**Calendar**

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| --- | --- | --- | --- | --- | --- |
| **Week** | **Date** | **Lecture** | **Reading** | **Handout** | **Assignment** |
| 1 | Wed 1/21 | Functions  ([Video](https://www.youtube.com/watch?v=Rw6VyLPr128&list=PL6BsET-8jgYUQTbU_HkEYLmcGsTX-DFNl&vq=hd1080)) ([1pp](http://cs61a.org/assets/slides/01-Functions_1pp.pdf)) ([1pps](http://cs61a.org/assets/slides/01-Functions_1pps.pdf)) ([8pp](http://cs61a.org/assets/slides/01-Functions_8pp.pdf)) ([01.py](http://cs61a.org/assets/slides/01.py)) | [1.1](http://composingprograms.com/pages/11-getting-started.html) [1.2](http://composingprograms.com/pages/12-elements-of-programming.html) | [Lab 0: Intro to UNIX](http://cs61a.org/lab/lab00/) [Lab 1: Your own machine](http://cs61a.org/lab/lab01/) |  |
| Fri 1/23 | Names  ([Video](https://www.youtube.com/watch?v=j0ojOSce4zA&list=PL6BsET-8jgYWjn83MdxVsfiEOPPt_md6_&vq=hd1080)) ([1pp](http://cs61a.org/assets/slides/02-Names_1pp.pdf)) ([1pps](http://cs61a.org/assets/slides/02-Names_1pps.pdf)) ([8pp](http://cs61a.org/assets/slides/02-Names_8pp.pdf)) ([02.py](http://cs61a.org/assets/slides/02.py)) | [1.3](http://composingprograms.com/pages/13-defining-new-functions.html) [1.4](http://composingprograms.com/pages/14-designing-functions.html) | [Discussion 0: Lost on the Moon](http://cs61a.org/disc/disc00.pdf) ([Solutions](http://cs61a.org/disc/disc00_sol.pdf)) | [Homework 1](http://cs61a.org/hw/hw01/) (due Wed 1/28) ([Solutions](http://cs61a.org/hw-sol/hw01/)) |
| 2 | Mon 1/26 | Control  ([Video](https://www.youtube.com/watch?v=IPec2A7j2bY&list=PL6BsET-8jgYXZ7aa9wE195b94NPteCoIr&vq=hd1080)) ([1pp](http://cs61a.org/assets/slides/03-Control_1pp.pdf)) ([1pps](http://cs61a.org/assets/slides/03-Control_1pps.pdf)) ([8pp](http://cs61a.org/assets/slides/03-Control_8pp.pdf)) ([03.py](http://cs61a.org/assets/slides/03.py)) | [1.5](http://composingprograms.com/pages/15-control.html) |  |  |
| Wed 1/28 | Higher-Order Functions  ([Video](https://www.youtube.com/watch?v=WBAUNrsXan4&list=PL6BsET-8jgYVHi8o64uu82USYJg4B0Ezr&vq=hd1080)) ([1pp](http://cs61a.org/assets/slides/04-Higher-Order_Functions_1pp.pdf)) ([1pps](http://cs61a.org/assets/slides/04-Higher-Order_Functions_1pps.pdf)) ([8pp](http://cs61a.org/assets/slides/04-Higher-Order_Functions_8pp.pdf)) ([04.py](http://cs61a.org/assets/slides/04.py)) | [1.6](http://composingprograms.com/pages/16-higher-order-functions.html) | [Lab 2: Functions and Control Structures](http://cs61a.org/lab/lab02/) | [Quiz 1](http://cs61a.org/hw/quiz01/) (due Thu 1/29) ([Solutions](http://cs61a.org/hw-sol/quiz01/)) [Hog](http://cs61a.org/proj/hog/) (due Thu 2/5) |
