**Plan for PA**

1. *Program Purpose*: Create a program that accepts a customer’s orders for hammocks. The customer gets a discount based on the order total (size). A sales receipt will be generated.

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| --- | --- | --- |
| **Input** | **Processing** | **Output** |
| hammock  quantity  color | itemTotal =  quantity \* price  subtotal += itemTotal  discount = subtotal \* .035  discount = subtotal \* .03  discount = subtotal \* .025  discount =  subtotal \*  .02  discSubtota += subtotal – discount  tax = discSubtotal \* .0825  total = discSubtotal + tax | |  |  | | --- | --- | | **SALES RECEIPT**  **LAZY HAZY DAYS, INC.** |  | | **Huebner Oaks Mall** |  | | **San Antonio, TX** |  | |  |  | | **Date: 99/99/99**  **Time: 99:99:99 XX** |  | |  |  | | **Xxxxxxxxxxxxxxxxxxxx ZZZ,ZZ9** | **$ZZZ,ZZZ,ZZ9.99** | | **Xxxxxxxxxxxxxxxxxxxx ZZ,ZZ9** | **Z,ZZZ,ZZ9.99** | |  |  | | **SUBTOTAL:** | **$ZZZ,ZZZ,ZZ9.99** | | **DISCOUNT:** | **ZZZ,ZZ9.99** | | **TAX @ 8.250%:** | **ZZZ,ZZ9.99** | |  |  | | **TOTAL:** | **$ZZZ,ZZZ,ZZ9.99** | |

1. *Class Diagram:*

|  |  |
| --- | --- |
| Class Name | NgR003PA1 |
| Class  Data Members | N/A |
| Method  Data Members | main()  hammock, quantity, color, iterations: int  cont: char  hammockDesc, colorSelected, salesReceipt: String  itemTotal, subtotal, discount, discSubtotal, tax, total, price: double  input: Scanner  dateTime: Calendar |
| Methods | +main(String[] args): static void |

1. *Program Logic:*

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| --- |
| **import Stmts: *import NameOfClass*** |
| import Scanner  import Calendar |

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| --- |
| **Class Header: *public class NameOfYourClass*** |
| Public class NgR003PA1 |

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| **Class Variables (Fields): *Refer to the Class Data Members section of the class diagram for a list of class-level variables or fields which should always be private (-).*** |
| **N/A** |

[**Method Logic table**](#Method_Table)

