```
Github user name-lakshyamittal
Repositories name- question-1
File Name- 45562563LakshyaOLQ2
Q12
A)
Command: ubuntu@ip-172-31-23-209:~$ curl -0 https://www.staff.hs-
mittweida.de/~wuenschi/data/media/compbiolbook/chapter-11-regex--structure.pdb
                     % Received % Xferd
Output: % Total
                                          Average Speed
                                                           Time
                                                                             Time Current
                                                                   Time
                                                                     Left
                                  Dload
                                          Upload
                                                   Total
                                                           Spent
                                                                           Speed
100 1140 100 1140
                                                0:00:02
                                     545
                                                          0:00:02 --:--
I have used the curl -O command to download the chapter-11-regex-structure.pdb file
into my AWS account.
Command:ubuntu@ip-172-31-23-209:~\ sed 's/Beisel/Weisel/' chapter-11-regex--
structure.pdb
Output: HEADER Hydrogenase
                                                  23-Mar-99
                                                               1CF7
       Hydrogenase Maturating Endopeptidase Hybd From
SOURCE ORGANISM_SCIENTIFIC: Escherichia coli
       Fritsche, Paschos, Weisel, Boeck & Huber
REMARK NCBI PDB FORMAT VERSION 5.0
SEQRES 1 A 162 MET ARG ILE LEU VAL LEU GLY VAL GLY ASN
SEQRES 2 A
            162
                 THR ASP GLU ALA ILE GLY VAL ARG ILE VAL
           162
                 GLU GLN ARG TYR ILE LEU PRO ASP TYR VAL
SEQRES 3 A
                 ASP GLY GLY THR ALA GLY MET GLU LEU LEU
SEQRES 4 A
            162
HELIX
       1 hel ILE A
                      18
                          GLN A
                                  28
       2 hel PRO A
                      92
                                 107
HELIX
                          THR A
       3 hel ILE A
                     138
HELIX
                          SER A
                                 152
       1 str ARG A
                                 10
SHEET
                          ASN A
                      29
SHEET
       2 str ARG A
                          LEU A
       3 str TYR A
                      35
                                 43
SHEET
                          THR A
ATOM 1
       C
            MET A 1 48.865
                             25.394
                                      51.393
                                              1.00 54.58 C
ATOM 2
            MET A 1 49.879
                             24.359
                                      50.932
                                              1.00 59.61 C
        CA
                                      49.877
47.765
            MET A 1 49.248
ATOM 3
                             23.457
                                              1.00 62.37
        CB
            MET A 1
ATOM 4
        CE
                     51.349
                             24.403
                                              1.00 71.39
            MET A 1 48.708
ATOM 5
                             24.106
                                      48.629
                                              1.00 66.70 C
        CG
ATOM 6
        Ν
            MET A 1 50.347
                             23.578
                                      52.116
                                              1.00 62.03 N
                                      52.020
            MET A 1 47.875
                             25.011
ATOM 7
        0
                                              1.00 54.99 o
8 MOTA
            MET A 1 49.731
                             23.948
                                      47.163
                                              1.00 77.15 S
        SD
B)
Command:ubuntu@ip-172-31-23-209:~\ sed '1,3d' chapter-11-regex--structure.pdb
Output:AUTHOR Fritsche, Paschos, Beisel, Boeck & Huber
REMARK NCBI PDB FORMAT VERSION 5.0
SEQRES
            162
                 MET ARG ILE LEU VAL LEU GLY VAL GLY ASN
       1 A
                 THR ASP GLU ALA ILE GLY VAL ARG ILE VAL
SEORES 2 A
            162
SEQRES 3 A
            162
                 GLU GLN ARG TYR ILE LEU PRO ASP TYR VAL
SEQRES 4 A
            162
                 ASP GLY GLY THR ALA GLY MET GLU LEU LEU
       1 hel ILE A
HELIX
                      18
                          GLN A
                                  28
                      92
                                 107
HELIX
       2 hel PRO A
                          THR A
       3 hel ILE A
HELIX
                     138
                          SER A
                                 152
                                 10
SHEET
       1 str ARG A
                          ASN A
       2 str ARG A
                      29
                                 32
SHEET
                          LEU A
SHEET
       3 str TYR A
                      35
                          THR A
                                 43
            MET A 1 48.865
                                      51.393
50.932
ATOM 1
        C
                             25.394
                                              1.00 54.58 C
            MET A 1 49.879
                                              1.00 59.61 C
ATOM 2
                             24.359
        CA
ATOM 3
            MET A 1 49.248
                             23.457
                                      49.877
                                              1.00 62.37 C
        CB
```

