COMP 141

Saving Previous Values in a Loop

Announcements

• Reminders
  – Program 5 due Thursday, October 19th by 11:55pm

- Modify the code given to print out the first 50 prime numbers, rather than just the prime numbers less than 100.
- Once that works, make your output look like the output below.

See drawStars.py and nestedLoopGraphics.py for solutions to the other Nested Loop Lab problems.

Class Example

Use a nested loop to draw the following output.

- How many rows?
- How many stars in 1st row?
- How many less stars in next row?

```python
i = 2
while i < 100:
    j = 2
    prime = True
    while j < i:
        if i % j == 0:
            prime = False
            break
    j += 1
    if prime:
        print(i, "is prime")
    i += 1
    stars = i % 3
    spaces = (50 - stars) // 2
    for _ in range(spaces):
        print(" ")
    for _ in range(stars):
        print("*")
```
Practice

Work in groups of 2-3 people to write code that will draw the following Christmas Tree.

Hints:
- You will need a nested loop.
- Count the number of stars and the number of blank spaces in each line and see how they change.
- The trunk of the tree is drawn after the loops complete.

Saving Previous Value in Loop

You may need to hold onto a previous input for a calculation later in a loop.

```python
import random
prev_roll = random.randint(1, 6)
curr_roll = random.randint(1, 6)
print("Previous = ", prev_roll, " current = ", curr_roll)
while not (prev_roll == 1 and curr_roll == 1):
    prev_roll = curr_roll
curr_roll = random.randint(1, 6)
print("Previous = ", prev_roll, " current = ", curr_roll)
```

Saving Previous Value in Loop

Equivalent code to previous slide.

```python
import random
curr_roll = random.randint(1, 6)
while True:
    prev_roll = curr_roll
curr_roll = random.randint(1, 6)
    print("Previous = ", prev_roll, " current = ", curr_roll)
if prev_roll == 1 and curr_roll == 1:
    break
```

Saving Previous Value in Loop

Input: 29 23 19 17 7 1 1

```python
prev = int(input("Number? "))
curr = int(input("Number? "))
diff = prev - curr
while diff != 0:
    print("Difference = ", diff)
    prev = curr
curr = int(input("Number? "))
    diff = prev - curr
print("Done")
```
In-Class Lab