Chapter 4: Paul the Pirate Purchasing Manager

Contents

Time required: 90 minutes

1. Comment each line of code as shown in the tutorials and other code examples.
2. Follow all directions carefully and accurately.
3. Think of the directions as minimum requirements.

Pseudocode

1. Write pseudocode or TODO for the exercise
2. Submit with the assignment

Requirements

Paul the Pirate is charge of purchasing supplies for a pirate fleet anchored at Lake Minatare. He is interested in a program that will calculate total sale prices for him.

The program uses a while loop that keeps going until the sentinel value changes.

In this loop, the sentinel value is `y`. As long as `still_running == 'y'`, the loop keeps going. As soon as the user types in any other key, the program exits.

1. The user types in the price of an item.
2. The sales tax rate is 6%. Use a constant.
3. The sales tax and total sale is calculated correctly.

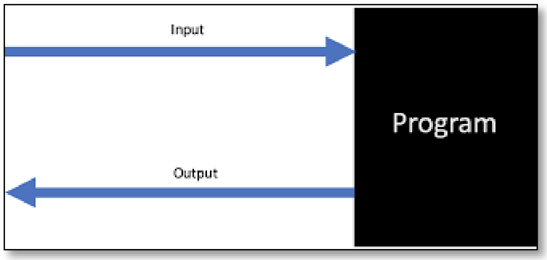
4. The user is prompted to continue or exit the program.

Step 1: Pseudocode

Build your problem solving TODO’s one step at a time.

There may be mistakes in this pseudocode. The idea is to use this process to develop your own correct solution. Developing any program will involve some mistakes and dead ends.

All programs have 3 main parts. Start by dividing your pseudocode into three parts.



```
# ----------------------- INPUT -------------------------#

# ----------------------- CALCULATE ---------------------#

# ----------------------- DISPLAY -----------------------#
```

Step 2: TODO Pseudocode

This step is as if you were doing these calculations on a piece of paper. This generic pseudocode could be used in any programming language to create a program. It is not language specific.

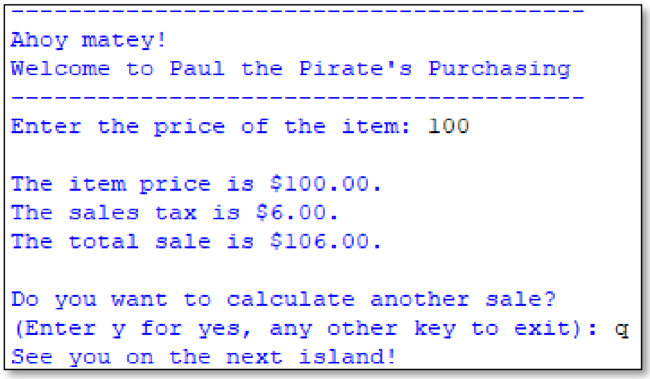
```
# Declare constants. This is information we know before the program starts

# The loop keeps going until the user enters anything other than y
# TODO: Setup sentinel value for loop

# TODO: running total variable for total purchases

# TODO: Print a pirate program title

# TODO: Start while loop
# ----------------------- INPUT -------------------------#
# TODO: Get price of item from user

# ----------------------- CALCULATE ---------------------#
# TODO: Calculate sales tax, total sale, and running total

# ----------------------- DISPLAY -----------------------#
# TODO: Display item price, sales tax, total sale

# TODO: Ask the user if they want to calculate another sale?
# Exit loop if sentinel value is entered
# Go back to the beginning of the loop if they enter y for yes

# Display running total of purchases
```

Step 3: TODO Pseudocode to Python

This step takes the pseudocode and starts converting it into Python code.

```
# Description: Calculate sales tax and total cost on a series of purchases

# Declare constants. This is information we know before the program starts
SALES_TAX_RATE = 0.06

# TODO: Print pirate like title for the program
# The loop keeps going until the user enters anything other than y
# TODO: Setup sentinel value for loop
still_running = "y"

# TODO: running total variable for total purchases
running_total = 0

# TODO: Print a pirate program title

# TODO: Start while loop
while still_running == "y":
    # ----------------------- INPUT -------------------------#
    # TODO: Get price of item from user

    # ----------------------- CALCULATE ---------------------#
    # TODO: Calculate sales tax,

    # TODO: Calculate total sale

    # TODO: Calculate running total

    # ----------------------- DISPLAY -----------------------#
    # TODO: Display item price, sales tax, total sale

    # TODO: Ask the user if they want to calculate another sale?
    # Exit loop if sentinel value is entered
    # Go back to the beginning of the loop if they enter y for yes

# Display running total of purchases
```

Example run:



```
----------------------------------------
Ahoy matey!
Welcome to Paul the Pirate's Purchasing
----------------------------------------
Enter the price of the item: 100

The item price is $100.00.
The sales tax is $6.00.
The total sale is $106.00.

Do you want to calculate another sale?
(Enter y for yes, any other key to exit): q
See you on the next island!
```

Assignment Submission

1. Attach the pseudocode.
2. Attach the program files.
3. Attach screenshots showing the successful operation of the program.
4. Submit in Blackboard.