ATOM 4

ATOM 5

ATOM 6

ATOM 7

CE

CG

Ν

0

MET A 1 51.349

MET A 1 48.708

MET A 1 50.347

MET A 1 47.875

24.403

24.106

23.578

25.011

47.765

48.629

52.116

52.020

1.00 71.39 C

1.00 66.70 C

1.00 62.03 N

1.00 54.99 o

```
C)
Command:ubuntu@ip-172-31-23-209:~$ sed -n '5,10p' chapter-11-regex--structure.pdb
Output: REMARK NCBI PDB FORMAT VERSION 5.0
             162
                  MET ARG ILE LEU VAL LEU GLY VAL GLY ASN
                  THR ASP GLU ALA ILE GLY VAL ARG ILE VAL GLU GLN ARG TYR ILE LEU PRO ASP TYR VAL
             162
SEQRES
       2 A
SEQRES 3 A
             162
            162 ASP GLY GLY THR ALA GLY MET GLU LEU LEU
HELIX 1 hel ILE A
                       18 GLN A
D)
Command:ubuntu@ip-172-31-23-209:~ sed ' /MET/d' chapter-11-regex--structure.pdb
                                                    23-Mar-99
Output: HEADER Hydrogenase
                                                                 1CFZ
        Hydrogenase Maturating Endopeptidase Hybd From
COMPND
        ORGANISM_SCIENTIFIC: Escherichia coli
SOURCE
        Fritsche, Paschos, Beisel, Boeck & Huber
REMARK NCBI PDB FORMAT VERSION 5.0
             162
                  THR ASP GLU ALA ILE GLY VAL ARG ILE VAL
       2 A
             162 GLU GLN ARG TYR ILE LEU PRO ASP TYR VAL
SEQRES 3 A
       1 hel ILE A
HELIX
                       18
                           GLN A
                                    28
       2 hel PRO A
HELIX
                       92
                           THR A
                                   107
       3 hel ILE A
HELIX
                      138
                           SER A
                                   152
       1 str ARG A
                           ASN A
                                   10
SHEET
                           LEU A
SHEET
       2 str ARG A
                       29
                                   32
       3 str TYR A
                       35
SHEET
                           THR A
                                   43
E)
Command:ubuntu@ip-172-31-23-209:~$ sed -n ' /HELIX.*ILE/p' chapter-11-regex--
structure.pdb
Output:HELIX 1 hel ILE A
                              18 GLN A
                                            28
HELIX 3 hel ILE A 138 SER A
F)
Command:ubuntu@ip-172-31-23-209:~ sed -n ' /HELIX.*ILE/p' chapter-11-regex--
structure.pdb
Output:HELIX 1 hel ILE A
                             18 GLN A
                                            28
HELIX 3 hel ILE A 138 SER A 152 ubuntu@ip-172-31-23-209:~$ sed ' /^
                                   /^H/s/$/***/' chapter-11-regex--structure.pdb
                                            23-Mar-99
HEADER Hydrogenase
                                                       1CFZ***
COMPND
        Hydrogenase Maturating Endopeptidase Hybd From
        ORGANISM_SCIENTIFIC: Escherichia coli
AUTHOR Fritsche, Paschos, Beisel, Boeck & Huber
REMARK NCBI PDB FORMAT VERSION 5.0
                  MET ARG ILE LEU VAL LEU GLY VAL GLY ASN
THR ASP GLU ALA ILE GLY VAL ARG ILE VAL
SEQRES 1 A
             162
SEQRES 2 A
             162
SEQRES 3 A
             162
                  GLU GLN ARG TYR ILE LEU PRO ASP TYR VAL
SEQRES 4 A
             162
                  ASP GLY GLY THR ALA GLY MET GLU LEU LEU
                                    28***
       1 hel ILE A
HELIX
                       18
                           GLN A
                                   107***
                       92
HELIX
       2 hel PRO A
                           THR A
                                   152***
       3 hel ILE A
                     138
HELIX
                           SER A
       1 str ARG A
2 str ARG A
                           ASN A
                                   10
SHEET
                       29
                           LEU A
                                   32
SHEET
SHEET
       3 str TYR A
                       35
                           THR A
                                   43
            MET A 1 48.865
MET A 1 49.879
                              25.394
ATOM 1
        C
                                       51.393
                                                1.00 54.58 C
                                       50.932
                                                1.00 59.61 C
                              24.359
ATOM 2
        CA
ATOM 3
            MET A 1 49.248
                              23.457
                                       49.877
                                                1.00 62.37 C
        CB
                              24.403
ATOM 4
            MET A 1 51.349
                                                1.00 71.39 C
                                       47.765
        CE
ATOM 5
        CG
             MET A 1 48.708
                              24.106
                                       48.629
                                                1.00 66.70 C
             MET A 1 50.347
                              23.578
ATOM 6
                                       52.116
                                                1.00 62.03 N
        N
                              25.011
             MET A 1 47.875
ATOM 7
        0
                                       52.020
                                                1.00 54.99 o
```