| Fri 1/30 | Environments  ([Video](https://www.youtube.com/watch?v=1P2UgdAWwYg&list=PL6BsET-8jgYXVN4owr3uTsZlSUhjawHTD&vq=hd1080)) ([1pp](http://cs61a.org/assets/slides/05-Environments_1pp.pdf)) ([1pps](http://cs61a.org/assets/slides/05-Environments_1pps.pdf)) ([8pp](http://cs61a.org/assets/slides/05-Environments_8pp.pdf)) ([05.py](http://cs61a.org/assets/slides/05.py)) | [1.6](http://composingprograms.com/pages/16-higher-order-functions.html) | [Discussion 1: Control Structures and Higher Order Functions](http://cs61a.org/disc/disc01.pdf) ([Solutions](http://cs61a.org/disc/disc01_sol.pdf)) | [Homework 2](http://cs61a.org/hw/hw02/) (due Mon 2/2) ([Solutions](http://cs61a.org/hw-sol/hw02/)) |
| 3 | Mon 2/2 | Recursion  ([Video](https://www.youtube.com/watch?v=B2_8t2jyvX0&list=PL6BsET-8jgYV7Bz0fJk6SGhPpIepseBIi&vq=hd1080)) ([1pp](http://cs61a.org/assets/slides/06-Recursion_1pp.pdf)) ([1pps](http://cs61a.org/assets/slides/06-Recursion_1pps.pdf)) ([8pp](http://cs61a.org/assets/slides/06-Recursion_8pp.pdf)) ([06.py](http://cs61a.org/assets/slides/06.py)) | [1.7](http://composingprograms.com/pages/17-recursive-functions.html) |  |  |
| Wed 2/4 | Tree Recursion  ([Video](https://www.youtube.com/watch?v=VYYkJ1OLXBw&list=PL6BsET-8jgYVzv6qNMAyrUp3FGG1rnKrS&vq=hd1080)) ([1pp](http://cs61a.org/assets/slides/07-Tree_Recursion_1pp.pdf)) ([1pps](http://cs61a.org/assets/slides/07-Tree_Recursion_1pps.pdf)) ([8pp](http://cs61a.org/assets/slides/07-Tree_Recursion_8pp.pdf)) ([07.py](http://cs61a.org/assets/slides/07.py)) | [1.7](http://composingprograms.com/pages/17-recursive-functions.html) | [Lab 3: Recursion](http://cs61a.org/lab/lab03/) | [Hog Contest](http://cs61a.org/proj/hog_contest/) (due Wed 2/18) |
| Fri 2/6 | Function Examples  ([Video](https://www.youtube.com/watch?v=bi_2gAetCiI&list=PL6BsET-8jgYWxsojjxmDuB6prRFy9_EsN&vq=hd1080)) ([1pp](http://cs61a.org/assets/slides/08-Function_Examples_1pp.pdf)) ([1pps](http://cs61a.org/assets/slides/08-Function_Examples_1pps.pdf)) ([8pp](http://cs61a.org/assets/slides/08-Function_Examples_8pp.pdf)) ([08.py](http://cs61a.org/assets/slides/08.py)) |  | [Discussion 2: Recursion](http://cs61a.org/disc/disc02.pdf) ([Solutions](http://cs61a.org/disc/disc02_sol.pdf)) |  |
| 4 | Mon 2/9 | No Lecture: [Midterm 1](http://cs61a.org/exams/midterm1.html) |  |  |  |
| Wed 2/11 | Data Abstraction  ([Video](https://www.youtube.com/watch?v=nzP3nJ2np8w&list=PL6BsET-8jgYWdztJo4021KHKQhp2v-WHB&vq=hd1080)) ([1pp](http://cs61a.org/assets/slides/09-Data_Abstraction_1pp.pdf)) ([1pps](http://cs61a.org/assets/slides/09-Data_Abstraction_1pps.pdf)) ([8pp](http://cs61a.org/assets/slides/09-Data_Abstraction_8pp.pdf)) ([09.py](http://cs61a.org/assets/slides/09.py)) | [2.1](http://composingprograms.com/pages/21-introduction.html) [2.2](http://composingprograms.com/pages/22-data-abstraction.html) |  | [Homework 3](http://cs61a.org/hw/hw03/) (due Thu 2/19) ([Solutions](http://cs61a.org/hw-sol/hw03/)) |
