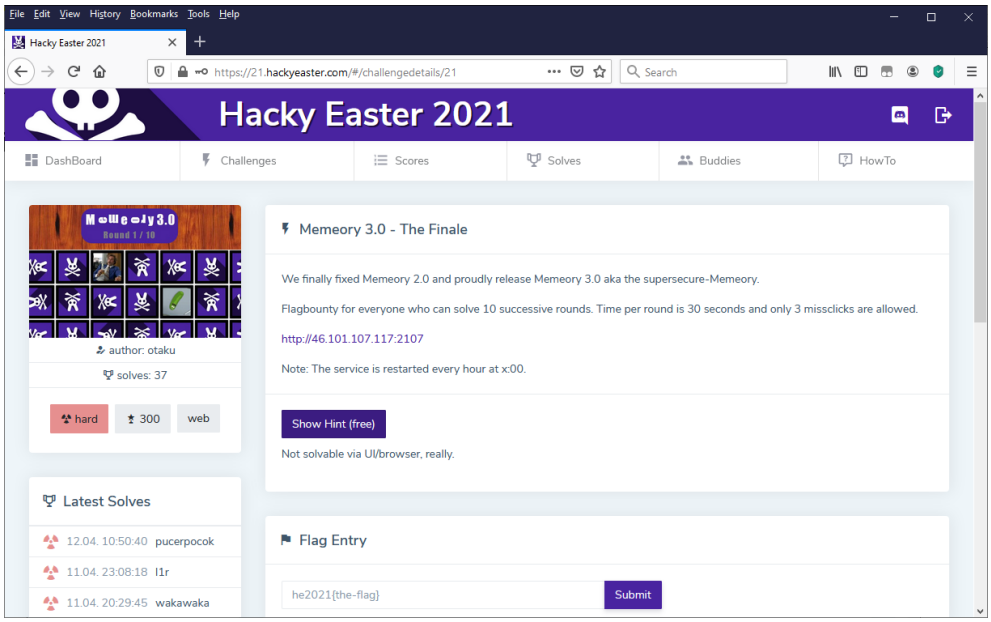
Hacky Easter 2021

Memeory 3.0 - The Finale

1. Click the **Memeory 3.0** image:



2. Open a Windows Command Prompt.

3. Execute the following command, from the Windows Command Prompt, to download the contents of the **http://46.101.107.117:2107** web site:

   wget -q -r http://46.101.107.117:2107

4. Execute the following command, from the Windows Command Prompt, to move the contents of the pics directory to the current directory:

   move "46.101.107.117+2107\pic" pics

   ```
   1 dir(s) moved.
   ```

5. Execute the following command, from the Windows Command Prompt, to add **-1.jpg** to the name of each file:

   ren pics* *-1.jpg

6. Create a Python script, play_round.py, to play the game 12 times:

   ```
   #!/usr/bin/python
   import os

   for i in range(1, 12):
       os.system('wget -q -r http://46.101.107.117:2107')
       os.system('copy "46.101.107.117+2107\pic" pics')
       os.system('ren pics\*. *-' + str(i) + '.jpg')
   ```

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7. Execute the following command, from the Windows Command Prompt, to execute the play_round.py Python script:

   python play_round.py

8. Execute the following command, from the Windows Command Prompt, to start a Python prompt

9. Type the following at the prompt:

   ```
   import os

   for i in range(1, 50):
       os.system('mkdir pics\\' + str(i))
   ```

10. Type **exit()** to close the Python prompt.

11. Group the image files into the pics subdirectories.

12. Execute the following commands, from the Windows Command Prompt, to calculate the MD5 hash sums of the files, in 1 subdirectory:

    md5sum pics\1* | sort

    ```
    \35667efb3a6a78f62debfdc5a220e0e7 *pics\\1\\71-4.jpg
    \75131e254016840e386e6d3261b1cb22 *pics\\1\\62-10.jpg
    \75131e254016840e386e6d3261b1cb22 *pics\\1\\70-6.jpg
    \75131e254016840e386e6d3261b1cb22 *pics\\1\\79-8.jpg
    \902213ea39f4473b5d130294b8bec6c5 *pics\\1\\50-7.jpg
    \c1497c332a528d9a1576c7813f2157e8 *pics\\1\\72-10.jpg
    \c275017193f9ed7d711f652f426e44b6 *pics\\1\\50-3.jpg
    \c275017193f9ed7d711f652f426e44b6 *pics\\1\\77-1.jpg
    \c275017193f9ed7d711f652f426e44b6 *pics\\1\\96-8.jpg
    \cf73e8b4f213bebf1ac0f4285fec0054 *pics\\1\\54-5.jpg
    \cf73e8b4f213bebf1ac0f4285fec0054 *pics\\1\\57-7.jpg
    \d87f453db5f986fbab736686a87ef8f3 *pics\\1\\72-11.jpg
    \d87f453db5f986fbab736686a87ef8f3 *pics\\1\\94-11.jpg
    \d87f453db5f986fbab736686a87ef8f3 *pics\\1\\95-6.jpg
    ```