**🡻Recopy for each method in your program.**

|  |  |  |
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| **Method Purpose: Customer will be asked for a hammock choice based on small, medium, or large; the quantity or hammock size; and, the color. An itemTotal is calculated for a selection, followed by a subtotal. Based on the subtotal a discount is derived, then the subtotal is re-calculated with the discount. The sales tax is based on the discounted subtotal. A total for the sale is finalized and the sales receipt is printed.** | | |
| **Method Header** | public static void main(String[] args) | |
| **Method Variables** | int hammock, quantity, color, iterations = 1  double itemTotal, subtotal, discount, discSubtotal, tax, total, price  scanner input  Calendar dateTime  char cont = y  String hammockDesc, colorSelected  String salesReceipt =  “SALES RECEIPT”  “LAZY HAZY DAYS, INC.”  “Huebner Oaks Mall”  “San Antonio, TX”  “Date: ”, dateTime  ”Time: ”, dateTime  Actual Java Code:  String salesReceipt = String.format(“%n%nSALES RECEIPT”  + “%n%nLAZY HAZY DAYS, INC.”  + “%nHuebner Oaks Mall”  + “%nSan Antonio, TX”  + “%n%nDate: %tD”  + “%nTime: %tr%n”, dateTime, dateTime); | |
| **CODE** | | |
| **Prompts** | **Input Variables** | **Input Prompt** |
| **1** | hammock | “LAZY HAZY DAYS, INC.”  “Our beautiful cotton hammocks sport a traditional look and are very comfortable.”   |  |  |  | | --- | --- | --- | | “1. | Small – 48in. x 11ft. – Good for 1 person | $100.00” | | “2. | Large – 55 in. x 13ft. – Good for 2 people | $140.00” | | “3. | Deluxe – 60 in. x 13ft. – Good for 2 or more people | $175.00” |   “Enter your choice: ” |
| **2** | quantity | “Enter the quantity: ” |
| **3** | color | “1. Crimson Red”  “2. Emerald Green”  “3. Indigo Blue”  “4. Natural”  “5. Purple Haze”  “Enter your choice of colors: ” |
| **4** | cont | “Do you want to add another hammock? Enter ‘Y’ or ‘N’: ” |
| **Calculations** | **Formulas** | |
| **1** | itemTotal = quantity \* price | |
| **2** | subtotal += itemTotal | |
| **3** | discount = subtotal \* .035 | |
| **4** | discount = subtotal \* .03 | |
| **5** | discount = subtotal \* .025 | |
| **6** | discount = subtotal \* .02 | |
| **7** | discSubtotal += subtotal – discount | |
| **8** | tax = discSubtotal \* .0825 | |
| **9** | total = discSubtotal + tax | |
| **Print** | **Output** | |
|  | |  |  | | --- | --- | | **“SALES RECEIPT”**  **“LAZY HAZY DAYS, INC.”** |  | | **“Huebner Oaks Mall”** |  | | **“San Antonio, TX”** |  | |  |  | |  |  | | **“Date: ”, dateTime** |  | | **“Time: ”, dateTime** |  | |  |  | |  |  | | **hammockDesc, “-“, colorSelected, quantity** | **“$”, itemTotal** | | **hammockDesc, “-“, colorSelected, quantity** | **itemTotal** | |  |  | | **“SUBTOTAL:”,** | **“$”, subtotal** | | **“DISCOUNT:”,** | **discount** | | **“TAX @ 8.250%”,** | **tax** | |  |  | |  |  | | **“TOTAL:”,** | **“$”, total** | | |
| **2** | “Invalid hammock choice!” | |
| **3** | “Invalid color choice!” | |
| **Algorithms** | while cont = ‘y’  Prompt 1  if hammock = 1  hammockDesc = “Small – 48 in. x 11 ft.”  price = 100.0  else  if hammock = 2  hammockDesc = “Large = 55in. x 13 ft.”  price = 140.00  else  if hammock = 3  hammockDesc = “Deluxe – 60 in. x 13 ft.”  price = 175.00  else  print 2  hammockDesc = “Invalid hammock”  price = 0.0  endIf  endIf  endIf  Prompt 2  Prompt 3  if color = 1  colorSelected = “Crimson Red”  else  if color = 2  colorSelected = “Emerald Green”  else  if color = 3  colorSelected = “Indigo Blue”  else  if color = 4  colorSelected = “Natural”  else  if color = 5  colorSelected = “Purple Haze”  else  Print 3  colorSelected = “Invalid color”  endIf  endIf  endIf  endIf  Calculation 1  Calculation 2  if subtotal >= 100000.00  Calculation 3  else  if subtotal >= 50000.00  Calculation 4  else  if subtotal >= 10000.00  Calculation 5  else  if subtotal >= 5000.00  Calculation 6  else  discount = 0.0  endIf  endIf  endIf  salesReceipt +=   |  |  | | --- | --- | | hammockDesc, “-“, colorSelected, quantity | “$”, itemTotal |   **OR**   |  |  | | --- | --- | | hammockDesc, “-“, colorSelected, quantity | itemTotal |   Actual Java Code:  salesReceipt += String.format(“%n%-24s %c %-13s %5s %, 7d  %4s %s%,14.2f”, hammockDesc, ‘-‘, colorSelected, “ ”,  quantity, “ ”, iterations > 1 ? “ ” : “$”, itemTotal);  iterations = iterations + 1  Actual Java Code:  iterations += 1;  Prompt 4  endwhile  Calculations 7, 8, 9  Print 1  Actual Java Code:  System.out.printf(“%s”  + “%n%n%52s %-6s $%,14.2f”  + “%n%52s %-7s %,14.2f”  + “%n%52s %-7s %,14.2f”  + “%n%n%52s %-6s $%,14.2f”,  salesReceipt, “SUBTOTAL:”, “ ”,  subtotal, “DISCOUNT:”, “ ”,  discount, “TAX @ 8.250%:”,  “ ”, tax, “TOTAL”, “ ”, total);  Stop | |