▼ NLP - EXP - 3

```
Atharva Prashant Pawar (9427) - [Batch - D]
The findall() Function
import re
txt = "The rain in Spain"
x = re.findall("ai", txt)
print(x)
     ['ai', 'ai']
The search() Function
import re
txt = "The rain in Spain"
x = re.search("\s", txt)
print("The first white-space character is located in position:", x.start())
     The first white-space character is located in position: 3
The split() Function
import re
txt = "The rain in Spain"
x = re.split("\s", txt)
print(x)
     ['The', 'rain', 'in', 'Spain']
import re
txt = "The rain in Spain"
x = re.split("\s", txt, 1)
print(x)
     ['The', 'rain in Spain']
Sub() function
import re
txt = "The rain in Spain"
x = re.sub("\s", "9", txt, 2)
print(x)
     The9rain9in Spain
```

Match Object

```
import re
txt = "The rain in Spain"
x = re.search("ai", txt)
print(x) #this will print an object
     <re.Match object; span=(5, 7), match='ai'>
mobRead = open("mob.txt","r")
print(mobRead)
     <_io.TextIOWrapper name='mob.txt' mode='r' encoding='UTF-8'>
filedata = mobRead.read()
filedata
     'From stephen.marquard@uct.ac.za Sat Jan 5 09:14:16 2008 Return-Path: Received: from murder
     (mail.umich.edu\n[141.211.14.90]) by frankenstein.mail.umich.edu (Cyrus v2.3.8) with LMTPA;
     Sat, 05 Jan 2008 09:14:16 -0500 X-Sieve: \nCMU Sieve 2.3 Received: from murder ([unix socke
     t]) by mail.umich.edu (Cyrus v2.2.12) with LMTPA; Sat, 05 Jan 2008\n09:14:16 -0500 Receive
     d: from holes.mr.itd.umich.edu (holes.mr.itd.umich.edu [141.211.14.79]) by flawless.mail.um
     ich.edu\n() with ESMTP id m05EEFR1013674; Sat, 5 Jan 2008 09:14:15 -0500 Received: FROM pap
```

```
x = re.findall("From", filedata)
print(x)

['From', 'From', 'From
```

Q1. Write a python code to search for lines that contain "From"

```
def search lines with keyword(file path, keyword):
                 with open(file_path, 'r') as file:
                          lines = file.readlines()
                          matching_lines = [line.strip() for line in lines if keyword in line]
                         return matching_lines
         except FileNotFoundError:
                 return []
file_path = 'mob.txt'
keyword = 'From
matching_lines = search_lines_with_keyword(file_path, keyword)
if matching_lines:
        print(f"Lines containing '{format(keyword)}' found:")
         for line in matching_lines:
                 print(line)
else:
        print(f"No lines containing '{format(keyword)}' were found.")
           Lines containing 'From' found:
           From stephen.marquard@uct.ac.za Sat Jan 5 09:14:16 2008 Return-Path: Received: from murder (mail.umich.edu
           source@collab.sakaiproject.org From: stephen.marquard@uct.ac.za Subject: [sakai] svn commit: r39772 -
           You can modify how you receive notifications at My Workspace > Preferences. From <a href="mailto:louis@media.berkeley.edu">louis@media.berkeley.edu</a> Fri Jan 4
           <u>source@collab.sakaiproject.org</u> From: <u>louis@media.berkeley.edu</u> Subject: [sakai] svn commit: r39771 - in bspace/sitemanage/sakai_2-4-
           Source site. You can modify how you receive notifications at My Workspace > Preferences. From zqian@umich.edu Fri Jan
           From: <a href="mailto:zqian@umich.edu">zqian@umich.edu</a> Subject: [sakai] svn commit: r39770 - site-manage/branches/sakai_2-5-x/site-managetool/tool/src/webapp/vm/sit
           notifications at My Workspace > Preferences. From <a href="right-quip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-equip-eq
           set sender to <a href="mailto:rjlowe@iupui.edu">rjlowe@iupui.edu</a> using -f To: <a href="mailto:source@collab.sakaiproject.org">source@collab.sakaiproject.org</a> From: <a href="mailto:rjlowe@iupui.edu">rjlowe@iupui.edu</a> Usipect: [sakai] svn
           > Preferences. From zqian@umich.edu Fri Jan 4 15:03:18 2008 Return-Path: Received: from murder (mail.umich.edu
           set sender to zqian@umich.edu using -f To: source@collab.sakaiproject.org From: zqian@umich.edu Subject: [sakai] svn
           Workspace > Preferences. From rjlowe@iupui.edu Fri Jan 4 14:50:18 2008 Return-Path: Received: from murder
           apache set sender to rjlowe@iupui.edu using -f To: source@collab.sakaiproject.org From: rjlowe@iupui.edu Subject: [sakai]
