Assignment 5 – GREP Commands

Command: grep [options] [pattern] [filename]

Exercise 1:

1. Launch the terminal. - A terminal window was opened.

2. Use a command to create a file containing the following data. Call it a6-e1-f1. Use tabs to separate the fields Do not type the headings.

ID	Name	Hours	Hourly Pay
1425	Juan	18	14.25
4321	George	22	21.11
6781	Anna	44	16.77
1451	Ben	36	21.77
2277	Tuan	16	18.77

kri@kri-ubuntu:~$ cat>a6-e1-f1

1425	Juan	18	14.25
4321	George	22	21.11
6781	Anna	44	16.77
1451	Ben	36	21.77
2277	Tuan	16	18.77

3. Use a one-line command to display the hourly pay of Anna (only the last field).
kri@kri-ubuntu:~$ grep "Anna" a6-e1-f1 | cut -f4
16.77

4. Use a one—line command to find the name of the employee with ID 1451.
kri@kri-ubuntu:~$ grep "1451" a6-e1-f1 | cut -f2
Ben

5. Use a one-line command to find the names of employees who worked more than 20 hours. Hint: You may first want to extract the second and third fields before applying one of the grep commands.
kri@kri-ubuntu:~$ cut -f2,3 a6-e1-f1 | grep 2 | cut -f1
George

6. Use a one-line command to find the id and hours worked for employees who earn more than $20 per hour.
kri@kri-ubuntu:~$ egrep '[2-9][0-9]\.[0-9]?[0-9]' a6-e1-f1 | cut -f1,3
4321   22
1451   36

7. Use a one-line command to find the id, name, and hourly pay for employees who worked fewer than 10 hours.
kri@kri-ubuntu:~$ egrep '\<[0-9]?\>' a6-e1-f1 | cut -f1,2,4

8. Quit the terminal. - The terminal window is closed.

Exercise 2:

1. Launch the terminal. - A terminal window was opened.

2. Create the following file. Call it a6-e2-f1.

Psalm of Life
Tell me not, in mournful numbers,
Life is but an empty dream!
For the soul is dead that slumbers,
And things are not what they seem.

Life is real! Life is earnest!
And the grave is not its goal;
Dust thou art, to dust returnest,
Was not spoken of the soul.

Not enjoyment, and not sorrow,
Is our destined end or way;
But to act, that each to-morrow
Find us farther than to-day.

Art is long, and Time is fleeting,
And our hearts, though stout and brave,
Still, like muffled drums, are beating
Funeral marches to the grave.

In the world's broad field of battle,
In the bivouac of Life,
Be not like dumb, driven cattle!
Be a hero in the strife!

Trust no Future, howe'er pleasant!
Let the dead Past bury its dead!
Act, act in the living Present!
Heart within, and God o'erhead!

Lives of great men all remind us
We can make our lives sublime,
And, departing, leave behind us
Footprints on the sands of time;

Footprints, that perhaps another,
Sailing o'er life's solemn main,
A forlorn and shipwrecked brother,
Seeing, shall take heart again.

Let us, then, be up and doing,
With a heart for any fate;
Still achieving, still pursuing,

Learn to labor and to wait.
kri@kri-ubuntu:~$ cat>a6-e2-f1
  Psalm of Life
Tell me not, in mournful numbers,
  Life is but an empty dream!
For the soul is dead that slumbers,
  And things are not what they seem.

Life is real! Life is earnest!
  And the grave is not its goal;
Dust thou art, to dust returnest,
  Was not spoken of the soul.

Not enjoyment, and not sorrow,
  Is our destined end or way;
But to act, that each to-morrow
  Find us farther than to-day.

Art is long, and Time is fleeting,
  And our hearts, though stout and brave,
Still, like muffled drums, are beating
  Funeral marches to the grave.

In the world's broad field of battle,
  In the bivouac of Life,
Be not like dumb, driven cattle!
  Be a hero in the strife!

Trust no Future, howe'er pleasant!
  Let the dead Past bury its dead!
Act, act in the living Present!
  Heart within, and God o'erhead!

Lives of great men all remind us
  We can make our lives sublime,
And, departing, leave behind us
  Footprints on the sands of time;

Footprints, that perhaps another,
  Sailing o'er life's solemn main,
A forlorn and shipwrecked brother,
  Seeing, shall take heart again.

Let us, then, be up and doing,
  With a heart for any fate;
Still achieving, still pursuing,
  Learn to labor and to wait.

