



From Screens To Society : Embedding Social and Civic Responsibility in Introduction to Computer Science

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INTRO:

- CS 111 focuses on the technical aspects of coding rather than impacts
- Modify the current class to have both take-home and in-class assignments that center the code in real-world situations
- Help students contextualize how code might impact people through biases, predatory algorithms being implemented, and sensitive data handling

ASSIGNMENTS

Real Life Scenarios:
-Gig Economy
-Loan Approvals
-Healthcare/Sensitive Data
-Predatory Algorithms

Intro CS Topics:
-Variables, print(), and input()
-Loops and Conditionals
-Dataset Navigation
-Functions

Basics Assign.
Gig Economy Work Planner
Revenue Boost Factors

Example Neighborhood Map

SUN	MON	TUES	WED	THRS	FRI	SAT
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Example Work Week
Revenue Deduction Factors

Cost Of Fuel
Miles Traveled
Calculations Needed
Base Pay * Hours Worked * Revenue Boost
- Revenue Deductions = Total

Dataset Assign.
Healthcare Data Manipulation

Private Data

Manipulate Data

Data Visualization

TESTING

Loops/Conditionals Assign.

Assignment Code:
Original Code:
`def main():
 ...
def user_input():
 ...
def analysis():
 ...`

Refactored Code:
`def user_input():
 ...
def analysis():
 ...`

Test Suite Code:
`def user_input():
 ...
def analysis():
 ...`

Grading Rubric:

Logic <ul style="list-style-type: none">• Passes pytest• No extra code• Shows knowledge of loops and conditionals	Style <ul style="list-style-type: none">• Passes pylint• Questions posed are descriptive• Comment are meaningful	Reflection <ul style="list-style-type: none">• Thoughtful responses• Responses engage with the ethical concerns
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Assignment:
Cannot be tested with Pytest suite
Style can be tested by Pylint

Can be tested with Pytest suite with standardized output
Style can be tested by Pylint

IN-CLASS WORK

Basics Assign.

MONDAY **WEDNESDAY** **FRIDAY**

Instruction Slides
In-Class Worksheet

MONDAY **WEDNESDAY** **FRIDAY**

In-Class Worksheet
In-Class Lab

MONDAY **WEDNESDAY** **FRIDAY**

In-Class Lab

MONDAY **WEDNESDAY** **FRIDAY**

Data Types
Integers
Floats
Strings
Variables
count = 0
total = 1.7
name = "Lu"
Print() Input()
print("Hello, World!")
Type Practice
a = 4 → int
print('Hello' + 'World')
Print(): (Strings)
TypeError: "six" / 3
Currency Converter
Tip Calculator
15% 20%
GPA Calculator
(Bonus)
Personal Expenses Calculator
6 pts A
6 pts B
3 pts B
3.4

FUTURE DIRECTIONS

- Create a final project outline for students where they can showcase their accumulated knowledge of code and societal impact
- Create a video walk-through of the in-class activities