           > Preferences. From <a href="mailto:cwen@iupui.edu">cwen@iupui.edu</a> Fri Jan 4 11:37:30 2008 Return-Path: Received: from murder (mail.umich.edu
           source@collab.sakaiproject.org From: cwen@iupui.edu Subject: [sakai] svn commit: r39764 - in
           You can modify how you receive notifications at My Workspace > Preferences. From <a href="mailto:cwen@iupui.edu">cwen@iupui.edu</a> Fri Jan 4 11:35:08
           apache set sender to <a href="mailto:cwen@iupui.edu">cwen@iupui.edu</a> using -f To: <a href="mailto:source@collab.sakaiproject.org">source@collab.sakaiproject.org</a> From: <a href="mailto:cwen@iupui.edu">cwen@iupui.edu</a> Subject: [sakai]
           > Preferences. From gsilver@umich.edu Fri Jan 4 11:12:37 2008 Return-Path: Received: from murder (mail.umich.edu
           <u>source@collab.sakaiproject.org</u> From: <u>gsilver@umich.edu</u> Subject: [sakai] svn commit: r39762 - web/trunk/webtool/tool/src/bundle X-Co
           can modify how you receive notifications at My Workspace > Preferences. From gsilver@umich.edu Fri Jan 4 11:11:52
           From: gsilver@umich.edu Subject: [sakai] svn commit: r39761 - site/trunk/site-tool/tool/src/bundle X-Content-Type-OuterEnvelope: te
           > Preferences. From zqian@umich.edu Fri Jan 4 11:11:03 2008 Return-Path: Received: from murder (mail.umich.edu
           From: <a href="mailto:zqian@umich.edu">zqian@umich.edu</a> Subject: [sakai] svn commit: r39760 - in site-manage/trunk/site-manage-tool/tool/src:
           My Workspace > Preferences. From gsilver@umich.edu Fri Jan 4 11:10:22 2008 Return-Path: Received: from murder
          apache set sender to gsilver@umich.edu using -f To: <a href="source@collab.sakaiproject.org">source@collab.sakaiproject.org</a> From: <a href="gsilver@umich.edu">gsilver@umich.edu</a> Subject:
           > Preferences. From wagnermr@iupui.edu Fri Jan 4 10:38:42 2008 Return-Path: Received: from murder (mail.umich.edu
           set sender to wagnermr@iupui.edu using -f To: source@collab.sakaiproject.org From: wagnermr@iupui.edu Subject:
          Workspace > Preferences. From <a href="mailto:zgian@umich.edu">zgian@umich.edu</a> Fri Jan 4 10:17:43 2008 Return-Path: Received: from murder
           set sender to <a href="mailto:squame:aqian@umich.edu">zqian@umich.edu</a> using -f To: <a href="mailto:source@collab.sakaiproject.org">source@collab.sakaiproject.org</a> From: <a href="mailto:zqian@umich.edu">zqian@umich.edu</a> using -f To: <a href="mailto:source@collab.sakaiproject.org">source@collab.sakaiproject.org</a> representation of the source of the s
           Workspace > Preferences. From <a href="mailto:anti-cam.ac.uk">antranig@caret.cam.ac.uk</a> Fri Jan 4 10:04:14 2008 Return-Path: Received: from murder
           set sender to antranig@caret.cam.ac.uk using -f To: source@collab.sakaiproject.org From: antranig@caret.cam.ac.uk
           > Preferences. From gopal.ramasammycook@gmail.com Fri Jan 4 09:05:31 2008 Return-Path: Received: from murder
           apache set sender to gopal.ramasammycook@gmail.com using -f To: source@collab.sakaiproject.org From:
          can modify how you receive notifications at My Workspace > Preferences. From <a href="mailto:david.horwitz@uct.ac.za">david.horwitz@uct.ac.za</a> Fri Jan 4
           set sender to david.horwitz@uct.ac.za using -f To: source@collab.sakaiproject.org From: david.horwitz@uct.ac.za Subject:
           > Preferences. From david.horwitz@uct.ac.za Fri Jan 4 06:08:27 2008 Return-Path: Received: from murder
           set sender to <a href="mailto:david.horwitz@uct.ac.za">david.horwitz@uct.ac.za</a> Subject: sender to <a href="mailto:david.horwitz@uct.ac.za">david.horwitz@uct.ac.za</a> Subject:
          Workspace > Preferences. From <a href="mailto:david.horwitz@uct.ac.za">david.horwitz@uct.ac.za</a> Fri Jan 4 04:49:08 2008 Return-Path: Received: from murder
           set sender to <a href="mailto:david.horwitz@uct.ac.za">david.horwitz@uct.ac.za</a> Subject: sender to <a href="mailto:david.horwitz@uct.ac.za">david.horwitz@uct.ac.za</a> Subject:
           receive notifications at My Workspace > Preferences. From david.horwitz@uct.ac.za Fri Jan 4 04:33:44 2008 Return-Path:
