CENG 105 Intro to CS
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Assignment 1

Due: Nov 9, 2017

Subject: Python

1) Download python from python.org and install.
2) Learn some python at CodeAcademy (codeacademy.com)
3) **base10Base2**: Use the Python built-in bin() to write a script that reads a base-10 integer as input and outputs the corresponding binary representation of that integer in ones and zeros.

```
num = input("Enter a number: ")
print(bin(int(num)))
```

4) **avgSum**: Write a Python program that reads integer values as input until 0 (zero) is entered. Then prints the number of integers entered, their sum and the average of them on the screen as below:

```
Enter a number: 5
Enter a number: 10
Enter a number: 15
Enter a number: 0
You have entered 3 numbers with the sum 30 and the average 10.
```

```
cnt = 0
sum = 0
while (True):
      num = int(input("Enter a number: "))
      if (num == 0):
            break
      cnt += 1
      sum += num
print("Sum: " + str(sum))
print("Average: " + str(float(sum)/cnt))
```

5) (OS) Answer Ch. Review Questions 3.1, 3.40, 3.42

3.1 Control data and its access, provide for efficient device access, coordinate the use of the machine's resources, and control access to the machine.

3.40 a. The longer a lone car waits at a red light, the higher its priority becomes. Thus, it will ultimately be given a green light at the expense of the heavier traffic.

b. The process whose time slice has just finished will most likely have the highest priority and therefore be awarded the next time slice. This is why dynamic priority systems are used in multiprogramming systems. That is, as a process waits for a time slice, its priority increases. (In the simplest cases, processes merely wait in a queue for the next time slice. Thus a process' priority is reflected by its position in the queue. As each process completes a time slice, it is placed at the rear of the queue.)

3.42 The point of this problem is as much to introduce students to this piece of computer science folklore as it is to pose the problem itself. Issues include the problem of each

philosopher obtaining possession of one fork as well as the problem of a philosopher's neighbors obtaining possession of the forks available to him and never releasing them.

Submit your work as a zip/rar file (**asg1-your-name.zip**) to webonline. It should include base10Base2.py, avgSum.py and solutions.pdf (.jpeg, .png, etc.).

Note: No late assignments.