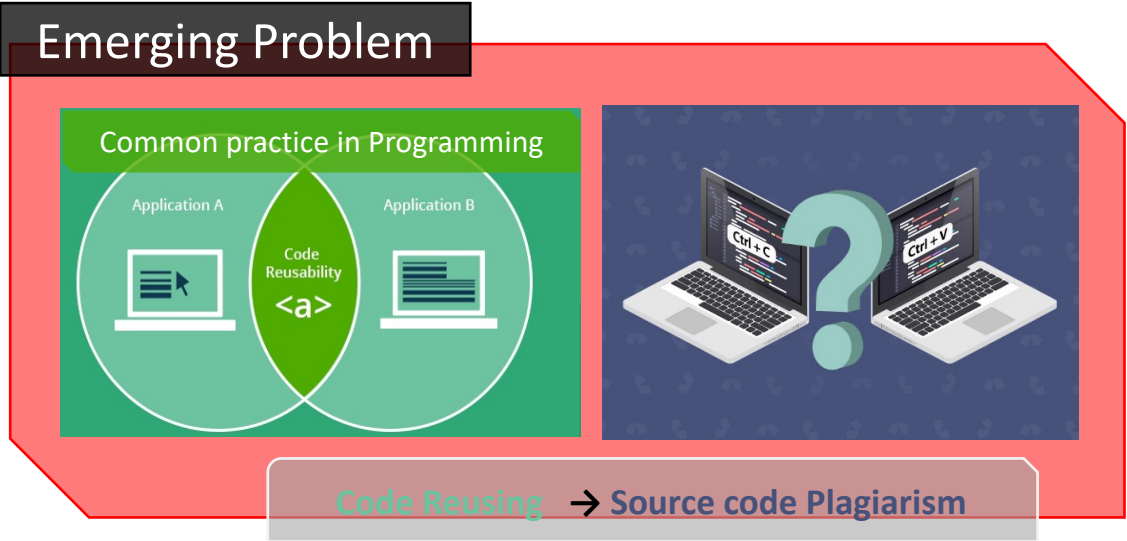



# Corona:Code Autonomous Reference Assistance



  
Detecting the plagiarism

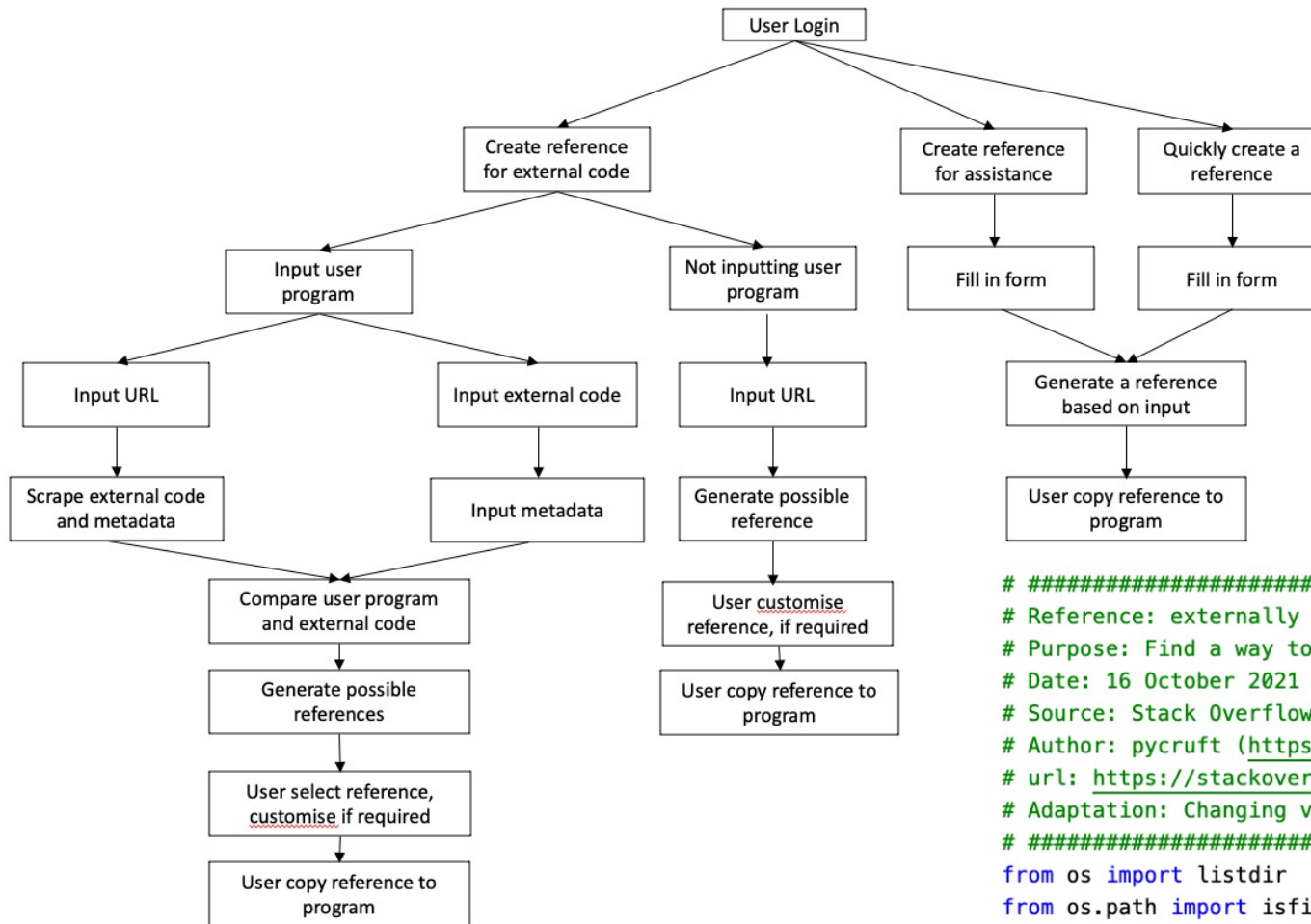
  
Preventing the plagiarism

Teaching students the importance and the correct practice of creating references when using code from external sources



Referencing standards are needed

# Corona:Code Autonomous Reference Assistance



Simon et al. (2018)'s standard

```
# #####
# Reference: externally sourced code
# Purpose: Find a way to list all filename in a given folder path and combine it with its extension
# Date: 16 October 2021
# Source: Stack Overflow
# Author: pycruft (https://stackoverflow.com/users/346573/pycruft)
# url: https://stackoverflow.com/questions/3207219/how-do-i-list-all-files-of-a-directory
# Adaptation: Changing variable name and adding variable for pathname
# #####
from os import listdir
from os.path import isfile, join
mypath = "documents/assignments"
onlyfiles = [f for f in listdir(mypath) if isfile(join(mypath, f))]
# #####
# End reference
# #####
```

# Corona:Code Autonomous Reference Assistance

Website name		Website name	
pypi.org	✓	cplusplus.com	✓
w3schools.com	✓	learncpp.com	✓
docs.python.org	✓	beginnersbook.com	✓
learnpython.org	✓	javascript.info	✓
tutorialspoint.com	✓	developer.mozilla.org	✓
programiz.com	✓	javascripttutorial.net	✓
guru99.com	✓	datacamp.com	
docs.oracle.com	✓	kaggle.com	
javatpoint.com		flask.palletsproject.com	✓