3. Use a one-line command to copy file a6-e2-f1 without the blank lines (copy with-

out nonblank lines). Call the new file a6-e2-f2.
**kri@kri-ubuntu:~$** grep [^'^$'] a6-e2-f1 | cat>a6-e2-f2
kri@kri-ubuntu:~$ cat a6-e2-f2
      Psalm of Life
Tell me not, in mournful numbers,
      Life is but an empty dream!
For the soul is dead that slumbers,
      And things are not what they seem.
Life is real! Life is earnest!
      And the grave is not its goal;
Dust thou art, to dust returnest,
      Was not spoken of the soul.
Not enjoyment, and not sorrow,
      Is our destined end or way;
But to act, that each to-morrow
      Find us farther than to-day.
Art is long, and Time is fleeting,
      And our hearts, though stout and brave,
Still, like muffled drums, are beating
      Funeral marches to the grave.
In the world's broad field of battle,
      In the bivouac of Life,
Be not like dumb, driven cattle!
      Be a hero in the strife!
Trust no Future, howe'er pleasant!
      Let the dead Past bury its dead!
Act, act in the living Present!
      Heart within, and God o'erhead!
Lives of great men all remind us
      We can make our lives sublime,
And, departing, leave behind us
      Footprints on the sands of time;
Footprints, that perhaps another,
      Sailing o'er life's solemn main,
A forlorn and shipwrecked brother,
      Seeing, shall take heart again.
Let us, then, be up and doing,
      With a heart for any fate;
Still achieving, still pursuing,
      Learn to labor and to wait.

4. Use appropriate commands to create two new files out of a6-e2-f2. The first file,
called a6-e2-f3, contains only the lines that are indented. The second file, called
a6-e2-f4, contains the lines that are not indented.
kri@kri-ubuntu:~$ grep -P '^\t' a6-e2-f2 | cat>a6-e2-f3
    (Alternate) grep '^   ' a6-e2-f2 *(i.e. press 'ctrl+v', then press 'tab' to get a tab verbatim)*
kri@kri-ubuntu:~$ grep -v '^   ' a6-e2-f2 | cat> a6-e2-f4

kri@kri-ubuntu:~$ cat a6-e2-f3
　　　　Psalm of Life
　　　　Life is but an empty dream!
　　　　And things are not what they seem.
　　　　And the grave is not its goal;
　　　　Was not spoken of the soul.
　　　　Is our destined end or way;
　　　　Find us farther than to-day.
　　　　And our hearts, though stout and brave,
　　　　Funeral marches to the grave.
　　　　In the bivouac of Life,
　　　　Be a hero in the strife!
　　　　Let the dead Past bury its dead!
　　　　Heart within, and God o'erhead!
　　　　We can make our lives sublime,
　　　　Footprints on the sands of time;
　　　　Sailing o'er life's solemn main,
　　　　Seeing, shall take heart again.
　　　　With a heart for any fate;
　　　　Learn to labor and to wait.
kri@kri-ubuntu:~$ cat a6-e2-f4
Tell me not, in mournful numbers,
For the soul is dead that slumbers,
Life is real! Life is earnest!
Dust thou art, to dust returnest,
Not enjoyment, and not sorrow,
But to act, that each to-morrow
Art is long, and Time is fleeting,
Still, like muffled drums, are beating
In the world's broad field of battle,
Be not like dumb, driven cattle!
Trust no Future, howe'er pleasant!
Act, act in the living Present!
Lives of great men all remind us
And, departing, leave behind us
Footprints, that perhaps another,
A forlorn and shipwrecked brother,
Let us, then, be up and doing,
Still achieving, still pursuing,

5. Use a one-line command to create a new file out of a6-e3-f3. This file, which is called a6-e2-f5, contains the lines that are centered (equal leading and trailing spaces in each line).
kri@kri-ubuntu:~$ grep '^　　.*　　$' a6-e2-f3
(There are no lines with a tab at the end. Hence, there are no lines with equal leading and trailing spaces in them.)

6. Quit the terminal. - The terminal window is closed.

Exercise 3:

1. Launch the terminal. - A terminal window was opened.

2. Create and save the following file. Do not type the headings. Call it a6-e3-f1.

Department	Course		Session	Enrollment
CIS	15	1	45	
CIS	54	1	20	
BUS	34	2	20	
ENG	11	2	89	
CIS	45	1	38	
MTH	35	1	56	
MTH	35	2	41	
PE	17	2	25	
CIS	54	2	67	

kri@kri-ubuntu:~$ cat> a6-e3-f1
```
CIS    15    1    45
CIS    54    1    20
BUS    34    2    20
ENG    11    2    89
CIS    45    1    38
MTH    35    1    56
MTH    35    2    41
PE     17    2    25
CIS    54    2    67
```

