QIIME (+ Linux) Workshop 2016

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Day 1: Introduction to Linux

Date: July 8th, 2016, 9 am – 1 pm
Instructors: Jessica Kirkpatrick (HPCBio), Jenny Drnevich (HPCBio)
Assistant: Shoham Das
Location: 607 IGB

Class Materials:
• Presentation
• Linux cheat sheet
• Getting on a UNIX-based terminal
• Appendix
• Class Video

Additional Linux Resources:
• Beginner Linux - self-guided tutorials for extra practice
  • Tutorial from the book UNIX and Perl to the RESCUE!
  • Parts 1 and 2 cover UNIX
    • http://korflab.ucdavis.edu/Unix_and_Perl/current.html#part2
  • SIB tutorial
    • If it asks you to log in, just log in as a “guest user”
    • Click on “UNIX elearning module” at the bottom to get started
    • http://edu.isb-sib.ch/course/view.php?id=82
  • University of Surrey tutorial
    • http://www.ee.surrey.ac.uk/Teaching/Unix/
  • Ryan’s Tutorials
    • http://ryanstutorials.net/linuxtutorial/
• Linux Books
  • UNIX and Perl to the RESCUE! by Keith Bradnam & Ian Knorff
  • Developing Bioinformatics Computer Skills by Cynthia Gibas & Per Jambeck
  • Linux Pocket Guide by Danial J. Barrett
  • Beginning Shell Scripting by Eric Foster-Johnson, John C. Welch, & Micah Anderson
  • Learning the bash Shell by Cameron Newham
  • bash Cookbook by Carl Albing, JP Vossen, & Cameron Newham
• Linux-related Software

Day 2: Introduction to QIIME & Preprocessing

Date: July 11th, 2016, 9 am – 1 pm
Instructors: Jessica Kirkpatrick (HPCBio), Chris Wright (CBC), Jenny Drnevich (HPCBio)
Assistant: Shoham Das
Location: 607 IGB

Class Materials:
Slides:
• Chris Wright’s presentation
• Introduction to QIIME and pre-processing: presentation

Example dataset files:
• Condensed sequencing report
• FASTQC report for forward reads of archaea dataset

Additional Files
• Upstream analysis homework
• Class Video
• Detailed QIIME tutorial

Day 3: Basic QIIME Analyses

Date: July 13th, 2016, 9 am – 1 pm
Instructors: Jessica Kirkpatrick (HPCBio), Jenny Drnevich (HPCBio)
Assistant: Shoham Das
Location: 607 IGB

Class Materials:
Slides:
• Basic analyses in QIIME: presentation

Additional Files
• Full analyses homework
• Full analyses homework ANSWER KEY
• The following software allows remote access from a Windows computer to a Linux based terminal. Mac already has a UNIX-based terminal pre-installed. You can find it in Applications ->
Utilities -> Terminal
  • MobaXterm: http://mobaxterm.mobatek.net/
  • PuTTY: http://www.putty.org/

• Biocluster Resources
  • Biocluster help page
  • Campus cluster help page
  • How to submit a cluster job
  • qsub script generator

• Class Video
• Detailed QIIME tutorial

Day 4: Statistical Analyses

Date: July 15th, 2016, 9 am – 1 pm

Instructors: Jenny Drnevich (HPCBio), Jessica Kirkpatrick (HPCBio)

Assistant: Shoham Das

Location: 607 IGB

Class Materials:

Slides:

  • Statistical Analyses in QIIME - updated

Additional Links

  • Class Video
  • QIIME 2.0 site; blog announcement
  • McMurdie and Holmes, 2014
  • Bioconductor workflow for full microbiome analyses