The Google Foobar Challenge — What Is It, And How To Get Selected

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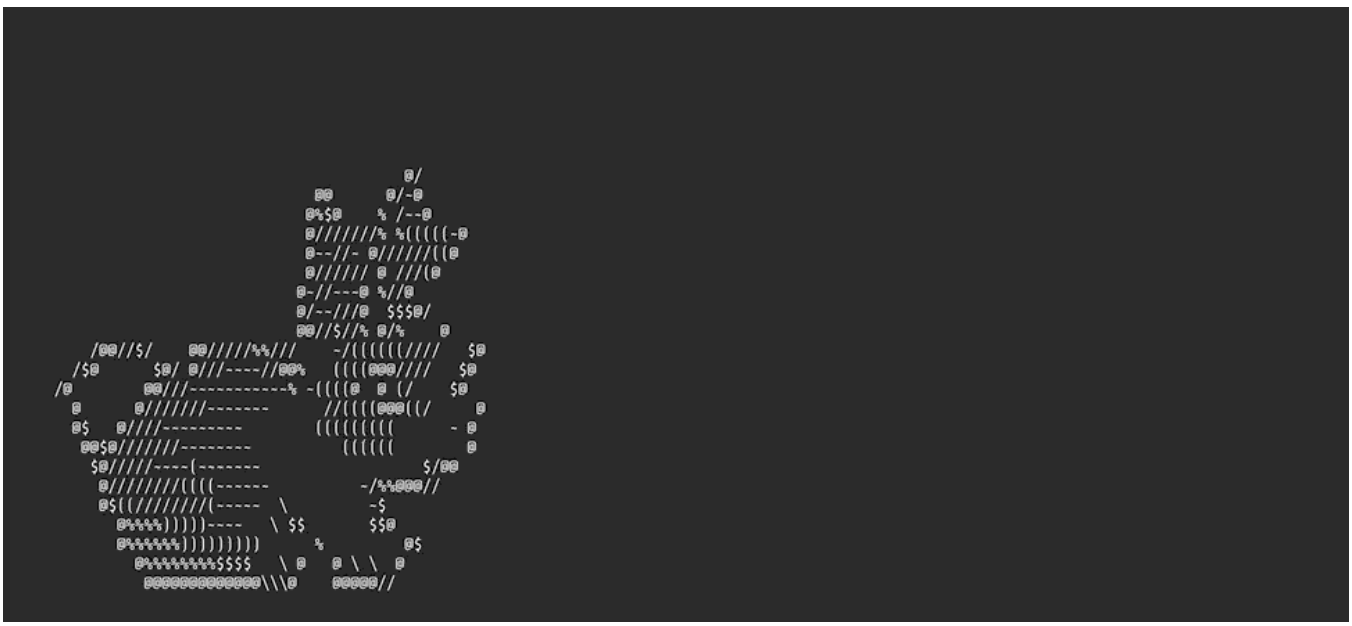


The Google Foobar developer challenge is one of Google's hiring processes for hiring developers which they think can be a good match for their organization.

Many developers in Google have been hired through this hiring challenge.

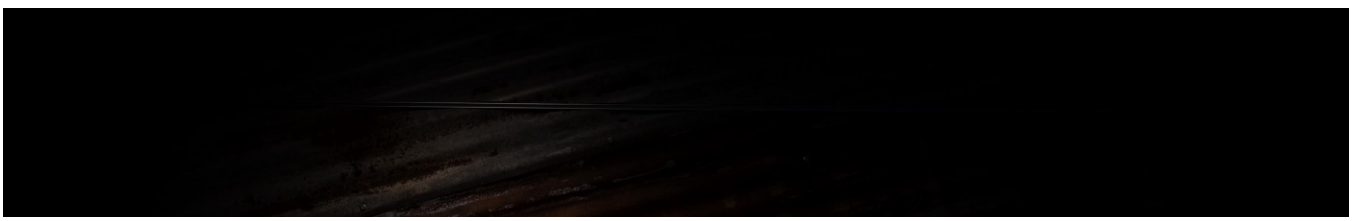


Photo by Mitchell Luo on Unsplash

How to get selected?