8 MOTA

SD

MET A 1 49.731

23.948

47.163

1.00 77.15 S

```
Command:ubuntu@ip-172-31-23-209:~$ sed '/SEQRES/s/^.*$/SEQ/' chapter-11-regex-structure.pdb

Output:HEADER Hydrogenase 23-Mar-99 1CFZ
```

```
23-Mar-99
                Hydrogenase Maturating Endopeptidase Hybd From
                 ORGANISM_SCIENTIFIC: Escherichia coli
AUTHOR Fritsche, Paschos, Beisel, Boeck & Huber REMARK NCBI PDB FORMAT VERSION 5.0
 SEQ
 SEQ
 SEQ
SEQ
HELIX
               1 hel ILE A
                                            18
                                                     GLN A
               2 hel PRO A
                                             92
                                                                    107
HELIX
                                                     THR A
               3 hel ILE A
                                          138
                                                     SER A
                                                                    152
 HELIX
                                                                    10
 SHEET
               1 str ARG A
                                                     ASN A
               2 str ARG A
                                             29
 SHEET
                                                     LEU A
                                                                    32
 SHEET
                3 str TYR A
                                             35
                                                     THR A
                                                                    43
                         MET A 1 48.865
 ATOM 1
                 C
                                                           25.394
                                                                             51.393
                                                                                             1.00 54.58 C
                         MET A 1 49.879
                                                                             50.932
                                                                                             1.00 59.61 c
ATOM 2
                                                           24.359
                 CA
 ATOM 3
                         MET A 1 49.248
                                                           23.457
                                                                            49.877
                                                                                             1.00 62.37 C
                 CB
 ATOM 4
                         MET A 1 51.349
                                                           24.403
                                                                                             1.00 71.39 C
                 CE
                                                                            47.765
                         MET A 1
 ATOM 5
                 CG
                                          48.708
                                                            24.106
                                                                            48.629
                                                                                             1.00 66.70
                         MET A 1 50.347
 ATOM 6
                                                           23.578
                                                                            52.116
                                                                                             1.00 62.03 N
                 Ν
 ATOM 7
                         MET A 1 47.875
                                                           25.011
                                                                            52.020
                                                                                             1.00 54.99 o
                 0
ATOM 8
                 SD
                         MET A 1 49.731
                                                           23.948
                                                                            47.163
                                                                                             1.00 77.15 S
H)
 Command:ubuntu@ip-172-31-23-209:~$ curl -0
https://ilearn.mq.edu.au/pluginfile.php/5698318/mod_resource/content/1/jabberwocky.txt
Output: % Total
                                          % Received % Xferd Average Speed
                                                                                                                       Time
