

Sample Mid Term - October 16, 2018

Notebook: Computers and Programming I

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1. Find the legal identifiers:

- two test
- sum&average
- `_sum`
- `@num`
- `finalExam`
- `sum_avg`

2. Find Syntax Errors

- `num = int(input('enter an integer)`
 - Double parentheses are needed at the end and a quotation is needed before those parentheses
- `Value = int(input('enter another integer)`
 - Double parentheses are needed at the end and a quotation is needed before those parentheses
 - If you are starting with a capital v to name a variable, you have to stick with it
- `num + value = sum`
 - v needs to be capitalized as defined in the naming of the variable.
 - Needs to be re-written as : `sum = num + Value`
- `Print ('the sum is, sum)`
 - Quotation closer is needed right after the word is
 - print needs to be in lower case

3. Compute

- `3 % 7 / 10`
 - Remainder then division
 - `3/10 = 0.3`
- `-5 // 3`
 - `-2`
 - If negative we round away from zero
- `5//3`
 - `1`
- `(2+3) % 7-2`
 - Parenthesis first, % second and subtraction third
 - `3`
- `9/2`
 - `4.5`

4. Briefly explain the following:

- Central Processing Unit
 - The "brain" of the computer
- System Software
 - Softwares needed to run the system
 - Operating Systems, Utility Programs, Software Development
 - Windows, Mac OS, Linux
 - Zip Files, Virus Scanners
 - IDE
- Assembly Language
 - uses short words (mnemonics) for instruction instead of binary numbers

- Intermediate language in between machine language and higher level language
- In order to know this, we have to know how registers work
- Machine Cycle
 - Fetch instructions
 - Decode
 - Execute

5. Find the output

x = 5, y = 3, z = 10

if (x < 7 and y > 4):

print ("Hello")

else:

print ("Bye")

Bye

x = 2, y = 5, z = 11

if (x > 2 or y < 10):

print ("Newark")

else:

print ("New York")

Newark

6. Write a python program to prompt the user to enter two real numbers and then compute the average of two numbers .

1. Algorithm ?

1. Prompt user to enter two real numbers
2. Computer Reads and Interprets two numbers
3. Computer performs directed operation (average)
4. Computer returns result

2. Python Program?

1. num1 = float(input("Please enter your first number:"))
2. num2 = float(input("Please enter your second number"))
3. avg = (num1+num2)/2
4. print ("Your result is", avg)

7. Convert the following numbers

1. 72

		128	64	32	16	8	4	2	1
			1	0	0	1	0	0	0

2. 31

		128	64	32	16	8	4	2	1
					1	1	1	1	1

3. 1011 = 11

		128	64	32	16	8	4	2	1
						1	0	1	1

4. $11011 = 27$

		128	64	32	16	8	4	2	1
					1	1	0	1	1