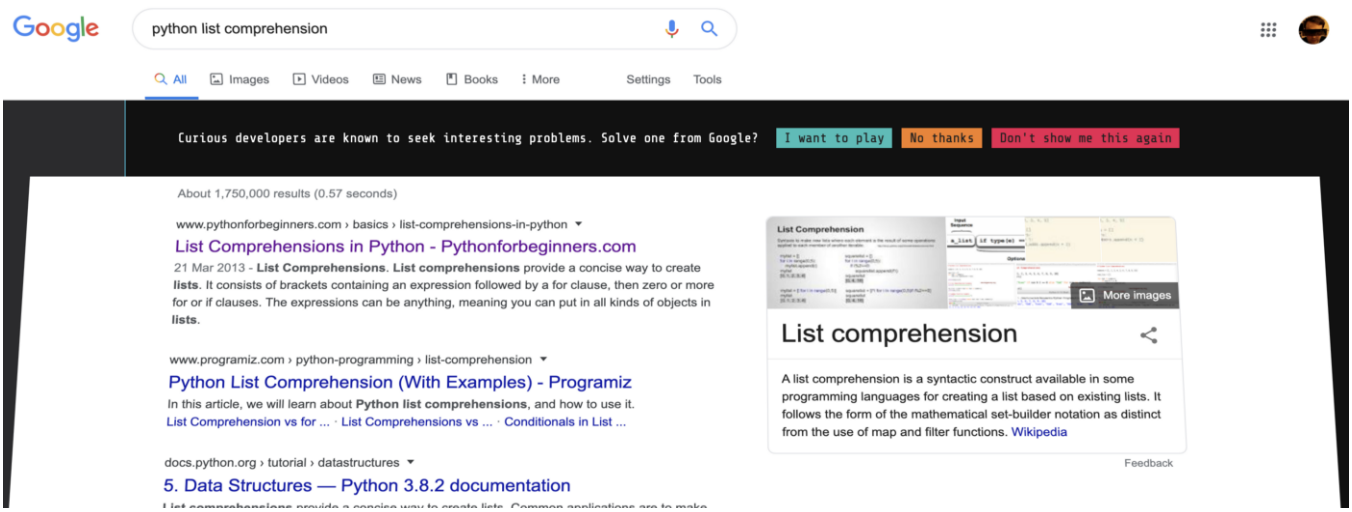
Apparently, Google only sends the Foobar challenge to special types of developers. I have no idea why I was selected, so I can't really give any hints or tips.

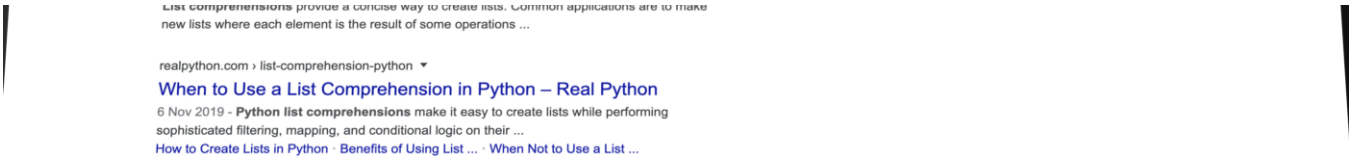
From what I have read, no one exactly knows the criteria for the Google Foobar invitation eligibility, although it is likely that Google send the invitation on the basis of your search history and your problem solving related keyword searches

I guess if you are a developer, it is obvious that you search a lot of problems related to programming on Google or Stack Overflow.

What happens when you are selected?

So I was browsing google, just doing some weekend learning, when this really obscure banner popped up at the top of my search!





Obviously I clicked it, and started on the Google Foobar Developer challenge.

It was quite good timing, since I've recently been learning python (and list comprehension as you can see what I was googling at the time, which came in handy as the challenge involved just that!)

