happening, if, is, not,
now, return, should, successful, that, thats, thats, the,
this, to, we, we, what, where, will, wording, would

o 2024"



Adding numbers to strings

```
party = "Green Party"  
founded = 1981  
age = 2023 - 1981  
percent_1st_pref = 7.1
```

The Green Party, founded in 1981, is now 42 years old. In the most recent elections, it won 7.1 % of the first preference votes.

ECOLOGY PARTY OF IRELAND

Th. 3rd DECEMBER:

**Inaugural Gathering
- presenting a radical
alternative to both
Capitalism and Socialism**

For those who favour a storehouse economy,
non-exploitive approach to nature, land reform,
human scale institutions, alternative technology,
a basic unearned income for all, and the
de-centralisation of political power.

CENTRAL HOTEL at 8p.m.

Epicentre

Contact address: E.P.I., Washington Lodge
Grange Road
Rathfarnham Dublin 14

Adding numbers to strings (method 1)

```
print("The %s, founded in %d, is now %d years  
old. In the most recent elections, it won %.1f  
%% of the first preference votes." % (party,  
founded, age, percent_1st_pref))
```

```
party = "Green Party"  
founded = 1981  
age = 2023 - 1981  
percent_1st_pref = 7.1
```

The Green Party, founded in 1981, is now 42 years old. In the most recent elections, it won 7.1 % of the first preference votes.



Adding numbers to strings (method 1)



```
print("The %s, founded in %d, is now %d years  
old. In the most recent elections, it won %.1f  
%% of the first preference votes." % (party,  
founded, age, percent_1st_pref))
```

%d Integer
%f Floating point
%s String
%x Hexadecimal
%% Percentage sign

%3d Integer, using 3 digits
%03d Integer, using 3 digits, padding with zeros
%5f Floating point, using 5 digits
%5.2f Floating point, using 5 digits, and rounding
to 2 digits after decimal point
%10s String, 10 characters long

```
party = "Green Party"  
founded = 1981  
age = 2023 - 1981  
percent_1st_pref = 7.1
```

The Green Party, founded in 1981, is now 42 years old. In the most recent elections, it won 7.1 % of the first preference votes.

Adding numbers to strings (method 2)

```
print(f"The {party}, founded in {founded}, is  
now {age} years old. In the most recent  
elections, it won {percent_1st_pref} % of the  
first preference votes.")
```

Note the little f in front ...

```
party = "Green Party"  
founded = 1981  
age = 2023 - 1981  
percent_1st_pref = 7.1
```

The Green Party, founded in 1981, is now 42 years old. In the most recent elections, it won 7.1 % of the first preference votes.



Adding numbers to strings (method 3)

```
print("The {}, founded in {}, is now {} years  
old. In the most recent elections, it won {} %  
of the first preference votes.".format(party,  
founded, age, percent_1st_pref))
```



Detailed formatting is possible:

```
print("The {:s}, founded in {:d}, is now {:d}  
years old. In the most recent elections, it won  
{:.1f} % of the first preference votes.".format  
(party, founded, age, percent_1st_pref))
```

```
party = "Green Party"  
founded = 1981  
age = 2023 - 1981  
percent_1st_pref = 7.1
```

The Green Party, founded in 1981, is now 42 years old. In the most recent elections, it won 7.1 % of the first preference votes.

Input from the user

```
name = input("Please enter your name: ")  
age = int(input("Please enter your age: "))
```


Input from the user

```
name = input("Please enter your name: ")  
age = int(input("Please enter your age: "))
```



```
import random
```

```
guess = int(input("Enter your guess: "))  
selection = ""
```

```
while selection != "q":
```

```
    print('''  
    Main menu
```

```
    (E)nter new guess  
    (T)hrow dice  
    (Q)uit program
```

```
    ''')
```

```
    selection = input("Enter your menu choice: ")
```

```
    if selection == "t":
```

```
        | print(random.randint(1,6) == guess)
```

```
    elif selection == "e":
```

```
        | guess = int(input("Enter your guess: "))
```