           set sender to <a href="mailto:david.horwitz@uct.ac.za">david.horwitz@uct.ac.za</a> using -f To: <a href="mailto:source@collab.sakaiproject.org">source@collab.sakaiproject.org</a> From: <a href="mailto:david.horwitz@uct.ac.za">david.horwitz@uct.ac.za</a> Subject:
           Source site. You can modify how you receive notifications at My Workspace > Preferences. From
           set sender to stephen.marquard@uct.ac.za using -f To: source@collab.sakaiproject.org From:
          notifications at My Workspace > Preferences. From <a href="lowis@media.berkeley.edu">lowis@media.berkeley.edu</a> Thu Jan 3 19:51:21 2008 Return-Path:
           source@collab.sakaiproject.org From: louis@media.berkeley.edu Subject: [sakai] svn commit: r39749 - in bspace/sitemanage/sakai_2-4-
           > Preferences. From <a href="louis@media.berkeley.edu">louis@media.berkeley.edu</a> Thu Jan 3 17:18:23 2008 Return-Path: Received: from murder
           apache set sender to <a href="mailto:louis@media.berkeley.edu">louis@media.berkeley.edu</a> using -f To: <a href="mailto:source@collab.sakaiproject.org">source@collab.sakaiproject.org</a> From:
           > Preferences. From <a href="mailto:ray@media.berkeley.edu">ray@media.berkeley.edu</a> Thu Jan 3 17:07:00 2008 Return-Path: Received: from murder
           apache set sender to <a href="mailto:ray@media.berkeley.edu">ray@media.berkeley.edu</a> using -f To: <a href="mailto:source@collab.sakaiproject.org">source@collab.sakaiproject.org</a> From: <a href="mailto:ray@media.berkeley.edu">ray@media.berkeley.edu</a> using -f To: <a href="mailto:source@collab.sakaiproject.org">ray@media.berkeley.edu</a> using -f To: <a href="mailto:source@collab.sakaiproject.org">source@collab.sakaiproject.org</a> From: <a href="mailto:source@collab.sakaiproject.org">ray@media.berkeley.edu</a> using -f To: <a href="mailto:source@collab.sakaiproject.org">source@collab.sakaiproject.org</a> using -f To: <a href="mailto:source@collab.sakaiproject.org">ray@media.berkeley.edu</a> using -f To: <a href="mailto:source@collab.sakaiproject.org">ray@media.berkeley.edu</a> using -f To: <a href="mailto:source@collab.sakaiproject.org">source@collab.sakaiproject.org</a> using -f To: <a href="mailto:source@collab.sakaiproject.org">ray@media.sakaiproject.org</a> using -f To: <a href="mailto:source@collab.sakaiproject.org">ray@media.sakaiproject.org</a> using -f To: <a href="mailto:source@collab.sakaiproject.org">ray@media.sakaiproject.org</a> using -f To: <a href="mailto:source
           My Workspace > Preferences. From <a href="mailto:cwen@iupui.edu">cwen@iupui.edu</a> Thu Jan 3 16:34:40 2008 Return-Path: Received: from murder
           apache set sender to <a href="mailto:cwen@iupui.edu">cwen@iupui.edu</a> using -f To: <a href="mailto:source@collab.sakaiproject.org">source@collab.sakaiproject.org</a> From: <a href="mailto:cwen@iupui.edu">cwen@iupui.edu</a> Subject: [sakai]
           > Preferences. From <a href="mailto:cwen@iupui.edu">cwen@iupui.edu</a> Thu Jan 3 16:29:07 2008 Return-Path: Received: from murder (mail.umich.edu
           apache set sender to <a href="mailto:cwen@iupui.edu">cwen@iupui.edu</a> using -f To: <a href="mailto:source@collab.sakaiproject.org">source@collab.sakaiproject.org</a> From: <a href="mailto:cwen@iupui.edu">cwen@iupui.edu</a> Subject: [sakai]
```

My Workspace > Preferences. From cwen@iupui.edu Thu Jan 3 16:23:48 2008 Return-Path: Received: from murder apache set sender to cwen@iupui.edu using -f To: source@collab.sakaiproject.org From: cwen@iupui.edu Subject: [sakai]

Q2. Write a python code to Search for lines that start with 'From'

```
def search_lines_starting_with_keyword(file_path, keyword):
        with open(file_path, 'r') as file:
            lines = file.readlines()
            matching_lines = [line.strip() for line in lines if line.startswith(keyword)]
            return matching_lines
    except FileNotFoundError:
        return []
file_path = 'mob.txt'
keyword = 'From'
matching_lines = search_lines_starting_with_keyword(file_path, keyword)
if matching_lines:
    print(f"Lines containing '{format(keyword)}' found:")
    for line in matching_lines:
        print(line)
    print(f"No lines starting with '{format(keyword)}' were found.")