| Fri 2/13 | Sequences  ([Video](https://www.youtube.com/watch?v=R0o37yJ1PP0&list=PL6BsET-8jgYWxWrCzuIQL6jqu6WW3K409&vq=hd1080)) ([1pp](http://cs61a.org/assets/slides/10-Sequences_1pp.pdf)) ([1pps](http://cs61a.org/assets/slides/10-Sequences_1pps.pdf)) ([8pp](http://cs61a.org/assets/slides/10-Sequences_8pp.pdf)) ([10.py](http://cs61a.org/assets/slides/10.py)) | [2.3](http://composingprograms.com/pages/23-sequences.html) | [Discussion 3: Data Abstraction](http://cs61a.org/disc/disc03.pdf) ([Solutions](http://cs61a.org/disc/disc03_sol.pdf)) |  |
| 5 | Mon 2/16 | No Lecture: President's Day |  |  | [Maps](http://cs61a.org/proj/maps/) (due Thu 2/26) |
| Wed 2/18 | Trees  ([Video](https://www.youtube.com/watch?v=c3xKjzbSxqg&list=PL6BsET-8jgYXz1omz0y0R0Oul2UeuZ4xa&vq=hd1080)) ([1pp](http://cs61a.org/assets/slides/11-Trees_1pp.pdf)) ([1pps](http://cs61a.org/assets/slides/11-Trees_1pps.pdf)) ([8pp](http://cs61a.org/assets/slides/11-Trees_8pp.pdf)) ([11.py](http://cs61a.org/assets/slides/11.py)) | [2.3](http://composingprograms.com/pages/23-sequences.html) | [Lab 4: Lists](http://cs61a.org/lab/lab04/) | [Homework 4](http://cs61a.org/hw/hw04/) (due Mon 2/23) ([Solutions](http://cs61a.org/hw-sol/hw04/)) |
| Fri 2/20 | Mutable Values  ([Video](https://www.youtube.com/watch?v=Q-CewobDFZM&list=PL6BsET-8jgYXU-Q8BqLp6irX3mIhglZfW&vq=hd1080)) ([1pp](http://cs61a.org/assets/slides/12-Mutable_Values_1pp.pdf)) ([1pps](http://cs61a.org/assets/slides/12-Mutable_Values_1pps.pdf)) ([8pp](http://cs61a.org/assets/slides/12-Mutable_Values_8pp.pdf)) ([12.py](http://cs61a.org/assets/slides/12.py)) | [2.4](http://composingprograms.com/pages/24-mutable-data.html) | [Discussion 4: Trees](http://cs61a.org/disc/disc04.pdf) ([Solutions](http://cs61a.org/disc/disc04_sol.pdf)) |  |
| 6 | Mon 2/23 | Mutable Functions  ([Video](https://www.youtube.com/watch?v=w1TQ0yd8pG0&index=1&list=PL6BsET-8jgYXIj9GsmapI3AqDlBcH9_p5&vq=hd1080)) ([1pp](http://cs61a.org/assets/slides/13-Mutable_Functions_1pp.pdf)) ([1pps](http://cs61a.org/assets/slides/13-Mutable_Functions_1pps.pdf)) ([8pp](http://cs61a.org/assets/slides/13-Mutable_Functions_8pp.pdf)) ([13.py](http://cs61a.org/assets/slides/13.py)) | [2.4](http://composingprograms.com/pages/24-mutable-data.html) |  |  |
