

COSC 1336 Lab: 3

Relevant reading: Sections 4.1-4.3

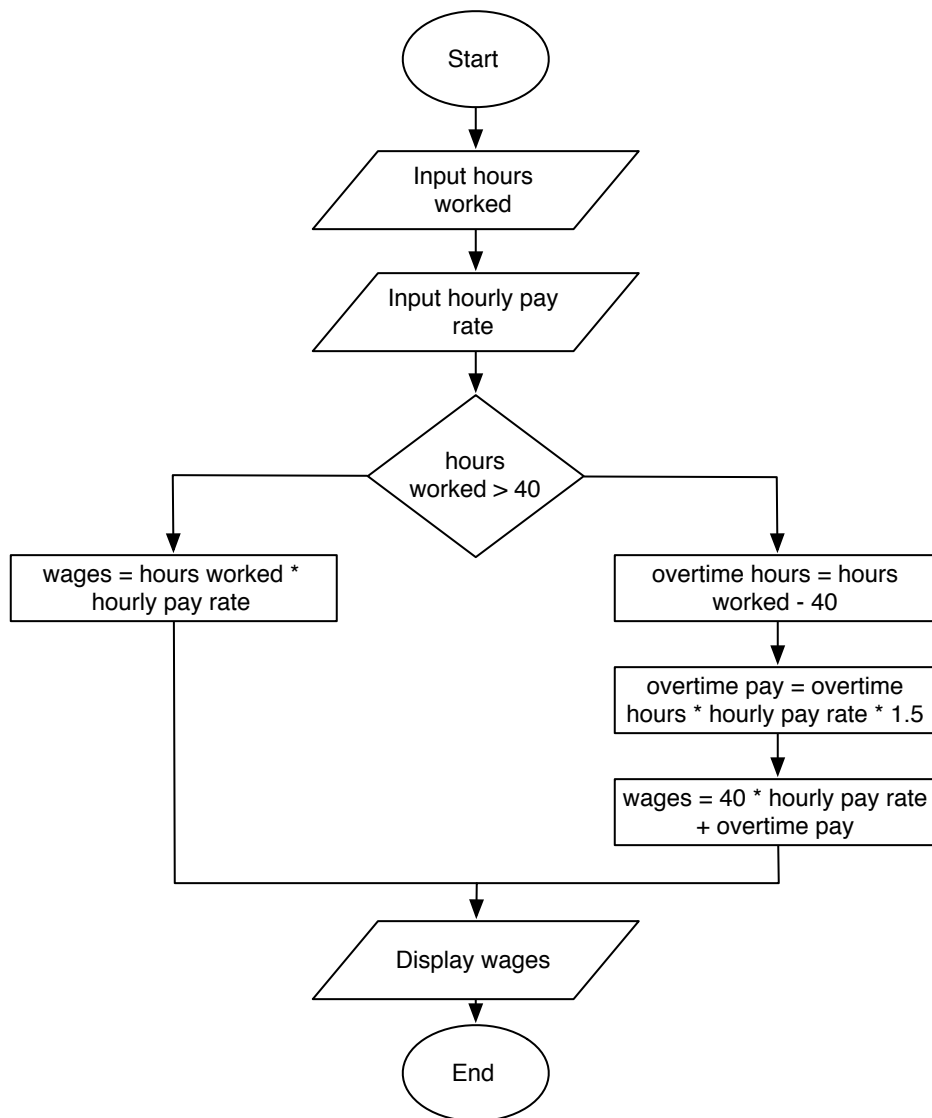
Due: Sep. 25, 2:30 pm

(Late date: Oct. 2, 2:30 pm)

50 Points

Problem 1. [10 points] Below is a flowchart for a program that calculates an employee's pay, including any overtime pay, which is compensated at 1.5 times the normal rate. In a file called `wages_with_overtime.py`, write a Python implementation of this program. Remember to do the following:

- Name variables according to the conventions in this class
- Use named constant variables for any numeric values used in the program (such as 40 and 1.5).
- Put a brief comment at the top of the file that includes your name and a description of the program.



Problem 2. [10 points] Write a program called `alpha_names.py` which reads in two names from the user and displays which of them comes first in the alphabet. For example, here is a transcript of what the program might look like when it is run:

```
Enter a name: Alvarez
Enter another name: Alberts
Alberts comes before Alvarez
```

Problem 3. [16 points] Read Programming Exercise #4 on p. 153 of the textbook.

1. **[8 points]** First, create an IPO chart design for the program. In the Processing part of the design, you can choose to write a flowchart or a pseudocode description of the algorithm. You may submit this electronically or as a hard copy. In either case, it's not important that the IPO be drawn as a table; just make sure that it's clear what the inputs, outputs and algorithm are.
2. **[8 points]** In a file called `magic_dates.py`, create a Python implementation of your design.

Problem 4. [14 points] A department store is having a Buy-One-Get-One-Half-Off sale, and they want a program to help the clerk calculate the amount a customer owes. Design, implement and test a Python program called `bogoho.py` to do this. Assume that the customer is always buying exactly two items, and the 50% discount should always be given on the cheaper of the two items.

For this lab, you should submit the following files:

- `wages_with_overtime.py`
- `alpha_names.py`
- `magic_dates.py`
- `bogoho.py`