     Lines containing 'From' found:
     From <a href="mailto:stephen.marquard@uct.ac.za">set Jan 5 09:14:16 2008 Return-Path: Received: from murder (mail.umich.edu</a>
     From: zqian@umich.edu Subject: [sakai] svn commit: r39770 - site-manage/branches/sakai_2-5-x/site-managetool/tool/src/webapp/vm/sit
     From: gsilver@umich.edu Subject: [sakai] svn commit: r39761 - site/trunk/site-tool/tool/src/bundle X-Content-Type-OuterEnvelope: te
     From: zqian@umich.edu Subject: [sakai] svn commit: r39760 - in site-manage/trunk/site-manage-tool/tool/src:
```

Q3. Write a python code to Search for lines that start with 'F', followed by # 2 characters, followed by 'm'

```
import re
def search_custom_pattern(file_path, pattern):
        with open(file_path, 'r') as file:
            lines = file.readlines()
            matching_lines = [line.strip() for line in lines if re.match(pattern, line)]
            return matching lines
    except FileNotFoundError:
        return []
file_path = 'mob.txt'
pattern = r'^F..m'
matching_lines = search_custom_pattern(file_path, pattern)
if matching_lines:
    print("Lines matching the pattern found: ")
    for line in matching_lines:
        print(line)
else:
    print("No lines matching the pattern were found !!!")
     Lines matching the pattern found:
     From <a href="mailto:stephen.marquard@uct.ac.za">stephen.marquard@uct.ac.za</a> Sat Jan 5 09:14:16 2008 Return-Path: Received: from murder (mail.umich.edu
     From: zgian@umich.edu Subject: [sakai] svn commit: r39770 - site-manage/branches/sakai_2-5-x/site-managetool/tool/src/webapp/vm/sit
     From: gsilver@umich.edu Subject: [sakai] svn commit: r39761 - site/trunk/site-tool/tool/src/bundle X-Content-Type-OuterEnvelope: te
     From: zqian@umich.edu Subject: [sakai] svn commit: r39760 - in site-manage/trunk/site-manage-tool/tool/src:
```

Q4. Write a python code to Search for lines that start with From and have @ sign

```
def search_lines_with_from_and_at(file_path):
        with open(file_path, 'r') as file:
            lines = file.readlines()
            matching_lines = [line.strip() for line in lines if line.startswith('From') and '@' in line]
            return matching_lines
    except FileNotFoundError:
        return []
file path = 'mob.txt'
matching_lines = search_lines_with_from_and_at(file_path)
if matching_lines:
    print("Lines starting with 'From' and containing '@' found:")
    for line in matching_lines:
        print(line)
else.
    print("No lines matching the criteria were found.")
     Lines starting with 'From' and containing '@' found:
     From <a href="mailto:stephen.marquard@uct.ac.za">set Jan 5 09:14:16 2008 Return-Path: Received: from murder (mail.umich.edu</a>
     From: zqian@umich.edu Subject: [sakai] svn commit: r39770 - site-manage/branches/sakai_2-5-x/site-managetool/tool/src/webapp/vm/sit
     From: gsilver@umich.edu Subject: [sakai] svn commit: r39761 - site/trunk/site-tool/tool/src/bundle X-Content-Type-OuterEnvelope: te
     From: zqian@umich.edu Subject: [sakai] svn commit: r39760 - in site-manage/trunk/site-manage-tool/tool/src:
```

→ Q5. Write a python code to Search for lines that have an @ sign between characters

```
def search_lines_with_at_between_characters(file_path):
    try:
        with open(file_path, 'r') as file:
              lines = file.readlines()
              matching_lines = [line.strip() for line in lines if '@' in line and len(line.split('@')) > 1]
              return matching_lines
    except FileNotFoundError:
        return []

file_path = 'mob.txt'

matching_lines = search_lines_with_at_between_characters(file_path)

if matching_lines:
    print("Lines containing '@' between characters found:")
    for line in matching_lines:
        print(line)

else:
    print("No lines matching the criteria were found.")
```

```
<200801032205.m03M5Ea7005273@nakamura.uits.iupui.edu> Mime-Version: 1.0 Content-Transfer-Encoding: 7bit
ESMTP id m03M5EQa005275 for ; Thu, 3 Jan 2008 17:05:14 -0500 Received: (from apache@localhost) by
nakamura.uits.iupui.edu (8.12.11.20060308/8.12.11/Submit) id m03M5Ea7005273 for <a href="source@collab.sakaiproject.org">source@collab.sakaiproject.org</a>; Thu,
apache set sender to ray@media.berkeley.edu using -f To: source@collab.sakaiproject.org From: ray@media.berkeley.edu
charset=UTF-8 X-Content-Type-Message-Body: text/plain; charset=UTF-8 Content-Type: text/plain; charset=UTF-8 XDSPAM-Result: Inno
My Workspace > Preferences. From <a href="mailto:cwen@iupui.edu">cwen@iupui.edu</a> Thu Jan 3 16:34:40 2008 Return-Path: Received: from murder