| Wed 2/25 | Objects  ([Video](https://www.youtube.com/watch?v=A_EFoT4cBSk&list=PL6BsET-8jgYViPUL3vs-H-xExWFBVFnwu&vq=hd1080)) ([1pp](http://cs61a.org/assets/slides/14-Objects_1pp.pdf)) ([1pps](http://cs61a.org/assets/slides/14-Objects_1pps.pdf)) ([8pp](http://cs61a.org/assets/slides/14-Objects_8pp.pdf)) ([14.py](http://cs61a.org/assets/slides/14.py)) | [2.5](http://composingprograms.com/pages/25-object-oriented-programming.html) | [Lab 5: Trees and Dictionaries](http://cs61a.org/lab/lab05/) | [Homework 5](http://cs61a.org/hw/hw05/) (due Wed 3/4) ([Solutions](http://cs61a.org/hw-sol/hw05/)) |
| Fri 2/27 | Inheritance  ([Video](https://www.youtube.com/watch?v=BCNE7M-SjWM&list=PL6BsET-8jgYV2xrN6FtkJ7cSg5eksJyWC&vq=hd1080)) ([1pp](http://cs61a.org/assets/slides/15-Inheritance_1pp.pdf)) ([1pps](http://cs61a.org/assets/slides/15-Inheritance_1pps.pdf)) ([8pp](http://cs61a.org/assets/slides/15-Inheritance_8pp.pdf)) ([15.py](http://cs61a.org/assets/slides/15.py)) | [2.5](http://composingprograms.com/pages/25-object-oriented-programming.html) | [Discussion 5: Mutation](http://cs61a.org/disc/disc05.pdf) ([Solutions](http://cs61a.org/disc/disc05_sol.pdf)) | [Ants](http://cs61a.org/proj/ants/) (due Thu 3/12) |
| 7 | Mon 3/2 | Representation  ([Video](https://www.youtube.com/watch?v=zkkS_9-fyzo&list=PL6BsET-8jgYUMZOU1BmOEu0OS0LVPT080&vq=hd1080)) ([1pp](http://cs61a.org/assets/slides/16-Representation_1pp.pdf)) ([1pps](http://cs61a.org/assets/slides/16-Representation_1pps.pdf)) ([8pp](http://cs61a.org/assets/slides/16-Representation_8pp.pdf)) ([16.py](http://cs61a.org/assets/slides/16.py)) | [2.7](http://composingprograms.com/pages/27-object-abstraction.html) |  |  |
| Wed 3/4 | Generic Functions  ([Video](https://www.youtube.com/watch?v=wlu28Y0FpKU&list=PL6BsET-8jgYXRvv3OYY1XBuCpD0LwYT2z&vq=hd1080)) ([1pp](http://cs61a.org/assets/slides/17-Generic_Functions_1pp.pdf)) ([1pps](http://cs61a.org/assets/slides/17-Generic_Functions_1pps.pdf)) ([8pp](http://cs61a.org/assets/slides/17-Generic_Functions_8pp.pdf)) ([17.py](http://cs61a.org/assets/slides/17.py)) | [2.7](http://composingprograms.com/pages/27-object-abstraction.html) | [Lab 6: Object Oriented Programming](http://cs61a.org/lab/lab06/) | [Quiz 2](http://cs61a.org/hw/quiz02/) (due Thu 3/5) ([Solutions](http://cs61a.org/hw-sol/quiz02/)) |
| Fri 3/6 | Composition  ([Video](https://www.youtube.com/watch?v=yC4WPw_6ehY&list=PL6BsET-8jgYUI1li1uY4-htTxhxbVhZ1i&vq=hd1080)) ([1pp](http://cs61a.org/assets/slides/18-Composition_1pp.pdf)) ([1pps](http://cs61a.org/assets/slides/18-Composition_1pps.pdf)) ([8pp](http://cs61a.org/assets/slides/18-Composition_8pp.pdf)) ([18.py](http://cs61a.org/assets/slides/18.py)) | [2.9](http://composingprograms.com/pages/29-recursive-objects.html) | [Discussion 6: Object Oriented Programming and Interfaces](http://cs61a.org/disc/disc06.pdf)([Solutions](http://cs61a.org/disc/disc06_sol.pdf)) |  |
