Name: Sanada Thomas

Due Date: Due Feb 8, 11:59 PM

Instructions: **Create a password manager using Python**

**import re**

**import hashlib**

**import getpass**

**import pyperclip**

**# config**

**HASH\_SORTS = 2 \*\* 18**

**SALT = 'o60sme9GtQB9fiPVt59DeOrPXPEG41dBMVkTbcg'**

**BITS\_TO\_INT\_LEN = 20**

**PASSWORD\_LEN = 16**

**PASSWORD\_CHARS = [**

**'abcdefghijklmnopqrstuvwxyz',**

**'ABCDEFGHIJKLMNOPQRSTUVWXYZ',**

**'1234567890',**

**'!@#$%^&\*()',**

**]**

**def checkPasswordValid(password):**

**lowercase = bool(re.search('[a-z]', password))**

**uppercase = bool(re.search('[A-Z]', password))**

**number = bool(re.search('[0-9]', password))**

**symbol = bool(re.search('[!@#$%^&\*\(\)]', password))**

**return lowercase and uppercase and number and symbol**

**if \_\_name\_\_ == '\_\_main\_\_':**

**domain = input('Website domain: ')**

**password = getpass.getpass('Master password: ')**

**print('Generating a password...')**

**h = 0**

**s = domain + '/' + password**

**for i in range(HASH\_SORTS):**

**h = hashlib.sha256(s.encode())**

**s = h.digest().hex()**

**s += ''.join(sorted(s))**

**tail = 0**

**p = ''**

**while not checkPasswordValid(p):**

**s2 = s + '/' + str(tail)**

**p = ''**

**for j in range(PASSWORD\_LEN):**

**h = hashlib.sha256((s2 + '/' + str(j)).encode())**

**k = int.from\_bytes(h.digest()[:BITS\_TO\_INT\_LEN], "little")**

**chars = PASSWORD\_CHARS[k % len(PASSWORD\_CHARS)]**

**p += chars[k % len(chars)]**

**tail += 1**

**pyperclip.copy(p)**

**print(f'Password copied to clipboard!')**