<200801032133.m03LX3gG005191@nakamura.uits.iupui.edu> Mime-Version: 1.0 Content-Transfer-Encoding: 7bit
ESMTP id m03LX3Vb005193 for ; Thu, 3 Jan 2008 16:33:03 -0500 Received: (from apache@localhost) by
nakamura.uits.iupui.edu (8.12.11.20060308/8.12.11/Submit) id m03LX3g6005191 for source@collab.sakaiproject.org; Thu,
apache set sender to <a href="mailto:cwen@iupui.edu">cwen@iupui.edu</a> using -f To: <a href="mailto:source@collab.sakaiproject.org">source@collab.sakaiproject.org</a> From: <a href="mailto:cwen@iupui.edu">cwen@iupui.edu</a> Subject: [sakai]
charset=UTF-8 X-Content-Type-Message-Body: text/plain; charset=UTF-8 Content-Type: text/plain; charset=UTF-8 XDSPAM-Result: Inno
> Preferences. From <a href="mailto:cwen@iupui.edu">cwen@iupui.edu</a> Thu Jan 3 16:29:07 2008 Return-Path: Received: from murder (mail.umich.edu
< \underline{200801032127.m03LRUqH005177@nakamura.uits.iupui.edu} \\ \verb| Mime-Version: 1.0 Content-Transfer-Encoding: 7bit | Transfer-Encoding: 7bit | Transf
ESMTP id m03LRUk4005179 for ; Thu, 3 Jan 2008 16:27:30 -0500 Received: (from apache@localhost) by
nakamura.uits.iupui.edu (8.12.11.20060308/8.12.11/Submit) id m03LRUqH005177 for <a href="mailto:source@collab.sakaiproject.org">source@collab.sakaiproject.org</a>; Thu,
apache set sender to <a href="mailto:cwen@iupui.edu">cwen@iupui.edu</a> using -f To: <a href="mailto:source@collab.sakaiproject.org">source@collab.sakaiproject.org</a> From: <a href="mailto:cwen@iupui.edu">cwen@iupui.edu</a> Subject: [sakai]
Author: <a href="mailto:cwen@iupui.edu">cwen@iupui.edu</a> Date: 2008-01-03 16:27:29 -0500 (Thu, 03 Jan 2008) New Revision: 39743 Modified:
wagnermr@iupui.edu | 2007-12-17 17:11:08 -0500 (Mon, 17 Dec 2007) | 3 lines SAK-12504
My Workspace > Preferences. From <a href="mailto:cwen@iupui.edu">cwen@iupui.edu</a> Thu Jan 3 16:23:48 2008 Return-Path: Received: from murder
 <200801032122.m03LMFo4005148@nakamura.uits.iupui.edu> Mime-Version: 1.0 Content-Transfer-Encoding: 7bit
ESMTP id m03LMFtT005150 for ; Thu, 3 Jan 2008 16:22:15 -0500 Received: (from apache@localhost) by
nakamura.uits.iupui.edu (8.12.11.20060308/8.12.11/Submit) id m03LMFo4005148 for source@collab.sakaiproject.org; Thu,
apache set sender to <a href="mailto:cwen@iupui.edu">cwen@iupui.edu</a> using -f To: <a href="mailto:source@collab.sakaiproject.org">source@collab.sakaiproject.org</a> From: <a href="mailto:cwen@iupui.edu">cwen@iupui.edu</a> Subject: [sakai]
Author: <a href="mailto:cwen@iupui.edu">cwen@iupui.edu</a> Date: 2008-01-03 16:22:14 -0500 (Thu, 03 Jan 2008) New Revision: 39742 Modified:
<u>wagnermr@iupui.edu</u> | 2007-09-12 16:17:59 -0400 (Wed, 12 Sep 2007) | 3 lines SAK-11458
```

Q6. Write a python code to Search for lines that have an @ sign between characters, the characters must be a letter or number

```
import re
def search_lines_with_valid_at_symbol(file_path, pattern):
             with open(file_path, 'r') as file:
                   lines = file.readlines()
                   matching_lines = [line.strip() for line in lines if re.search(pattern, line)]
                   return matching_lines
       except FileNotFoundError:
             return []
file_path = 'mob.txt'
pattern = r'[a-zA-Z0-9]+@[a-zA-Z0-9]+'
matching_lines = search_lines_with_valid_at_symbol(file_path, pattern)
      print("Lines containing valid '@' symbols between characters found:")
       for line in matching_lines:
             print(line)
       print("No lines matching the criteria were found.")
       ing valid '@' symbols between characters found:
       <u>marquard@uct.ac.za</u> Sat Jan 5 09:14:16 2008 Return-Path: Received: from murder (mail.umich.edu
       08 14:10:05 +0000 (GMT) Message-ID: <200801051412.m05ECIaH010327@nakamura.uits.iupui.edu> MimeVersion: 1.0 Content-Transfer-Encod
       d: (from apache@localhost) by nakamura.uits.iupui.edu (8.12.11.20060308/8.12.11/Submit) id
       7 for source@collab.sakaiproject.org; Sat, 5 Jan 2008 09:12:18 -0500 Date: Sat, 5 Jan 2008 09:12:18
       ntication-Warning: nakamura.uits.iupui.edu: apache set sender to <a href="stephen.marquard@uct.ac.za">stephen.marquard@uct.ac.za</a> using -f To:
       <u>.sakaiproject.org</u> From: <u>stephen.marquard@uct.ac.za</u> Subject: [sakai] svn commit: r39772 - ard@uct.ac.za Date: 2008-01-05 09:12:07 -0500 (Sat, 05 Jan 2008) New Revision: 39772 Modified:
       y how you receive notifications at My Workspace > Preferences. From <a href="louis@media.berkeley.edu">louis@media.berkeley.edu</a> Fri Jan 4
       200801042308.m04N8v60008125@nakamura.uits.iupui.edu> Mime-Version: 1.0 Content-TransferEncoding: 7bit Received: from prod.collab.