| 8 | Mon 3/9 | Hierarchy  ([Video](https://www.youtube.com/watch?v=DWhsOSHjY98&list=PL6BsET-8jgYVkszPu32UP3S3m0BsyGbNz&vq=hd1080)) ([1pp](http://cs61a.org/assets/slides/19-Hierarchy_1pp.pdf)) ([1pps](http://cs61a.org/assets/slides/19-Hierarchy_1pps.pdf)) ([8pp](http://cs61a.org/assets/slides/19-Hierarchy_8pp.pdf)) ([19.py](http://cs61a.org/assets/slides/19.py)) | [2.9](http://composingprograms.com/pages/29-recursive-objects.html) |  | [Homework 6](http://cs61a.org/hw/hw06/) (due Mon 3/16) ([Solutions](http://cs61a.org/hw-sol/hw06/)) |
| Wed 3/11 | Growth  ([Video](https://www.youtube.com/watch?v=nXHvSlu-3rU&list=PL6BsET-8jgYXXQZ13nKazWT5DA4S_x8np&vq=hd1080)) ([1pp](http://cs61a.org/assets/slides/20-Growth_1pp.pdf)) ([1pps](http://cs61a.org/assets/slides/20-Growth_1pps.pdf)) ([8pp](http://cs61a.org/assets/slides/20-Growth_8pp.pdf)) ([20.py](http://cs61a.org/assets/slides/20.py)) | [2.8](http://composingprograms.com/pages/28-efficiency.html) | [Lab 7: Recursive Objects](http://cs61a.org/lab/lab07/) |  |
| Fri 3/13 | Sets  ([Video](https://www.youtube.com/watch?v=eE5gTdwqboI&list=PL6BsET-8jgYVJRDmWN6VbZILZ1nYQTv7Z&vq=hd1080)) ([1pp](http://cs61a.org/assets/slides/21-Sets_1pp.pdf)) ([1pps](http://cs61a.org/assets/slides/21-Sets_1pps.pdf)) ([8pp](http://cs61a.org/assets/slides/21-Sets_8pp.pdf)) ([21.py](http://cs61a.org/assets/slides/21.py)) | [2.9](http://composingprograms.com/pages/29-recursive-objects.html) | [Discussion 7: Orders of Growth](http://cs61a.org/disc/disc07.pdf) ([Solutions](http://cs61a.org/disc/disc07_sol.pdf)) |  |
| 9 | Mon 3/16 | Data Examples  ([Video](https://www.youtube.com/watch?v=ZZhjo3-MGhU&list=PL6BsET-8jgYWuLlTL3jAZHRvl8ArtL0xA&vq=hd1080)) ([1pp](http://cs61a.org/assets/slides/22-Data_Examples_1pp.pdf)) ([1pps](http://cs61a.org/assets/slides/22-Data_Examples_1pps.pdf)) ([8pp](http://cs61a.org/assets/slides/22-Data_Examples_8pp.pdf)) ([22.py](http://cs61a.org/assets/slides/22.py)) |  |  |  |
| Wed 3/18 | No Lecture: [Midterm 2 on Thurs 3/19](http://cs61a.org/exams/midterm2.html) |  | [Lab 8: Sets](http://cs61a.org/lab/lab08/) |  |
| Fri 3/20 | Users  ([Video](https://www.youtube.com/watch?v=kzDpfk8YhlE&list=PL6BsET-8jgYXUY1CgeETigDkANUY97YlF&vq=hd1080)) |  |  |  |
| 10 | Mon 3/23 | No Lecture: Spring Break |  |  |  |
| Wed 3/25 | No Lecture: Spring Break |  |  |  |
| Fri 3/27 | No Lecture: Spring Break |  |  |  |
