

Lab 4 Feedback

- Better overall
- Took off for insufficient **testing, comments**
- Overuse of **sys.exit()**
 - Typically, reserved for "unusual" exiting from program
 - E.g., invalid weights and heights for BMI calculation
 - E.g., incorrect use of program (later this semester)
 - Inside of a loop, use **break** instead

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BMI problem

- Compute BMI as a *float* Why is that important?
- Check valid height, weight *before* computing BMI
 - Don't waste time computing if they are invalid
- Most elegant if/else condition:

```
if bmi < 19:
    print "below"
elif bmi > 25:
    print "above"
else:
    print "in range"
```

As opposed to

```
if bmi >= 19 and bmi <= 25:
    print "in range"
elif bmi > 25:
    print "above"
else:
    print "below"
```

Both are correct

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Partial Student Solution

```
TOO_HEAVY = 400
TOO_LIGHT = 60
TOO_TALL = 84 # 7ft
TOO_SHORT = 36 # 3 ft
```

```
LOW_BMI = 19
HIGH_BMI = 25
```

```
print "Do you know your BMI? You should!\n"
```

```
height = input("How tall are you in inches? ")
# Check for unreasonable input, exit if unreasonable
```

```
if height <= TOO_SHORT:
    print "You can't be that short!"
    sys.exit(1)
elif height >= TOO_TALL:
    print "You can't be that tall!"
    sys.exit(1)
```

Well-named constants
Easy to change values
Also explained values (e.g., 7ft)

Good error messages
for unreasonable cases

Checks before user enters weight; less work for user

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Lab 4 Feedback

- Problem 5, if number is divisible by 6
 - Prefer `while num % 6 != 0 :`
to `while not (num % 6 == 0) :`
- Separate blocks of code with *spaces* and *comments*
 - More important as we write larger programs
 - Especially with graphics programs
- Craps: not printing values of rolls

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Lab 4 Feedback

```
number = 1
while number % 6 != 0:
    number=input("Enter a number ...: ")
    if number % 6 != 0:
        print number, "is not divisible by 6. ... "
print number, "is divisible by 6."
```

Checking same condition

Change order of statements:

```
number=input("Enter a number ...: ")
while number % 6 != 0:
    print number, "is not divisible by 6. ... "
    number=input("Enter a number ...: ")
print number, "is divisible by 6."
```

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Exam 1 Results

	A	B	C	Total
Average	77	75	80	83
Median	76	75	84	86

- Had 104 points but out of 100, plus 6 bonus points
- Common mistakes
 - Budgeting time
 - More than I asked for
 - Not answering part of the question
 - Tracing through if problem, fixing code
 - use control flow diagrams
 - while loop → for loop
 - <= instead of ≤

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Tip Chart

You didn't have to worry
about column widths

```
print "Meal Cost    15% tip    20% tip"

for mealCost in xrange(10, 105, 5):
    tip15 = mealCost * .15
    tip20 = mealCost * .20
    print "%9d %9.2f %9.2f" % (mealCost, tip15, tip20)
```

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Animal Adoption

```
num = input("Enter the number of cats you want to adopt: ")
fixed = input("Enter 1 if the cats are neutered or 0 if they aren't: ")

adoption_fee=65

if num > 1:
    adoption_fee -= 5*num

if fixed == 1:
    adoption_fee += 20

total = adoption_fee * num

# Solution does not require the decimal formatting
print "The adoption fee per animal is $%.2f" % adoption_fee
print "The total adoption fee is $%.2f" % total
```

Note how clean/simple
the solution is

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Grading

- (38%) Programming projects
- (30%) Two hourly exams
- (20%) A comprehensive final exam
- (7%) Writeups and discussions of CS-related issues
- (5%) Participation and attendance

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String Review

- How can we find out the length of a string?
- How can we "get" the first character of a string?
- How can we "get" the last character of a string? (2 ways)
- How can we "get" the last 3 characters of a string?
- What are the two ways to iterate through a string?
- How can we tell if some string is part of some other string?

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Lab 5 Overview

- Practice Python programming
 - Practice with Graphics API and animation
 - Screen capture using **xv** tool
 - Create a Web page to display artwork
 - String practice
- Don't spend too much time on creating your picture
 - After get good draft, start on the string problems
 - Then go back and perfect your artwork
- Local accounts!

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