I started navigating around the Foobar challenge, and seeing what it was all about.

```
Mounting /home/craigpayne1985...

Welcome to foobar version 1-293-g571b8be-beta

Success! You've managed to infiltrate Commander Lambda's evil
organization, and finally earned yourself an entry-level position as
a Minion on her space station. From here, you just might be able to
subvert her plans to use the LAMBCHOP doomsday device to destroy
Bunny Planet. Problem is, Minions are the lowest of the low in the
Lambda hierarchy. Better buck up and get working, or you'll never
make it to the top...

foobar:~/ craigpayne1985$ ls

journal.txt
start_here.txt

foobar:~/ craigpayne1985$ cat journal.txt

Success! You've managed to infiltrate Commander Lambda's evil
organization, and finally earned yourself an entry-level position as
a Minion on her space station. From here, you just might be able to
subvert her plans to use the LAMBCHOP doomsday device to destroy
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```
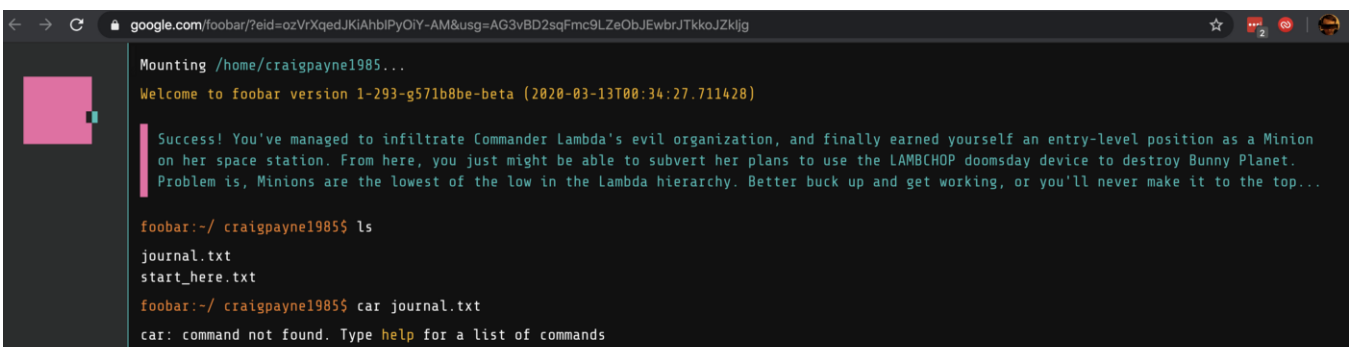
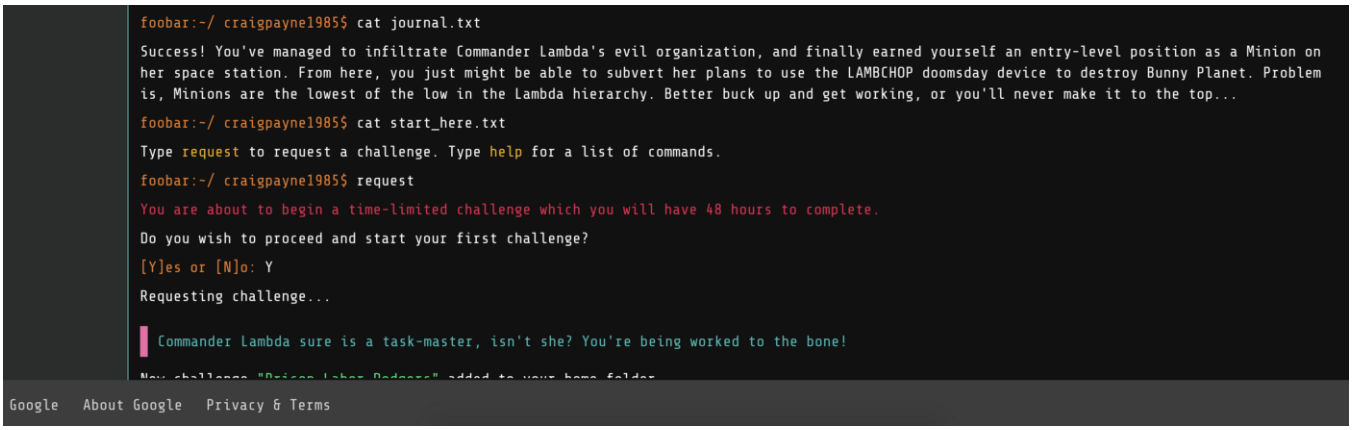





Interesting, it was like an interactive shell, just a very limited one. There were a few files, which I thought I should read to see what was going on

```
foobar:~/ craigpayne1985$ cat start_here.txt

Type request to request a challenge. Type help for a list of
commands.

foobar:~/ craigpayne1985$ request

You are about to begin a time-limited challenge which you will have
48 hours to complete.

Do you wish to proceed and start your first challenge?

[Y]es or [N]o: Y

Requesting challenge...

