COMP 141
break and continue

Announcements
• None

Review of For Loop Lab

break and continue Keywords
break – immediately terminate a loop (breaks out of loop)
continue – ends the current iteration and goes to the end of the loop body (breaks out of iteration)
Note: Typically used with while loops, but can be used in a for loop as well.

Do not overuse!
Can make code difficult to read and debug!
Using **break**

```python
# This program will add integers from #1 to 20 in this order to total, until
# total is greater than or equal to 100.

total = 0
number = 0

while number < 20:
    number += 1
    total += number
    if total >= 100:
        break

print("The number is", number)
print("The total is", total)
```

Using **continue**

```python
# This program will add integers from #1 to 20 in this order to total,
# except for 10 and 11

total = 0
number = 0

while number < 20:
    number += 1
    if number == 10 or number == 11:
        continue
    total += number
    print("The total is", total)
```

**Using Boolean Variables in Loops**

Given a positive integer \( n \), assign True to `prime` if \( n \) has no factors other than 1 and itself.

If at any time during the loop, you find a factor of \( n \) other than 1 or \( n \), set value of prime to False and break out of the loop

(Remember, \( m \) is a factor of \( n \) if \( m \) divides \( n \) evenly.)

**Equivalent Code**

```python
# This program will add integers from #1 to 20 in this order to total,
# except for 10 and 11

total_scores = 0
while True:
    score = int(input("Score? "))
    total_scores = total_scores + score
    score = int(input("Score? "))
    print("the total is", total_scores)
    if score == 0:
        break
    total_scores = total_scores + score
```
Practice

1. Write a program which repeatedly prompts the user for an integer. If the integer is even, print the integer. If the integer is odd, don’t print anything. Exit the program if the user enters the integer 99.

2. Write a program which averages positive integers. Your program should prompt the user to enter integers until the user enters a negative integer. The negative integer should be discarded, and you should print the average of all the previously entered integers.