       ost) by nakamura.uits.iupui.edu (8.12.11.20060308/8.12.11/Submit) id m04N8v60008125 for
       .sakaiproject.org; Fri, 4 Jan 2008 18:08:57 -0500 Date: Fri, 4 Jan 2008 18:08:57 -0500 X-AuthenticationWarning: nakamura.uits.iup
       <u>.sakaiproject.org</u> From: <u>louis@media.berkeley.edu</u> Subject: [sakai] svn commit: r39771 - in bspace/sitemanage/sakai_2-4-x/site-mana
       erkeley.edu Date: 2008-01-04 18:08:50 -0500 (Fri, 04 Jan 2008) New Revision: 39771 Modified:
       You can modify how you receive notifications at My Workspace > Preferences. From zqian@umich.edu Fri Jan
       0 (GMT) Message-ID: <200801042109.m04L92hb007923@nakamura.uits.iupui.edu> Mime-Version: 1.0
       ost) by nakamura.uits.iupui.edu (8.12.11.20060308/8.12.11/Submit) id m04L92hb007923 for
       .sakaiproject.org; Fri, 4 Jan 2008 16:09:02 -0500 Date: Fri, 4 Jan 2008 16:09:02 -0500 X-AuthenticationWarning: nakamura.uits.iup
       mich.edu Subject: [sakai] svn commit: r39770 - site-manage/branches/sakai_2-5-x/site-managetool/tool/src/webapp/vm/sitesetup X-Co
       .sakaiproject.org/viewsvn/?view=rev&rev=39770 Author: zqian@umich.edu Date: 2008-01-04 16:09:01 -0500
         at My Workspace > Preferences. From <a href="right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-">right-qued-"
        <u>.m04Kiem3007881@nakamura.uits.iupui.edu</u>> Mime-Version: 1.0 Content-Transfer-Encoding: 7bit
       ieqE007883 for ; Fri, 4 Jan 2008 15:44:40 -0500 Received: (from apache@localhost) by
       .iupui.edu (8.12.11.20060308/8.12.11/Submit) id m04Kiem3007881 for source@collab.sakaiproject.org; Fri, 4
        <u>rjlowe@iupui.edu</u> using -f To: <u>source@collab.sakaiproject.org</u> From: <u>rjlowe@iupui.edu</u> Subject: [sakai] svn
       e@iupui.edu Date: 2008-01-04 15:44:39 -0500 (Fri, 04 Jan 2008) New Revision: 39769 Modified:
        . From <u>zqian@umich.edu</u> Fri Jan 4 15:03:18 2008 Return-Path: Received: from murder (mail.umich.edu
        .m04K1c00007738@nakamura.uits.iupui.edu> Mime-Version: 1.0 Content-Transfer-Encoding: 7bit
       1cXv007740 for ; Fri, 4 Jan 2008 15:01:38 -0500 Received: (from apache@localhost) by
```

```
.iupui.edu (8.12.11.20060308/8.12.11/Submit) id m04K1cO0007738 for source@collab.sakaiproject.org; Fri, 4
 zqian@umich.edu using -f To: source@collab.sakaiproject.org From: zqian@umich.edu Subject: [sakai] svn
<u>@umich.edu</u> Date: 2008-01-04 15:01:37 -0500 (Fri, 04 Jan 2008) New Revision: 39766 Modified: sitemanage/branches/sakai_2-4-x/site-
du Fix to SAK-10788: If a provided id in a couse site is fake or doesn't provide any user information, Site
references. From rjlowe@iupui.edu Fri Jan 4 14:50:18 2008 Return-Path: Received: from murder
.m04Jmdw0007705@nakamura.uits.iupui.edu> Mime-Version: 1.0 Content-Transfer-Encoding: 7bit
meV9007707 for ; Fri, 4 Jan 2008 14:48:40 -0500 Received: (from apache@localhost) by
.iupui.edu (8.12.11.20060308/8.12.11/Submit) id m04Jmdw0007705 for source@collab.sakaiproject.org; Fri,
nder to <a href="mailto:rjlowe@iupui.edu">rjlowe@iupui.edu</a> using -f To: <a href="mailto:source@collab.sakaiproject.org">source@collab.sakaiproject.org</a> From: <a href="mailto:rjlowe@iupui.edu">rjlowe@iupui.edu</a> Subject: [sakai]
.sakaiproject.org/viewsvn/?view=rev&rev=39765 Author: rjlowe@iupui.edu Date: 2008-01-04 14:48:37 -0500
. From <a href="mailto:cwen@iupui.edu">mailto:cwen@iupui.edu</a> Fri Jan 4 11:37:30 2008 Return-Path: Received: from murder (mail.umich.edu
