

```
1 # DPP Assessed exercises 9
2
3 import re
4 import string
5 import random
6
7
8 # Q1 Suppose I want to generate a password of length n using a random combination
  of all
9 # of the letters (a-z). Write a function that takes n and a seed value s as inputs
  and returns
10 # a string containing the password. Now all you have to remember for your password
  is the
11 # seed value you used to create it.
12 def exercisel(n, s):
13     random.seed(s)
14     return ''.join(random.choice(string.ascii_lowercase) for _ in range(n))
15
16
17 # Suggested tests
18 exercisel(12, 12)
19 # Should return 'lgrcddmqwruf' or 'pivqvlemalpi' (if using the random package
  rather than npr)
20 exercisel(20, 999)
21 # Should return 'afbibtqnviiqfcllvxe' or 'zvcssrppezukuzudugei' (for random
  package)
22
23
```

```
24 # Q2 Suppose I have a list of phone number and I wish to extract the area codes of
    each
25 # number. Write a function that takes a list of phone numbers as input and
    extracts the
26 # area code (assuming that the area code is enclosed in parentheses, e.g. the area
    code
27 # for (08) 03 49 98, would be 08).
28 def exercise2(phones):
29     pattern = re.compile(r'\(\d+\)')
30     return [''.join(pattern.findall(phone)) for phone in phones.split(',')]
31
32
33 # Suggested tests
34 ph_num1 = '(01) 12 05 25, (04) 25 23 11, (08) 03 49 98'
35 exercise2(ph_num1)
36 # Should return ['(01)', '(04)', '(08)']
37 ph_num2 = '(05) 73 43 12, (01) 11 34 67, (07) 91 62 46, (08) 04 23 81'
38 exercise2(ph_num2)
39 # Should return ['(05)', '(01)', '(07)', '(08)']
40
41 # Q3 I have a list of strings consisting of email addresses and I want to find the
    domains
42 # (the part after the @). Write a function that extracts the characters after the
    @ sign
43 # for each email address and returns them as a list.
44 def exercise3(emails):
45     pattern = re.compile(r'@S+')
46     return [''.join(pattern.findall(email)).replace('@', '') for email in emails]
```

```
47
48
49 # Suggested tests
50 exercise3(('myemail@ucd.ie', 'youreemail@gmail.com'))
51 # Should return ['ucd.ie', 'gmail.com']
52 exercise3(('test1@ucd.ie', 'test2@gmail.com', 'test2@hotmail.com'))
53 # Should return ['ucd.ie', 'gmail.com', 'hotmail.com']
54
55 # Q4 I have a list of strings, each of which contains an email address. Write a
    function
56 # that finds and returns all of the email addresses in a given list of strings.
    You may assume
57 # that all email addresses consist of a set of characters (from a-z) and digits (
    from 0-9),
58 # followed by an @ symbol, followed by another set of characters, followed by a
    full stop
59 # and finally a third set of characters (none of the email addresses will have
    special
60 # characters, such as ? and !).
61 def exercise4(liststrings):
62     pattern = re.compile(r'[a-z0-9]+@[a-z0-9]+\.[a-z0-9]+')
63     return [email for email in pattern.findall(''.join(liststrings))]
64
65
66 # Suggested tests
67 junk_mails = ['John Koftaram <test@capahq.org> would like to connect on LinkedIn.
    How would you like to respond?',
68               'Re: Your Abandoned Package For Delivery I have very vital
```

```
68 information to give to you, but first I must have your trust before I review it to
    you because it may cause me my job, so I need somebody that I can trust for me to
    be able to review thesecret to you. Contact me at BENSON OMALU <admin@handwheel.
    com>',
69         'FROM DESKTOP OF MR.Manuel Medina-MoraCHIEF EXECUTIVE OFFICER E-MAIL
    : manuelmedina@aol.com ATTENTION BENEFICIARY']
70 exercise4(junk_mails)
71 # Should return [['test@capahq.org'], ['admin@handwheel.com'], ['manuelmedina@aol.
    com']]
72 contacts = ['Anne Bannon, email: annebannon72@gmail.com',
73             'Conor Darcy, phone: (01) 12 05 25, email: conordarcy@icloud.com',
74             'Eamonn Friel, phone: (01) 12 05 25, email: eamonnfriel88@eircom.net',
75             'Grainne Healy, email: grainnehealy@gmail.com']
76 exercise4(contacts)
77 # Should return [['annebannon72@gmail.com'], ['conordarcy@icloud.com'], ['
    eamonnfriel88@eircom.net'], ['grainnehealy@gmail.com']]
78
```