3. Use a command to create a file of courses that have only one session. Call the file a6-e3-f2.
kri@kri-ubuntu:~$ grep '   1   ' a6-e3-f1 | cat> a6-e3-f2
kri@kri-ubuntu:~$ cat a6-e3-f2
```
CIS    15    1    45
CIS    54    1    20
CIS    45    1    38
MTH    35    1    56
```

4. Use a command to create a file of courses offered in the CIS department. Call the file a6-e3-f3.
kri@kri-ubuntu:~$ grep '^CIS' a6-e3-f1 | cat> a6-e3-f3
kri@kri-ubuntu:~$ cat a6-e3-f3
```
CIS    15    1    45
CIS    54    1    20
CIS    45    1    38
CIS    54    2    67
```

5. Use a command to create a file of courses that have fewer than 25 students. Call the file a6-e3-f4.
**kri@kri-ubuntu:~$** grep '[2][0-4]$' a6-e3-f1 | cat> a6-e3-f4
kri@kri-ubuntu:~$ cat a6-e3-f4
```
CIS    54    1    20
```

BUS   34   2   20

6. Use a command to create a file of Courses that have between 25 and 30 students. Call the file a6-e3-f5.
**kri@kri-ubuntu:~$** grep '[2][5-9]$' a6-e3-f1 | cat> a6-e3-f5
kri@kri-ubuntu:~$ cat a6-e3-f5
PE   17   2   25

7. Quit the terminal. - The terminal window is closed.

Exercise 4:

1. Launch the terminal. - A terminal window was opened.

2. Create and save the following file. Call it a6-e4-f1.
Great fleas have little fleas
            upon their backs to bite 'em,
And little fleas have lesser fleas,
            and so ad infinitum.
And the great fleas themselves, in turn,
            have greater fleas to go on;
While these again have greater still,
            and greater still, and so on.
kri@kri-ubuntu:~$ cat> a6-e4-f1
Great fleas have little fleas
            upon their backs to bite 'em,
And little fleas have lesser fleas,
            and so ad infinitum.
And the great fleas themselves, in turn,
            have greater fleas to go on;
While these again have greater still,
            and greater still, and so on.

3. Use appropriate commands to create two files out of this file. The first one, a6-e4-f2, contains lines with no duplicated words. The second one, a6-e4-f3, has triplicated words.
kri@kri-ubuntu:~$ egrep '\<([a-zA-Z]+)\>?' a6-e4-f1 | cat> a6-e4-f2
kri@kri-ubuntu:~$ cat a6-e4-f2
            upon their backs to bite 'em,
            and so ad infinitum.
And the great fleas themselves, in turn,
            have greater fleas to go on;
While these again have greater still,
kri@kri-ubuntu:~$ egrep '\<([a-zA-Z]+){3}\>' a6-e4-f1 | cat> a6-e4-f3
kri@kri-ubuntu:~$ cat a6-e4-f3
            (No such lines in file.)

4. Quit the terminal. - The terminal window is closed.

Exercise 5:

1. Launch the terminal. - A terminal window was opened.

2. Create and save the following file. Call it a6-e5-f1.
* Section
A section heading starts with *.
** Subsection
A subsection heading starts with **.
We *emphasize* a phrase by delimiting it *.
*** Subsubsection
A subsubsection starts with ***.
It is a great organization, indeed!
kri@kri-ubuntu:~$ cat> a6-e5-f1
* Section
A section heading starts with *.
** Subsection
A subsection heading starts with **.
We *emphasize* a phrase by delimiting it *.
*** Subsubsection
A subsubsection starts with ***.
It is a great organization, indeed!

3. Write a command that finds the lines that start with one and only one asterisk. The line may contain more asterisks, but it must start with one asterisk followed by a nonasterisk character.
kri@kri-ubuntu:~$ grep '^*\\{1\\}[^*]' a6-e5-f1
* Section
It is a great organization, indeed!

4. Write a command that finds the lines that contain two asterisks separated by another single character.
kri@kri-ubuntu:~$ grep '*\\{1\\}[^*]*\\{1\\}' a6-e5-f1
   (No such lines in file.)

5. Write a command that finds lines with six or fewer asterisks.
kri@kri-ubuntu:~$ grep '\\(*.*\\)\\{,6\\}' a6-e5-f1
* Section
A section heading starts with *.
** Subsection
A subsection heading starts with **.
We *emphasize* a phrase by delimiting it *.
*** Subsubsection
A subsubsection starts with ***.
It is a great organization, indeed!

6. Write a command that has an equal number of asterisks at the beginning and the end.
**kri@kri-ubuntu:~$** grep '\\(^\\*.*\\*$\\)' a6-e5-f1
It is a great organization, indeed!

7. Quit the terminal. - The terminal window is closed.