Honors Computer Science 2 Midterm Exam Review

Who created the Python programming language?

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| Guido van Rossum |

What TV show was Python named after?

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| Monty Python’s Flying Circus |

List two things Python is an ideal language for coding:

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| * Python is good for game development * Python is good for scripting |

List three features of Python?

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| * Object oriented * Free and open source * Portable |

What does it mean that Python is an interpreted language?

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| Python doesn’t need a compiler |

Text to the right of which character is considered a comment

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| # |

When is an escape character used?

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| To add an apostrophe in a string (\’), to move to the next line (\n), to make an indentation (\t) |

Define literal constants:

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| Raw data given to a variable that doesn’t change throughout a program |

List three legal variable names:

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| a  variable1  myVariable |

List all operators and what function they perform:

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| + addition  - subtraction  \* multiplication  / division  \*\* power/exponent  % modulus  // floor division |

Explain why indentation is important in Python:

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| Indentation is important in Python because it determines what code is grouped together |

Explain the proper way to construct the top line of an if statement

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| if <condition>:  <action> |

What is the chunk of code inside an if statement called?

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| If block |

What is the default iterator for a for loop?

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| --- |
| 1 |

What statement is used to break out of a loop?

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| break |

List three things about functions:

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| * Used to eliminate redundant code * Used to simplify code * Allow you to give a name to a block of code |

What keyword should you use to define a function?

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| def |

What is the act of using a function within your program called?

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| Calling a function |

What are Parameters? How are parameters used?

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| Parameters are placeholders that can have values placed through them to be applied to a function. They are used to make a function applicable to multiple situations. |

Explain the difference between parameters and arguments:

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| Arguments are the values that are given to the parameters in a function. |

Explain the difference between local and global scope:

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| Local scope is what is only applied to a certain code block; global scope is relevant throughout the entire program. |

What keyword is used within a function in order for it to contain a value?

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| return |

Define Data Structure:

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| A data structure is an object that can be used to store a collection data. |

Define list and its methods

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| A list stores items in a sequential order and can be mutated.  list.append()  list.remove()  list.search()  list.index()  list.pop()  list.insert()  list.reverse() |

Define tuple and its methods:

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| A tuple stores items in a sequential order but cannot be changed.  tuple.index()  tuple.count() |

Define dictionary and its methods:

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| A dictionary is a method of storing objects within different categories and layers  dictionary.items()  dictionary.clear()  dictionary.copy()  dictionary.values()  dictionary.pop()  dictionary.update() |

How are items stored in a dictionary?

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| They are stored in key/value pairs |

What could be attached to a dictionary when being iterated over?

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| .items() |

What code could you use to delete an element of a list or tuple?

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| del list[x]  Cannot delete elements of a tuple |

Tuples are created under the assumption data will not change, thus making them what?

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| Immutable |

List 3 facts about Classes in Python:

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| * They almost always use the \_\_init\_\_ method * They can have attributes associated with them * They can have methods associated with them |

List 3 facts about Objects in Python:

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| * They are instances of classes * They have object methods connected with them * They have object attributes associated with them |

Describe the \_\_init\_\_ method:

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| Anything under the \_\_init\_\_ method is run every time an object is created using that given class blueprint. (Initialize object instances) |

How do methods differ from functions?

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| Methods are functions that apply to a class, while functions can exist in global scope. |

When would you need to create a class variable?

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| A class variable is necessary when dealing with all instances of a class created. |