Commander Lambda sure is a task-master, isn't she? You're being
worked to the bone!
```

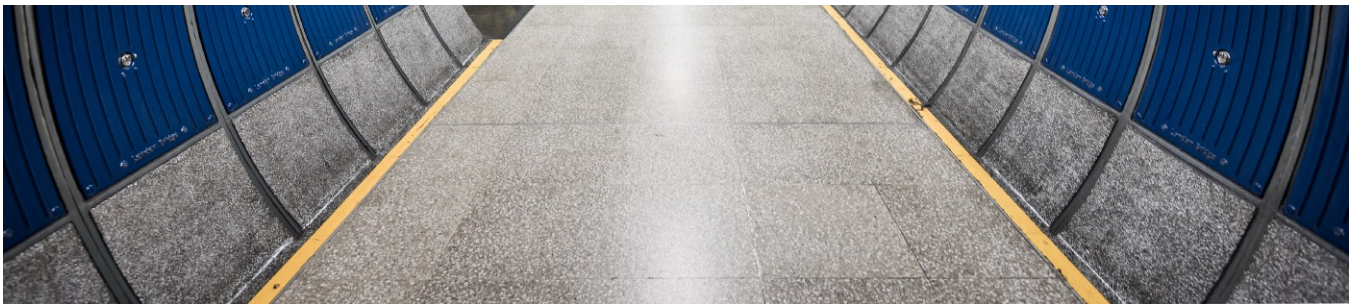


Photo by Stefan Kunze on Unsplash

So I was about to start a developer challenge, with 48 hours to complete, nice!

```
New challenge "Prison Labor Dodgers" added to your home folder.
Time to solve: 48 hours.

foobar:~/ craigpayne1985$ ls

prison-labor-dodgers
journal.txt
start_here.txt

foobar:~/ craigpayne1985$ cd prison-labor-dodgers/

foobar:~/prison-labor-dodgers craigpayne1985$ ls

Solution.java
constraints.txt
readme.txt
solution.py

foobar:~/prison-labor-dodgers craigpayne1985$ cat constraints.txt

Java
====
Your code will be compiled using standard Java 8. All tests will be
run by calling the solution() method inside the Solution class

Execution time is limited.

Wildcard imports and some specific classes are restricted (e.g.
java.lang.ClassLoader). You will receive an error when you verify
your solution if you have used a blacklisted class.

Third-party libraries, input/output operations, spawning threads or
processes and changes to the execution environment are not allowed.

Your solution must be under 32000 characters in length including new
lines and and other non-printing characters.

Python
======
Your code will run inside a Python 2.7.13 sandbox. All tests will be
run by calling the solution() function.
```

```
Standard libraries are supported except for bz2, crypt, fcntl, mmap,
pwd, pyexpat, select, signal, termios, thread, time, unicodedata,
zipimport, zlib.

Input/output operations are not allowed.

Your solution must be under 32000 characters in length including new
lines and and other non-printing characters.
```

Photo by Andrew Neel on Unsplash

```
foobar:~/prison-labor-dodgers craigpayne1985$ cat readme.txt

Prison Labor Dodgers
====================

Commander Lambda is all about efficiency, including using her bunny
prisoners for manual labor. But no one's been properly monitoring
the labor shifts for a while, and they've gotten quite mixed up.
You've been given the task of fixing them, but after you wrote up
new shifts, you realized that some prisoners had been transferred to
a different block and aren't available for their assigned shifts.
And manually sorting through each shift list to compare against
prisoner block lists will take forever - remember, Commander Lambda
loves efficiency!
```

```
Given two almost identical lists of prisoner IDs x and y where one
of the lists contains an additional ID, write a function solution(x,
y) that compares the lists and returns the additional ID.

For example, given the lists x = [13, 5, 6, 2, 5] and y = [5, 2, 5,
13], the function solution(x, y) would return 6 because the list x
contains the integer 6 and the list y doesn't. Given the lists x =
[14, 27, 1, 4, 2, 50, 3, 1] and y = [2, 4, -4, 3, 1, 1, 14, 27, 50],
the function solution(x, y) would return -4 because the list y
contains the integer -4 and the list x doesn't.

In each test case, the lists x and y will always contain n non-
unique integers where n is at least 1 but never more than 99, and
one of the lists will contain an additional unique integer which
should be returned by the function.  The same n non-unique integers
will be present on both lists, but they might appear in a different
order, like in the examples above. Commander Lambda likes to keep
her numbers short, so every prisoner ID will be between -1000 and
1000.

Languages
=========

To provide a Python solution, edit solution.py
To provide a Java solution, edit Solution.java

Test cases
==========
Your code should pass the following test cases.
Note that it may also be run against hidden test cases not shown
here.

