## **Appendix 1**: Entrez esearch-efetch source code

#!/usr/local/bin/perl -w

# =======================================================================

#

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#

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#

# File Description: eSearch/eFetch calling example

#

# ---------------------------------------------------------------------

# Subroutine to prompt user for variables in the next section

sub ask\_user {

print "$\_[0] [$\_[1]]: ";

my $rc = <>;

chomp $rc;

if($rc eq "") { $rc = $\_[1]; }

return $rc;

}

# ---------------------------------------------------------------------

# Define library for the 'get' function used in the next section.

# $utils contains route for the utilities.

# $db, $query, and $report may be supplied by the user when prompted;

# if not answered, default values, will be assigned as shown below.

use LWP::Simple;

my $utils = "https://www.ncbi.nlm.nih.gov/entrez/eutils";

my $db = ask\_user("Database", "Pubmed");

my $query = ask\_user("Query", "zanzibar");

my $report = ask\_user("Report", "abstract");

# ---------------------------------------------------------------------

# $esearch cont?ins the PATH & parameters for the ESearch call

# $esearch\_result containts the result of the ESearch call

# the results are displayed ?nd parsed into variables

# $Count, $QueryKey, and $WebEnv for later use and then displayed.

my $esearch = "$utils/esearch.fcgi?" .

"db=$db&retmax=1&usehistory=y&term=";

my $esearch\_result = get($esearch . $query);

print "\nESEARCH RESULT: $esearch\_result\n";

$esearch\_result =~

m|<Count>(\d+)</Count>.\*<QueryKey>(\d+)</QueryKey>.\*<WebEnv>(\S+)</WebEnv>|s;

my $Count = $1;

my $QueryKey = $2;

my $WebEnv = $3;

print "Count = $Count; QueryKey = $QueryKey; WebEnv = $WebEnv\n";

# ---------------------------------------------------------------------

# this area defines a loop which will display $retmax citation results from

# Efetch each time the the Enter Key is pressed, after a prompt.

my $retstart;

my $retmax=3;

for($retstart = 0; $retstart < $Count; $retstart += $retmax) {

my $efetch = "$utils/efetch.fcgi?" .

"rettype=$report&retmode=text&retstart=$retstart&retmax=$retmax&" .

"db=$db&query\_key=$QueryKey&WebEnv=$WebEnv";

print "\nEF\_QUERY=$efetch\n";

my $efetch\_result = get($efetch);

print "---------\nEFETCH RESULT(".

($retstart + 1) . ".." . ($retstart + $retmax) . "): ".

"[$efetch\_result]\n-----PRESS ENTER!!!-------\n";

<>;

}