

<p>Python Programming Reference Sheet – Intermediate</p> <p>This is the companion cheat sheet to the “Python Programming Reference Sheet – The Basics”. We cover more advanced topics in the Python Programming language including conditional statements, multiline strings, math functions, reading and writing text/json files as well as the Python modules and command line user input.</p>	<p>5) Python Multiline Strings</p> <p>Python multiline strings are enclosed by 3 double quotes. See example below:</p> <pre>mystringvariable = """this is a multiline string example. This is the second line of my string."""</pre> <p>Note: you do not need to use the “\n” character to get a new line.</p>	<p>10) Writing Files - text files</p> <p>When creating a new file or overwriting an existing file use the “w” option. If you want to append to a file use “a”. Here is an example:</p> <pre>myfile = open("mynewfile.txt", "w") myfile.write("Some content") myfile.close()</pre>
<p>1) Python Conditional statements – if statement</p> <p>Here is an example of an if statement which print a message if the if statement evaluates to True.</p> <pre>x = 8 if x < 10: print("x is less than 10")</pre>	<p>6) Python Dates</p> <p>For easiest date handling import the datetime module</p> <pre>import datetime cYear = datetime.datetime.now().year # year cDay = datetime.datetime.now().strftime("%A") # day cMonth= datetime.datetime.now().strftime("%B") # month</pre>	<p>11) Writing Files - JSON files</p> <p>You can use a json module to write json content to a file.</p> <pre>import json data = '{"fruit": "apple", "color": "red"}' with open('myjsonfile.json', 'w') as myfile: json.dump(data, myfile)</pre>
<p>2) Python Conditional statements – if-else statement</p> <p>Here is an example of if and else.</p> <pre>numericalGrade = 85 if numericalGrade >= 50: print("Grade: Pass") else: print("Grade: Fail")</pre>	<p>7) Python Math functions</p> <p>For easiest way to perform math operations use the math module.</p> <pre>import math result=math.sqrt(49) # square root function result= math.fmod(10,3) # modulus function</pre> <p>For a full list go to an internet search engine and search for “python math function ABC”. Replace ABC with the function you are interested in.</p>	<p>12) Python Modules</p> <p>Without existing Python modules, it would take you a lot more time to create Python programs. In addition to the modules, you have already seen in previous section some of the other popular Python modules include Pandas, NumPy, TensorFlow, and Plotly, For the latest module index reference please visit: https://docs.python.org/3/py-modindex.html</p>
<p>3) Python Conditional statements – if-elif-else statement</p> <p>Here is an if-elif-else example when you have more than 2 conditions.</p> <pre>numericalGrade = 85 if numericalGrade >= 50 and numericalGrade < 60: print("Student Grade: D") elif numericalGrade >= 60 and numericalGrade < 70: print("Student Grade: C") elif numericalGrade >= 70 and numericalGrade < 80: print("Student Grade: B") elif numericalGrade >= 80: print("Student Grade: A") else: print("Student Grade: F")</pre>	<p>8 a) Reading Files - text files (line by line)</p> <p>Reading text files in Python is easy.</p> <pre>filename="myfile.txt" with open(filename) as file: for line in file: print(line.rstrip())</pre> <p>8 b) Reading Files - text files into a variable</p> <p>Reading text files into a variable is easy. Here is an example of reading a file into a list.</p> <pre>myfile = open("myfile.txt") lines = myfile.readlines()</pre>	<p>13) Command Line User Input</p> <p>Obtaining user input is very common for command line Python programs. Here is an example script to obtain user first name and last name from a command line Python script.</p> <pre>firstname = input("Please enter your first name: ") lastname = input("Please enter your last name: ") print("You have entered: " + firstname + " " + lastname)</pre>
<p>4) Python Match Statement</p> <p>The Python Match statement is similar to Switch statement in PHP or Java.</p> <pre>grade = "pass" match grade: case "pass": print("Student has a passing grade") case "fail": print("Student has a failing grade") case _: print("invalid entry")</pre>	<p>9) Reading Files - JSON files</p> <p>One way to read a json file is by using the json module.</p> <pre>import json with open('myjsonfile.json') as json: jsonObject = json.load(json) print(jsonObject)</pre>	<p>14) Python Modules - Using PIP for Installing</p> <p>There are many external modules that do not get installed by default. In order to install these modules, we use PIP which is the Python module manager.</p> <p>To install a new module, use the following format:</p> <pre>pip install module-name</pre> <p>Here is an example to install the Pandas module</p> <pre>pip install pandas</pre>