**Title:** What a Penny Pincher!

**Course:** CS100:Programming I

**Institution:** University of Alabama

**Author:** John C. Lusth

**Synopsis**

In this project, students are asked to examine the cost of modifications done to a car and the impact on its fuel efficiency. Using python, students use certain functions such as number of miles driven per year, current mpg, cost (in dollars) of a gallon of gasoline, cost of the modification, and percent increase in mpg after the modification, in order to determine how long it will take the owner of the car to recoup their investment.

**Engagement Highlights**

This project asks students to analyze the benefits of modifying a car to improve fuel efficiency and to determine the amount of time it would take for this investment to pay off for its owner. In this way, this project uses [Meaningful and Relevant Content](https://www.engage-csedu.org/engagement#84) as well as [Interdisciplinary Connections](https://www.engage-csedu.org/engagement#26). Additionally, [Worked Examples](https://www.engage-csedu.org/engagement#97) are given through strategies for stepwise refinement.

**Engagement Practices Employed**

[Meaningful and Relevant Content](https://www.engage-csedu.org/engagement#84)

[Interdisciplinary Connections](https://www.engage-csedu.org/engagement#26)

[Worked Examples](https://www.engage-csedu.org/engagement#97)

Knowledge Unit

**Programming Concepts**

**Material Type:** Project

**Material Downloads and Links**

**Downloaded Pdf. ADD here**

**Link to Specific Project:**

<http://troll.cs.ua.edu/cs100/python/projects/WhatAPennyPincher.html>

**Link to All Projects:**

<http://troll.cs.ua.edu/cs100/python/projects/>

**Computer Science Details**

**Computer Science Topic:**

Functions

**Programming Language:**

Python

**Material Format and Licensing Information**

**Material Format:**

Pdf.

**Technology Platform Required:**

Desktop

**Creative Commons License:**

CC BY

**Author's Institutional Information**

**Institution Type:**

Doctoral/Research Universities - Extensive

**Community Type:**

City Small