                                                                                                                                        Time
                                                                                                                                                           Time
                                                                                                                                                                      Current
                                                                      Dload Upload
                                                                                                                                           Left Speed
                                                                                                       Total
                                                                                                                        Spent
                                        5864
                                                         0
                                                                               9613
100 58/1m64
                                  0
Command:ubuntu@ip-172-31-23-209:~\ sed \ /\\$/d\ jabberwocky.txt
Output:<!DOCTYPE html>
<html lang="en" xml:lang="en">
<meta http-equiv="Content-Type" content="text/html; charset=utf-8" /><script
type="text/javascript">window.NREUM||(NREUM={}),__nr_require=function(e,n,t){function
r(t){if(!n[t]){var o=n[t]={exports:{}};e[t][0].call(o.exports,function(n){var
o=e[t][1][n];return r(o||n)},o,o.exports)}return n[t].exports}if("function"==typeof
__nr_require)return __nr_require;for(var o=0;o<t.length;o++)r(t[o]);return r}({1:[function(e,n,t){function(c,n,t){function(e,n,t){return function(){return}}}}}
i(e,[c.now()].concat(u(arguments)),n?null:this,t),n?void 0:this}}var
i=e("handle"),a=e(3),u=e(4),f=e("ee").get("tracer"),c=e("loader"),s=NREUM;"undefined"=
=typeof window.newrelic&&(newrelic=s);var
p=["setPageViewName", "setCustomAttribute", "setErrorHandler", "finished", "addToTrace", "inlineHit", "addRelease"], d="api-", l=d+"ixn-
";a(p,function(e,n){s[n]=o(d+n,!0,"api")}),s.addPageAction=o(d+"addPageAction",!0),s.s
etCurrentRouteName=o(d+"routeName",!0),n.exports=newrelic,s.interaction=function(){ret
urn(new r).get()};var m=r.prototype={createTracer:function(e,n){var t={},r=this,o="function"==typeof n;return i(]+"tracer",[c.now(),e,t],r),function(){if(f.emit((o?"":"no-")+"fn-start",[c.now(),r,o],t),o)try{return n.apply(this,arguments)}catch(e)
i(]+"tracer",[c.now(),e,t],r),function(){if(f.emit((o?"":"no-")+"fn-start",[c.now(),r,o],t),o)try{return n.apply(this,arguments)}catch(e){throw f.emit("fn-err",[arguments,this,e],t),e}finally{f.emit("fn-
f.emit("fn-err",[arguments,this,e],t),e}finally{f.emit("fn-
end",[c.now()],t)}}};a("actionText,setName,setAttribute,save,ignore,onEnd,getContext,
end,get".split(","),function(e,n){m[n]=o(l+n)}),newrelic.noticeError=function(e,n){"st
ring"==typeof e&{e=new
ring"==typeof e&&(e=new Error(e)),i("err",[e,c.now(),!1,n])},{}],2:[function(e,n,t){function r(e,n){if(!o)return!1;if(e!==o)return!1;if(!n)return!0;if(!i)return!1;for(var t=i.split("."),r=n.split("."),a=0;a<r.length;a++)if(r[a]!==t[a])return!1;return!0}var o=null,i=null,a=/version\/(\S+)\s+Safari/;if(navigator.userAgent){var u=navigator.userAgent,f=u.match(a);f&&u.indexof("Chrome")===-1&&u.indexof("Chromium")===-1&&(o="Safari",i=f[1])}n.exports={agent:o,version:i,match:r}},{}],3:[function(e,n,t){function r(e,n){var t=[],r="",i=0;for(r in e)o.call(e,r)&&(t[i]=n(r,e[r]),i+=1);return t}var o=Object.prototype.hasOwnProperty;n.exports=r},{}],4:[function(e,n,t){function r(e,n,t){n||(n=0),"undefined"==typeof t&&(t=e?e.length:0);for(var r=-1,o=t-1)}}
```

```
\label{eq:normalizero} $$n\mid [0,i=Array(o<0?0:o);++r<o;]i[r]=e[n+r];$ return $$i\}n.exports=r\}, $$\{],5:[function(e,n,t)\{n.exports=\{exists:"undefined"!=typeofwindow.performance&window.performance.timing&&"undefined"!=typeofwindow.performance.timing&&"undefined"!=typeofwindow.performance.timing&&"undefined"!=typeofwindow.performance.timing&&"undefined"!=typeofwindow.performance.timing&&"undefined"!=typeofwindow.performance.timing&&"undefined"!=typeofwindow.performance.timing&&"undefined"!=typeofwindow.performance.timing&&"undefined"!=typeofwindow.performance.timing&&"undefined"!=typeofwindow.performance.timing&&"undefined"!=typeofwindow.performance.timing&&"undefined"!=typeofwindow.performance.timing&&"undefined"!=typeofwindow.performance.timing&&"undefined"!=typeofwindow.performance.timing&&"undefined"!=typeofwindow.performance.timing&&"undefined"!