| 11 | Mon 3/30 | Scheme  ([Video](https://www.youtube.com/watch?v=esIvijecRFw&list=PL6BsET-8jgYXXvyxTuqq_VZwJ739uD3FH&vq=hd1080)) ([1pp](http://cs61a.org/assets/slides/24-Scheme_1pp.pdf)) ([1pps](http://cs61a.org/assets/slides/24-Scheme_1pps.pdf)) ([8pp](http://cs61a.org/assets/slides/24-Scheme_8pp.pdf)) ([24.scm](http://cs61a.org/assets/slides/24.scm)) | [3.1](http://composingprograms.com/pages/31-introduction.html) [3.2](http://composingprograms.com/pages/32-functional-programming.html) |  |  |
| Wed 4/1 | Exceptions  ([Video](https://www.youtube.com/watch?v=fdw4up7yycQ&list=PL6BsET-8jgYV3dBu5A0l5EXimDbSP9YCb&vq=hd1080)) ([1pp](http://cs61a.org/assets/slides/25-Exceptions_1pp.pdf)) ([1pps](http://cs61a.org/assets/slides/25-Exceptions_1pps.pdf)) ([8pp](http://cs61a.org/assets/slides/25-Exceptions_8pp.pdf)) ([25.py](http://cs61a.org/assets/slides/25.py)) | [3.3](http://composingprograms.com/pages/33-exceptions.html) | [Lab 9: Scheme](http://cs61a.org/lab/lab09/) | [Homework 7](http://cs61a.org/hw/hw07/) (due Wed 4/8) ([Solutions](http://cs61a.org/hw-sol/hw07/)) |
| Fri 4/3 | Calculator  ([Video](https://www.youtube.com/watch?v=3ll6sSOg520&index=1&list=PL6BsET-8jgYW1jCx_q32WGFjfXfHExveL&vq=hd1080)) ([1pp](http://cs61a.org/assets/slides/26-Calculator_1pp.pdf)) ([1pps](http://cs61a.org/assets/slides/26-Calculator_1pps.pdf)) ([8pp](http://cs61a.org/assets/slides/26-Calculator_8pp.pdf)) ([26.scm](http://cs61a.org/assets/slides/26.scm)) | [3.4](http://composingprograms.com/pages/34-interpreters-for-languages-with-combination.html) | [Discussion 8: Scheme](http://cs61a.org/disc/disc08.pdf) ([Solutions](http://cs61a.org/disc/disc08_sol.pdf)) |  |
| 12 | Mon 4/6 | Interpreters  ([Video](https://www.youtube.com/watch?v=gm2PUh07bMI&list=PL6BsET-8jgYWor6Lt6IV0Jr4fPG6Ea2bT&vq=hd1080)) ([1pp](http://cs61a.org/assets/slides/27-Interpreters_1pp.pdf)) ([1pps](http://cs61a.org/assets/slides/27-Interpreters_1pps.pdf)) ([8pp](http://cs61a.org/assets/slides/27-Interpreters_8pp.pdf)) | [3.5](http://composingprograms.com/pages/35-interpreters-for-languages-with-abstraction.html) |  | [Scheme](http://cs61a.org/proj/scheme/) (due Thu 4/23) |
| Wed 4/8 | Tail Calls  ([Video](https://www.youtube.com/watch?v=BW8Y_OVpzDo&list=PL6BsET-8jgYWKO_OyHv-xTZMbawPHekIE&vq=hd1080)) ([1pp](http://cs61a.org/assets/slides/28-Tail_Calls_1pp.pdf)) ([1pps](http://cs61a.org/assets/slides/28-Tail_Calls_1pps.pdf)) ([8pp](http://cs61a.org/assets/slides/28-Tail_Calls_8pp.pdf)) ([28.scm](http://cs61a.org/assets/slides/28.scm)) | [3.5](http://composingprograms.com/pages/35-interpreters-for-languages-with-abstraction.html) | [Lab 10: Interpreters](http://cs61a.org/lab/lab10/) | [Quiz 3](http://cs61a.org/hw/quiz03/) (due Thu 4/9) ([Solutions](http://cs61a.org/hw-sol/quiz03/)) |