08 16:37:07 +0000 (GMT) Message-ID: <200801041635.m04GZ0GZ007313@nakamura.uits.iupui.edu>
d: (from apache@localhost) by nakamura.uits.iupui.edu (8.12.11.20060308/8.12.11/Submit) id
3 for source@collab.sakaiproject.org; Fri, 4 Jan 2008 11:35:26 -0500 Date: Fri, 4 Jan 2008 11:35:26
ntication-Warning: nakamura.uits.iupui.edu: apache set sender to cwen@iupui.edu using -f To:
<u>.sakaiproject.org</u> From: <u>cwen@iupui.edu</u> Subject: [sakai] svn commit: r39764 - in
<u>u</u> Date: 2008-01-04 11:35:25 -0500 (Fri, 04 Jan 2008) New Revision: 39764 Modified:
                                       --- r39558 | <u>hu2@iupui.edu</u> | 2007-12-20 15:25:38 -0500 (Thu, 20 Dec 2007) | 3 lines
y how you receive notifications at My Workspace > Preferences. From <u>cwen@iupui.edu</u> Fri Jan 4 11:35:08
<u>.m04GX6eG007292@nakamura.uits.iupui.edu</u>> Mime-Version: 1.0 Content-Transfer-Encoding: 7bit
X6Y3007294 for ; Fri, 4 Jan 2008 11:33:06 -0500 Received: (from apache@localhost) by
.iupui.edu (8.12.11.20060308/8.12.11/Submit) id m04GX6eG007292 for source@collab.sakaiproject.org; Fri,
nder to <a href="mailto:cwen@iupui.edu">cwen@iupui.edu</a> using -f To: <a href="mailto:source@collab.sakaiproject.org">source@collab.sakaiproject.org</a> From: <a href="mailto:cwen@iupui.edu">cwen@iupui.edu</a> Subject: [sakai]
X-Content-Type-Message-Body: text/plain; charset=UTF-8 Content-Type: text/plain; charset=UTF-8 XDSPAM-Result: Innocent X-DSPAM-P
                ------ r39571 | <u>hu2@iupui.edu</u> | 2007-12-20 21:26:28 -0500 (Thu, 20 Dec 2007) | 3 lines SAK-12484
. From gsilver@umich.edu Fri Jan 4 11:12:37 2008 Return-Path: Received: from murder (mail.umich.edu
08 16:12:27 +0000 (GMT) Message-ID: <<u>200801041611.m04GB1Lb007221@nakamura.uits.iupui.edu</u>> MimeVersion: 1.0 Content-Transfer-Encod
\hbox{\tt d: (from apache@localhost) by nakamura.uits.iupui.edu (8.12.11.20060308/8.12.11/Submit) id}\\
```

- Q7. Write a python code to Search for lines that start with 'X' followed by any non-
- whitespace characters and ':' followed by a space and any number. The number can include a decimal point.

```
import re
def search_lines_with_pattern(file_path, pattern):
        with open(file path, 'r') as file:
            lines = file.readlines()
            matching_lines = [line.strip() for line in lines if re.match(pattern, line)]
            return matching lines
    except FileNotFoundError:
        return []
file_path = 'mob.txt'
pattern = r'^X\\w+:\\s\\d+(\\.\\d+)?$'
matching_lines = search_lines_with_pattern(file_path, pattern)
if matching lines:
    print("Lines matching the specified pattern found: ")
    for line in matching_lines:
        print(line)
    print("No lines matching !!!")
     No lines matching !!!
```

▼ Q8. Write a python code to Search for specific email of @uct.ac.za

```
def search_email_addresses(file_path, domain):
    try:
        with open(file_path, 'r') as file:
            lines = file.readlines()
            matching_emails = [line.strip() for line in lines if domain in line]
            return matching_emails
    except FileNotFoundError:
        return []

file_path = 'mob.txt'
domain = '@uct.ac.za'

matching_emails = search_email_addresses(file_path, domain)

if matching_emails:
```

```
print(f"Email addresses with domain '{format(domain)}' found:")
for email in matching_emails:
     print(email)
print(f"No email addresses with domain '{format(domain)}' were found.")