codecademy.com	✓	realpython.com	✓
docs.microsoft.com	✓	fullstackpython.com	✓
csharp.net-tutorials.com		laravel.com	✓

Level	LCS	String alignment	RKRGST	Surface token	Syntactic token	Pseudo-semantic token
L1	16%	5%	3%	8%	13%	12%
L2	6%	3%	0%	9%	15%	14%
L3	8%	0%	0%	12%	21%	13%
L4	0%	0%	0%	3%	3%	2%
L5	0%	0%	0%	2%	0%	0%
L6	5%	1%	1%	6%	9%	7%
Overall	5%	1%	1%	6%	9%	7%

Scenario	Required	Don't know	Not required
C1	<b>91%</b>	9%	4%
C2	<b>55%</b>	18%	27%
C3	<b>63%</b>	5%	32%
C4	<b>23%</b>	18%	59%
C5	<b>54%</b>	41%	5%
C6	64%	4%	<b>32%</b>
C7	68%	9%	<b>23%</b>
C8	<b>68%</b>	9%	23%
C9	<b>27%</b>	23%	50%
C10	45%	14%	<b>41%</b>

Scenario	Required	Don't know	Not required
C1	<b>96%</b>	0%	4%
C2	<b>50%</b>	25%	25%
C3	<b>37%</b>	21%	42%
C4	<b>25%</b>	25%	50%
C5	<b>63%</b>	17%	21%
C6	79%	0%	<b>21%</b>
C7	71%	8%	<b>21%</b>
C8	<b>71%</b>	4%	25%
C9	<b>50%</b>	17%	33%
C10	46%	12%	<b>42%</b>

## Conclusions:

- We present an approach to raise students' awareness of accidental code plagiarism through code referencing with the help of the system we developed: Corona
- Corona has successfully generated comments for several sources such as: webpages, offline code and assistances.
- Our intervention has affected students' knowledge of correct code reusing practice to some extent.
- We believe that our intervention can be further improved by designing a course or assignment that encourage students in code reusing and further elevate students' participation in code reusing