=typeofwindow.performance.timing&&"undefined"!=typeofwindow.performance.timing&&"undefined"!=typeofwindow.performance.timing&&"undefined"!=typeofwindow.performance.timing&&"undefined"!=typeofwindow.performance.timing&&"undefined"!=typeofwindow.performance.timing&&"undefined"!=typeofwindow.performance.timing&&"undefined"!=typeofwindow.performance.timing&&"undefined"!=typeofwindow.performance.timing&&"undefined"!=typeofwindow.performance.timing&&"undefined"!=typeofwindow.performance.timing&&"undefined"!=typeofwindow.performance.timing&&"undefined"!=typeofwindow.performance.timing&&"undefined"!=typeofwindow.performance.timing&&"undefined"!=typeofwindow.performance.timing&&"undefined"!=typeofwindow.performance.timing&&"undefined "!"undefined "!"undefin
 window.performance.timing.wavindow.performance.timing&variation !=typeof window.performance.timing.navigationStart}},{}],ee:[function(e,n,t){function r(){}function o(e){function n(e){return e&e instanceof r?e:e?f(e,u,i):i()}function t(t,r,o,i){if(!d.aborted||i){e&e(t,r,o);for(var a=n(o),u=v(t),f=u.length,c=0;c<f;c++)u[c].apply(a,r);var p=s[y[t]];return p&p.yeb,[b,t,r,a]),a}function l(e,n){h[e]=v(e).concat(n)}function m(e,n){var the local inf(t) for(var n=0);ret length replice (n, 1)}function v(e){not urn
p&&p.push([b,t,r,a]),a}{function | (e,n){h[e]=v(e).concat(n)}{function | m(e,n){var} t=h[e];if(t)for(var r=0;r<t.length;r++)t[r]===n&&t.splice(r,1)}{function | v(e){return | h[e]||[]}{function | g(e){return | p[e]=p[e]||o(t)}{function | w(e,n){c(e,function(e,t){n=n||"feature",y[t]=n,n | in | s||(s[n]=[])})}var h={},y={},b={on:1,addEventListener:1,removeEventListener:m,emit:t,get:g,listeners:v,context:n,buffer:w,aborted:!1};return | b}function | i(){return | new | r}function | a(){(s.api||s.feature)&&(d.aborted:!0,s=d.backlog={})}var | u="nr@context",f=e("gos"),c=e(3),s={},p={},d=n.exports=o();d.backlog=s},{}],gos:[function(e,n,t){function | r(e,n,t){if(o.call(e,n))}return | e[n];var | r=t();if(Object.defineProperty&Object.keys)try{return | object.defineProperty(e.n.{value:r.writable:!0.enumerable:!1}).r}catch(i){}}return
    Object.defineProperty(e,n,{value:r,writable:!0,enumerable:!1}),r}catch(i){}return
   e[n]=r,r}var
   o=Object.prototype.hasOwnProperty;n.exports=r},{}],handle:[function(e,n,t){function
 o=object.prototype.nasownProperty;n.exports=r},{}],nandle:[function(e,n,t){function r(e,n,t,r){o.buffer([e],r),o.emit(e,n,t)}var o=e("ee").get("handle");n.exports=r,r.ee=o},{}],id:[function(e,n,t){function r(e){var n=typeof e;return!e||"object"!==n&&"function"!==n?-1:e===window?0:a(e,i,function(){return o++})}var o=1,i="nr@id",a=e("gos");n.exports=r},{}],loader:[function(e,n,t){function r(){if(!E++){var e=x.info=NREUM.info,n=l.getElementsByTagName("script")[0];if(setTimeout(s.abort,3e4),!
      (e&&e.licenseKey&&e.applicationID&&n))return
   s.abort(); c(y, function(n,t){e[n]||(e[n]=t)}), f("mark", ["onload", a()+x.offset], null, "apin"), to a substitute of the substitute of 
  O.exists&&performance.now?Math.round(performance.now()):(u=Math.max((new Date).getTime(),u))-x.offset}var u=(new Date).getTime(),f=e("handle"),c=e(3),s=e("ee"),p=e(2),d=window,l=d.document,m="addEven tListener",v="attachEvent",g=d.XMLHttpRequest,w=g&&g.prototype;NREUM.o={ST:setTimeout, SI:d.setImmediate,CT:clearTimeout,XHR:g,REQ:d.Request,EV:d.Event,PR:d.Promise,MO:d.Mut ationObserver};var h=""+location,y={beacon:"bam.nr-data.net",errorBeacon:"bam.nr-data.net",agent:"js-agent.newrelic.com/nr-1123.min.js"},b=g&&w&&w[m]&&!/CriOS/.test(navigator.userAgent),x=n.exports={offset:u,now:a,origin:h,features:{},xhrwrappable:b,userAgent:p};e(1),l[m]?(l[m]("DOMContentLoaded",i,!1),d[m]("load",r,!1)):(l[v]("onreadystatechange",o),d[v]("onload",r)),f("mark",["firstbyte",u],null,"api");var E=0,O=e(5)},{}]],{},["loader"]);</script></head></head></head></head></script></script></head></head></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></scrip
  </head><body><div style="margin-top: 3em; margin-left:auto; margin-right:auto; text-
align:center;">This page should automatically redirect. If nothing is happening please
use the continue link below.<br/><br/>><a</pre>
 href="https://ilearn.mq.edu.au/login/index.php">Continue</a></div><script type="text/javascript">window.NREUM||(NREUM={});NREUM.info={"beacon":"bam.nr-data.net","licenseKey":"d6bb71fb66","applicationID":"3373525,105687326","transactionName":"YVMHYkVQWkIAUERQDFgZMEReHkRdFFRZVwVfwgAYR11E","queueTime":0,"applicationTime":79, "atts":"TRQEFA1KSUw=","errorBeacon":"bam.nr-data.net","agent":""}</script></body></html>u
```