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# IT 145 Global Rain Summary Report Template

## Directions

Place your pseudocode, flowchart, and explanation in the following sections. Before you submit your report, remove all bracketed text.

## Pseudocode

When you are done implementing the Pet class, refer back to the Pet BAG Specification Document and select either the pet check in or check out method. These methods are detailed in the Functionality section of the specification document.

Write pseudocode that lays out a plan for the method you chose, ensuring that you organize each step in a logical manner. Remember, you will *not* be creating the actual code for the method. You do *not* have to write pseudocode for both methods. Your pseudocode must not exceed one page.

FUNCTION generateUniqueID(petName)  
 RETURN petName + "\_" + RANDOM\_NUMBER  
END FUNCTION

START   
 DISPLAY "Welcome to Pet BAG"   
  
 // Initializing a data structure to hold pet records and available spaces for dogs and cats   
 INITIALIZE petDatabase as a new list to store pet records   
 INITIALIZE dogSpaces as 30   
 INITIALIZE catSpaces as 12   
  
 // Starting a loop that continues indefinitely until manually stopped   
 WHILE true   
 DISPLAY "Is the pet a dog or a cat? (dog/cat)"   
 INPUT petCategory   
  
 // Checking if there is space available for the specified pet category and informing the user if no space is available   
 IF petCategory is "dog" AND dogSpaces is 0   
 DISPLAY "Sorry, no more boarding space available for dogs."   
 CONTINUE   
 ELSE IF petCategory is "cat" AND catSpaces is 0   
 DISPLAY "Sorry, no more boarding space available for cats."   
 CONTINUE   
 END IF   
  
 // Creating a new record for the pet - ‘map’ is a data structure used to store key-value pairs.  
 INITIALIZE petRecord as a new Map to store individual pet data   
  
 DISPLAY "Please enter the name of the pet:"   
 INPUT petName   
  
 // Generate a randomUniqueID  
 SET petID = generateUniqueID(petName)   
 SEARCH petDatabase for petID   
 IF petID found in petDatabase  
 DISPLAY "Pet ID conflict. Please try a different name."  
 CONTINUE  
 END IF  
  
 DISPLAY "Please enter the type of pet (dog or cat): "   
 INPUT petType   
 ADD petType to petRecord with key "Type"   
  
 // Collecting details about the duration of the pet's stay  
 DISPLAY "Please enter the number of days the pet will be staying (numerical values only please – ex: 1, 2, 3... corresponding to number of days):"   
 INPUT petStayDuration   
 ADD petStayDuration to petRecord with key "Stay Duration"   
  
 // Asking about grooming services if the pet is a dog and staying more than 2 days   
 IF petType is "dog" AND petStayDuration > 2   
 DISPLAY "Would you like grooming services? (yes/no)"   
 INPUT petGroomingPreference   
 ADD petGroomingPreference to petRecord with key "Grooming Preference"   
 END IF   
  
 DISPLAY "Please enter the age of the pet:"   
 INPUT petAge   
 ADD petAge to petRecord with key "Age"   
  
 DISPLAY "Please enter the weight of the pet:"   
 INPUT petWeight   
 ADD petWeight to petRecord with key "Weight"   
  
 DISPLAY "Please enter any special instructions for your pet:"   
 INPUT specialInstructions   
 ADD specialInstructions to petRecord with key "Special Instructions"   
  
 // Ensuring that all fields are filled before saving the record   
 IF petName is not EMPTY and petType is not EMPTY and petAge is not EMPTY and petWeight is not EMPTY and specialInstructions is not EMPTY   
 IF petID not found in petDatabase   
 // Adding the new pet record to the database and updating records  
 ADD petRecord to petDatabase   
 IF petCategory is "dog"   
 DECREMENT dogSpaces by 1   
 ELSE IF petCategory is "cat"   
 DECREMENT catSpaces by 1   
 END IF   
 END IF   
 DISPLAY "The following information has been recorded:"   
 DISPLAY petRecord   
 ELSE   
 // Prompting the user to re-enter any missing information – this does not loop back to questioning as of right now – we can add that later on if needed.  
 DISPLAY "Error: Missing information. Please try again.”   
 END IF   
  
 // Ask the user if they want to check-in another pet or save and exit – if answer is ‘yes’ program will loop back to beginning of WHILE loop  
 DISPLAY "Would you like to check-in an additional pet (yes/no): "   
 INPUT userResponse   
 IF userResponse is "no"   
 BREAK   
 END IF   
  
 END WHILE   
  
 // Saving the collected pet data to a permanent storage database at the end of the session   
 SAVE petDatabase to database   
  
END

## Flowchart

Based on the pseudocode you wrote, create a flowchart using a tool of your choice for the method you selected. In your flowchart, be sure to include start and end points and appropriate decision branching, and align the flowchart to the check in or check out process. Your flowchart must be confined to one page.

A diagram of a function

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A diagram of a flowchart

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A diagram of a software project

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## OOP Principles Explanation

Briefly explain how you applied object-oriented programming principles and concepts (such as encapsulation, inheritance, and so on) in your software development work thus far. Your explanation should be one paragraph, or four to six sentences.

In this project, so far, I have used the object-oriented programming principles encapsulation by creating a Pet class, encapsulating attributes like petType, petName, petAge, and daysStay within this class and providing ancessors and mutators to control access to these attributes. This keeps the data within this project intact and allows for easy modification to the class in the future. I’ve also applied principles of inheritance by utilizing Java’s class hierarchy. The Pet class serves as a base class for various types of pers, allowing the code to be reused and extended for functionality for specific pet types in the future. As we’ve created this and as we continue to adapt it for the clients request, it is my hopes that these elements will lay down a foundation for efficient development throughout this project.