-- Python cases --
Input:
solution.solution([13, 5, 6, 2, 5], [5, 2, 5, 13])
Output:
    6

Input:
solution.solution([14, 27, 1, 4, 2, 50, 3, 1], [2, 4, -4, 3, 1, 1,
14, 27, 50])
Output:
    -4

-- Java cases --
Input:
Solution.solution({13, 5, 6, 2, 5}, {5, 2, 5, 13})
Output:
    6

Input:
Solution.solution({14, 27, 1, 4, 2, 50, 3, 1}, {2, 4, -4, 3, 1, 1,
14, 27, 50})
Output:
    -4

Use verify [file] to test your solution and see how it does. When
you are finished editing your code, use submit [file] to submit your
```

```
answer. If your solution passes the test cases, it will be removed
from your home folder.
```

Photo by NeONBRAND on Unsplash

So I thought, this can't be too hard, and gave it a shot. It was harder than I expected, probably straightforward for someone well versed in Python, but for me with a couple of weeks experience, it proved to be more complex, but at least it gave me an opportunity to test out list comprehension.

After many failed attempts in the Foobar console, (before actually trying it out in Jupyter) I managed to pass the first test!

```
foobar:~/prison-labor-dodgers craigpayne1985$ verify solution.py

Verifying solution...

Test 1 failed
Test 2 failed
Test 3 failed  [Hidden]
Test 4 failed  [Hidden]
Test 5 failed  [Hidden]

Verifying solution...
```

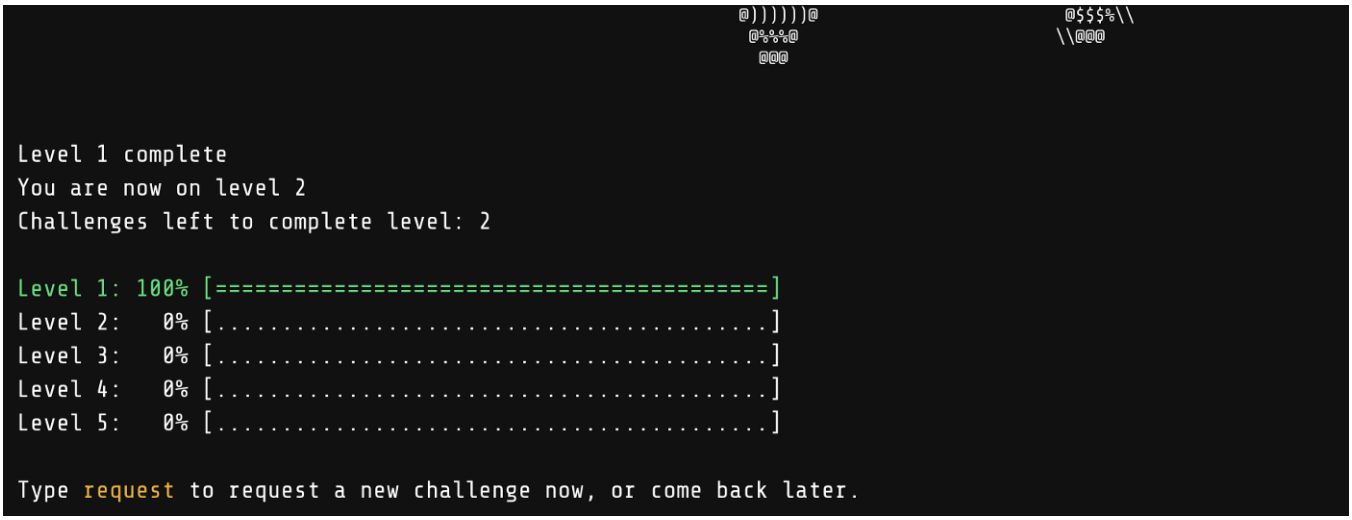
```
All test cases passed. Use submit solution.py to submit your
solution

foobar:~/prison-labor-dodgers craigpayne1985$ submit solution.py

Are you sure you want to submit your solution?

[Y]es or [N]o: Y

Submitting solution...
```

The code I wrote was as follows:

```
def solution(x,y):
  matrix = [x,y]
  all_values = [y for x in matrix for y in x]
  unique_values = list(set(all_values))
  matched_values = [x for x in unique_values if all_values.count(x)
% 2 == 0]
  missing_values = [x for x in unique_values if x not in
matched_values ]
  return missing_values[0]
```

And I got a cool ascii bunny bouncing around!!

```
You survived a week in Commander Lambda's organization, and you even
managed to get yourself promoted. Hooray! Henchmen still don't have
the kind of security access you'll need to take down Commander
Lambda, though, so you'd better keep working. Chop chop!
Submission: SUCCESSFUL. Completed in: 2 hrs, 1 min, 56 secs.
```



Developer Google Programming Challenge