| Fri 4/10 | Iterators  ([Video](https://www.youtube.com/watch?v=AWhoY2oZVfo&list=PL6BsET-8jgYWKPC0V2hmBloEXr7sdAg-v&vq=hd1080)) ([1pp](http://cs61a.org/assets/slides/29-Iterators_1pp.pdf)) ([1pps](http://cs61a.org/assets/slides/29-Iterators_1pps.pdf)) ([8pp](http://cs61a.org/assets/slides/29-Iterators_8pp.pdf)) ([29.py](http://cs61a.org/assets/slides/29.py)) | [4.2](http://composingprograms.com/pages/42-implicit-sequences.html) | [Discussion 9: Tail Calls](http://cs61a.org/disc/disc09.pdf) ([Solutions](http://cs61a.org/disc/disc09_sol.pdf)) | [Homework 8](http://cs61a.org/hw/hw08/) (due Wed 4/15) ([Solutions](http://cs61a.org/hw-sol/hw08/)) |
| 13 | Mon 4/13 | Streams  ([Video](https://www.youtube.com/watch?v=YrqGb2JBkNo&list=PL6BsET-8jgYXli0hoS9ypKVXVXNUMmhkc&vq=hd1080)) ([1pp](http://cs61a.org/assets/slides/30-Streams_1pp.pdf)) ([1pps](http://cs61a.org/assets/slides/30-Streams_1pps.pdf)) ([8pp](http://cs61a.org/assets/slides/30-Streams_8pp.pdf)) ([30.py](http://cs61a.org/assets/slides/30.py)) | [4.2](http://composingprograms.com/pages/42-implicit-sequences.html) |  |  |
| Wed 4/15 | Declarative Programming  ([Video](https://www.youtube.com/watch?v=n121RAYkVPs&list=PL6BsET-8jgYWX6SojwvY32mFToOxMu33U&vq=hd1080)) ([1pp](http://cs61a.org/assets/slides/31-Declarative_Programming_1pp.pdf)) ([1pps](http://cs61a.org/assets/slides/31-Declarative_Programming_1pps.pdf)) ([8pp](http://cs61a.org/assets/slides/31-Declarative_Programming_8pp.pdf)) ([31.sql](http://cs61a.org/assets/slides/31.sql)) | [4.3](http://composingprograms.com/pages/43-declarative-programming.html) | [Lab 11: Iterators, Generators, and Streams](http://cs61a.org/lab/lab11/) |  |
| Fri 4/17 | Tables  ([Video](https://www.youtube.com/watch?v=SaG01Ddywkc&list=PL6BsET-8jgYUF1zgVr-CgSnmleudWPjMD&vq=hd1080)) ([1pp](http://cs61a.org/assets/slides/32-Tables_1pp.pdf)) ([1pps](http://cs61a.org/assets/slides/32-Tables_1pps.pdf)) ([8pp](http://cs61a.org/assets/slides/32-Tables_8pp.pdf)) ([32.sql](http://cs61a.org/assets/slides/32.sql)) | [4.3](http://composingprograms.com/pages/43-declarative-programming.html) | [Discussion 10: Iterators, Generators, and Streams](http://cs61a.org/disc/disc10.pdf)([Solutions](http://cs61a.org/disc/disc10_sol.pdf)) | Scheme Contest (due Mon 4/27) |
| 14 | Mon 4/20 | Recursive Select  ([Video](https://www.youtube.com/watch?v=pExuYKZNRH4&list=PL6BsET-8jgYXnX5_b70Is1sdoaIRvDF6H&vq=hd1080)) ([1pp](http://cs61a.org/assets/slides/33-Recursive_Select_1pp.pdf)) ([1pps](http://cs61a.org/assets/slides/33-Recursive_Select_1pps.pdf)) ([8pp](http://cs61a.org/assets/slides/33-Recursive_Select_8pp.pdf)) ([33.sql](http://cs61a.org/assets/slides/33.sql)) | [4.3](http://composingprograms.com/pages/43-declarative-programming.html) |  | [Homework 9](http://cs61a.org/hw/hw09/) (due Wed 4/29) ([Solutions](http://cs61a.org/hw-sol/hw09/)) |
