```
A Overview of an E-Utility query
Search query
 Task: Search
 What: Viruses
                             1. Send search query
 Where: Nucleotide
Fetch query
                                                               2. Search Entrez
                         3. Send UIDs
 Task: Fetch
                                                                                         Entrez
                                           E-Utility
 What:
                                                                   PubMed Nucleotide Protein
   UIDs: 123,234,...
 Where: Nucleotide
 Format: FASTA
                           4. Send
                                                             5. Fetch data records
                           fetch query
 >LC431552.1
                             6. Send sequences
 GTTCCATACAGAGACC..
           E-Utility
 Query
                          POST parameter
                          db='nucleotide'&term='viruses[ORGN]'
 Search
           esearch.fcgi
                          db='nucleotide'&rettype=fasta&id='123,234,..'
 Fetch
           efetch.fcgi
B Overview of an E-Utility query using the Entrez History server
Search query
 Task: Search
 What: Viruses
                             1. Send search query
 Where: Nucleotide
Fetch query
                                                               2. Search Entrez
                           5. Send
 Task: Fetch
                           reference
                                                                                         Entrez
                                           E-Utility
 What:
                                                                   PubMed Nucleotide Protein
   WebEnv: 2743NCID
   query_key: 1
                                                         4. Return
 Where: Nucleotide
                                                                          3. Store query
                                                         reference
 Format: FASTA
                          6. Send fetch
                          query
                                                      7. Resolve
                                                      reference
                                                                      WebEnv
                                                                                  query key
                             8. Send sequences
 >LC431552.1
                                                                      2743NCID
 GTTCCATACAGAGACC..
                                                                               History Server
Query
          E-Utility
                         POST parameter
Search
          esearch.fcgi
                         db='nucleotide'&term='viruses[ORGN]&usehistory=y'
Feacth
                         WebEnv='2743NCID'&query_key=1&rettype=fasta'
          efetch.fcgi
C Entrezpy query and requests
                   Requests (n=4)
 Entrezpy
                                                  EutilsAnalyzer()
 query
 (n=9)
             8
D Entrez Direct command for the example query
 esearch -db nucleotide -query "viruses[organism]" | efetch -format fasta
E Implementing the example query with Wally
1 import entrezpy.wally
3 w = entrezpy.wally.Wally('email') # Create new Wally instance
                                           # Create new and empty Wally pipeline
4 fetch_ppl = w.new_pipeline()
5 # Add search query to the pipline and store its id
6 sid = fetch_ppl.add_search({'db':'nucleotide',
                                    'term':'viruses[organism]',
                                    'rettype':'count'})
9 # Add fetch query: request sequences in FASTA based on search result
10 fetch_ppl.add_fetch({'retmode':'text', 'rettype':'fasta'}, dependency=sid)
11 w.run(fetch_ppl)
```