 Email addresses with domain '@uct.ac.za' found:
 From <a href="mailto:stephen.marquard@uct.ac.za">stephen.marquard@uct.ac.za</a> Sat Jan 5 09:14:16 2008 Return-Path: Received: from murder (mail.umich.edu
 -0500 X-Authentication-Warning: nakamura.uits.iupui.edu: apache set sender to stephen.marquard@uct.ac.za using -f To:
 source@collab.sakaiproject.org From: stephen.marquard@uct.ac.za Subject: [sakai] svn commit: r39772 -
 stephen.marquard@uct.ac.za Date: 2008-01-05 09:12:07 -0500 (Sat, 05 Jan 2008) New Revision: 39772 Modified:
 can modify how you receive notifications at My Workspace > Preferences. From <a href="mailto:david.horwitz@uct.ac.za">david.horwitz@uct.ac.za</a> Fri Jan 4
 set sender to <a href="mailto:david.horwitz@uct.ac.za">david.horwitz@uct.ac.za</a> Subject: <a href="mailto:source@collab.sakaiproject.org">source@collab.sakaiproject.org</a> From: <a href="mailto:david.horwitz@uct.ac.za">david.horwitz@uct.ac.za</a> Subject:
 charset=UTF-8 X-Content-Type-Message-Body: text/plain; charset=UTF-8 Content-Type: text/plain; charset=UTF-8 XDSPAM-Result: Innocen
 r39753 | david.horwitz@uct.ac.za | 2008-01-04 13:05:51 +0200 (Fri, 04 Jan 2008) | 1 line SAK-12228 implmented
 > Preferences. From david.horwitz@uct.ac.za Fri Jan 4 06:08:27 2008 Return-Path: Received: from murder
 set sender to <a href="mailto:david.horwitz@uct.ac.za">david.horwitz@uct.ac.za</a> using -f To: <a href="mailto:source@collab.sakaiproject.org">source@collab.sakaiproject.org</a> From: <a href="mailto:david.horwitz@uct.ac.za">david.horwitz@uct.ac.za</a> Subject:
 charset=UTF-8 X-Content-Type-Message-Body: text/plain; charset=UTF-8 Content-Type: text/plain; charset=UTF-8 XDSPAM-Result: Innocen
 Workspace > Preferences. From david.horwitz@uct.ac.za Fri Jan 4 04:49:08 2008 Return-Path: Received: from murder
 set sender to <a href="mailto:david.horwitz@uct.ac.za">david.horwitz@uct.ac.za</a> using -f To: <a href="mailto:source@collab.sakaiproject.org">source@collab.sakaiproject.org</a> From: <a href="mailto:david.horwitz@uct.ac.za">david.horwitz@uct.ac.za</a> Subject:
 Author: <a href="mailto:david.horwitz@uct.ac.za">david.horwitz@uct.ac.za</a> Date: 2008-01-04 04:47:16 -0500 (Fri, 04 Jan 2008) New Revision: 39752 Modified:
 receive notifications at My Workspace > Preferences. From <a href="mailto:david.horwitz@uct.ac.za">david.horwitz@uct.ac.za</a> Fri Jan 4 04:33:44 2008 Return-Path:
 set sender to <a href="mailto:david.horwitz@uct.ac.za">david.horwitz@uct.ac.za</a> using -f To: <a href="mailto:source@collab.sakaiproject.org">source@collab.sakaiproject.org</a> From: <a href="mailto:david.horwitz@uct.ac.za">david.horwitz@uct.ac.za</a> Subject:
 Author: david.horwitz@uct.ac.za Date: 2008-01-04 04:31:35 -0500 (Fri, 04 Jan 2008) New Revision: 39751 Removed:
 stephen.marquard@uct.ac.za Fri Jan 4 04:07:34 2008 Return-Path: Received: from murder (mail.umich.edu
 set sender to stephen.marquard@uct.ac.za using -f To: source@collab.sakaiproject.org From:
stephen.marquard@uct.ac.za Subject: [sakai] svn commit: r39750 - event/branches/SAK-6216/eventutil/util/src/java/org/sakaiproject/u
 http://source.sakaiproject.org/viewsvn/?view=rev&rev=39750 Author: stephen.marquard@uct.ac.za Date: 2008-01-04
 4
```

Q9. Write a python code to print ip address

```
import re
def extract_ip_addresses(file_path, ip_pattern):
        with open(file_path, 'r') as file:
            lines = file.readlines()
            ip addresses = [ip for line in lines for ip in re.findall(ip pattern, line)]
            return ip_addresses
    except FileNotFoundError:
        return []
file path = 'mob.txt'
ip_pattern = r'\b(?:\d{1,3}\.){3}\d{1,3}\b'
ip_addresses = extract_ip_addresses(file_path, ip_pattern)
if in addresses:
    print(f"Total IP addresses found: {len(ip_addresses)}")
    print("IP addresses found:")
    for ip in ip_addresses:
        print(ip)
    print("No IP addresses were found.")
```

```
141.211.14.58
194.35.219.184
127.0.0.1
194.35.219.182
134.68.220.122
127.0.0.1
141.211.14.39
141.211.93.141
194.35.219.184
127.0.0.1
194.35.219.182
134.68.220.122
127.0.0.1
141.211.14.34
141.211.93.149
194.35.219.184
127.0.0.1
194.35.219.182
134.68.220.122
127.0.0.1
141.211.14.46
141.211.93.145
194.35.219.184
127.0.0.1
194.35.219.182
134.68.220.122
127.0.0.1
141.211.14.91
141.211.14.58
194.35.219.184
127.0.0.1
194.35.219.182
134.68.220.122
127.0.0.1
```

PostLab: Demonstrate glob filename pattern matching using a suitable example.python code for it

```
import glob
fileName = 'mob.txt'

matching_files = glob.glob(fileName)

if matching_files:
    print("Matching files found:")
    for file_path in matching_files:
        print(file_path)

else:
    print("No matching files were found.")

    Matching files found:
    mob.txt
```