Cheatsheet for MITx - 6.00.1x using JavaScript, Python and R

I really enjoyed this course and thought its extensions to other languages like R and JS might be useful for myself (and others). I will give a brief summary of most of the content covered in this course and compare and contrast between the three languages.

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| Core Elements of programs | | |
| JavaScript | Python | R |
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| Simple Algorithms | | |
| JavaScript | Python | R |
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| Language specific objects | | |
| JavaScript (arrays, objects) | Python (tuples, lists, dictionaries) | R (dataframes, matrices, vectors, arrays) |
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| Testing and Debugging | | |
| JavaScript | Python | R |
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| Exceptions and Assertions |  |  |
| JavaScript | Python | R |
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| Classes and Inheritance |  |  |
| JavaScript | Python | R |
|  |  | * S3, S4 and ReferenceClasses   Class: type of object, properties it possess, how it behaves and how it interacts with other objects   * Every object is an instance of a class   Method: function associated with a type of object.   * Class defines what an object is and methods describe what that object can do.   S3 (type of OOP called generic-function OO unlike message-passing OO like Java, C++ and C#, Python). In S3 a special type of function called a generic function decides which method to call: method defined in the same way as a normal function but called differently. Uses of OOP 🡪 print, summary, plot, predict,  Class of an object is determined by its class attribute; if x is an object, turn x into a class by;  > attr(x, “class”) <- “foo”  > class(x) <- “foo”  Note: an object can have multiple classes.  Method are associated with |
| Computational Complexity | | |
| JavaScript | Python | R |
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| Searching and Sorting Algorithms | | |
| JavaScript | Python | R |
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References:

MIT edx course

Advanced R textbook

https://adv-r.hadley.nz/oo.html