13. Execute the following commands, from the Windows Command Prompt, to delete the files with duplicate MD5 hash values:

    del pics\1\62-10.jpg
    del pics\1\79-8.jpg
    del pics\1\50-3.jpg
    del pics\1\96-8.jpg
    del pics\1\57-7.jpg
    del pics\1\72-11.jpg
    del pics\1\94-11.jpg

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14. Repeat steps 12 and 13 for the other **48** directories.

15. Create a Python script, Create-pair_table.py, to create a md5-pairs.txt file:

```
import os, subprocess

f1 = open("md5-pairs.txt", 'w')

dirs = os.listdir('pics')

for i in range(len(dirs)):
   result = subprocess.check_output('md5sum pics\\' + dirs[i] + '\\*', shell=False).decode()
   result = result.split('\r\n')

   md5s = []

   for j in range(len(result) - 1):
      md5s.append(result[j][1:33])

   md5s.sort()

   for j in range(len(md5s)):
      f1.write("%s" % md5s[j])

      if j < len(md5s) - 1:
         f1.write(',')

   f1.write('\n')

f1.close()
```

16. Execute the following command, from the Windows Command Prompt, to execute the Create-pair_table.py Python script:

```
python Create-pair_table.py
```

17. Create a Python script, play_rounds.py, to play the rounds and submit the pairs:

```
#!/usr/bin/python3

import hashlib, os, requests

f1 = open("md5-pairs.txt", 'r')
pairvals = f1.readline()

pairtable = []

while pairvals:
   pairtable.append(pairvals.rstrip('\n').split(','))
   pairvals = f1.readline()

f1.close()

s = requests.Session()
rounds = 0
```

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```
while rounds < 10:
    md5s = []
    s.get('http://46.101.107.117:2107/')

    for i in range(98):
        resp = s.get('http://46.101.107.117:2107/pic/' + str(i + 1))
        m = hashlib.md5()
        m.update(resp.content)
        md5s.append([])
        md5s[i].append(m.hexdigest())
        md5s[i].append(i + 1)

    md5s.sort()

    num = 0
    pairs = []

    while len(md5s) > 0:
        curmd5 = md5s[0][0]
        pairs.append([])
        pairs[num].append(md5s[0][1])
        pairs[num].append('')
        md5s.remove(md5s[0])

        found = False
        i = 0

        while i < len(pairtable) and found == False:
            for j in range(len(pairtable[i])):
                if pairtable[i][j] == curmd5:
                    pair_row = i
                    found = True

            if found == False:
                i += 1

        if found == True:
            found = False
            i = 0
            row = pair_row


            while i < len(md5s) and found == False:
                for j in range(len(pairtable[row])):
                    if pairtable[row][j] == md5s[i][0]:
                        pair_row = i
                        found = True

                if found == False:
                    i += 1

            if found == True:
                pairs[num][1] = md5s[pair_row][1]
                md5s.remove(md5s[pair_row])

        num += 1
```

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```
if len(pairs) == 49:
  for i in range(len(pairs)):
    d = 'first=' + str(pairs[i][0]) + '&second=' + str(pairs[i][1])
    header = {"Content-Type": "application/x-www-form-urlencoded"}
    resp = s.post('http://46.101.107.117:2107/solve', data = d, headers=header)

  rounds += 1

  if resp.text == "nextRound":
    print('Round %s' % rounds)

  else:
    print(resp.text)
```

18. Execute the following command, from the Windows Command Prompt, to execute the play_rounds.py Python script:

    python play_rounds.py

```
Round 1
Round 2
Round 3
Round 4
Round 5
Round 6
Round 7
Round 8
Round 9
ok, here is your flag: he2021{0k-1-5u44end3r-y0u-w1n!}
```

19. Close the Windows Command Prompt.

Flag: **he2021{0k-1-5u44end3r-y0u-w1n!}**