| Wed 4/22 | Aggregation  ([Video](https://www.youtube.com/watch?v=2ajhv_e_u5Q&list=PL6BsET-8jgYXjUV5yhiUOTb57VCvu-05e&vq=hd1080)) ([1pp](http://cs61a.org/assets/slides/34-Aggregation_1pp.pdf)) ([1pps](http://cs61a.org/assets/slides/34-Aggregation_1pps.pdf)) ([8pp](http://cs61a.org/assets/slides/34-Aggregation_8pp.pdf)) ([34.sql](http://cs61a.org/assets/slides/34.sql)) | [4.3](http://composingprograms.com/pages/43-declarative-programming.html) | [Lab 12: SQL](http://cs61a.org/lab/lab12/) |  |
| Fri 4/24 | Distributed Computing  ([Video](https://www.youtube.com/watch?v=Zodu-ODnXuk&list=PL6BsET-8jgYWPoecd14C2cg-5Th8KENVj&vq=hd1080)) ([1pp](http://cs61a.org/assets/slides/35-Distributed_Computing_1pp.pdf)) ([1pps](http://cs61a.org/assets/slides/35-Distributed_Computing_1pps.pdf)) ([8pp](http://cs61a.org/assets/slides/35-Distributed_Computing_8pp.pdf)) | [4.6](http://composingprograms.com/pages/46-distributed-data-processing.html) | [Discussion 11: SQL](http://cs61a.org/disc/disc11.pdf) ([Solutions](http://cs61a.org/disc/disc11_sol.pdf)) |  |
| 15 | Mon 4/27 | Distributed Data  ([Video](https://www.youtube.com/watch?v=91hRkNtqnNI&list=PL6BsET-8jgYU1oQApl6yizWzJmeldHAdc&vq=hd1080)) ([1pp](http://cs61a.org/assets/slides/36-Distributed_Data_1pp.pdf)) ([1pps](http://cs61a.org/assets/slides/36-Distributed_Data_1pps.pdf)) ([8pp](http://cs61a.org/assets/slides/36-Distributed_Data_8pp.pdf)) ([36.zip](http://cs61a.org/assets/slides/36.zip)) | [4.6](http://composingprograms.com/pages/46-distributed-data-processing.html) |  |  |
| Wed 4/29 | Natural Language  ([Video](https://www.youtube.com/watch?v=63kincM38po&list=PL6BsET-8jgYXzBQRbqKeihwr4d-qX8QR2&vq=hd1080)) ([1pp](http://cs61a.org/assets/slides/37-Natural_Language_1pp.pdf)) ([1pps](http://cs61a.org/assets/slides/37-Natural_Language_1pps.pdf)) ([8pp](http://cs61a.org/assets/slides/37-Natural_Language_8pp.pdf)) ([37.zip](http://cs61a.org/assets/slides/37.zip)) |  | [Lab 13: SQL II: Aggregation](http://cs61a.org/lab/lab13/) | [Quiz 4](http://cs61a.org/hw/quiz04/) (due Thu 4/30) ([Solutions](http://cs61a.org/hw-sol/quiz04/)) |
| Fri 5/1 | Conclusion |  | [Discussion 12: Final Review](http://cs61a.org/disc/disc12.pdf) ([Solutions](http://cs61a.org/disc/disc12_sol.pdf)) | [Homework 11](http://cs61a.org/hw/hw11/) (due Wed 5/6) [Homework 12](http://cs61a.org/hw/hw12/) (due Wed 5/6) |
| 16 | Tue 5/12 | No Lecture: [Final](http://cs61a.org/exams/final.html) |  |  |  |