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Design-Template – House or Yard Cleaning Cost Program, Final

**Requirements:**

Create a program that calculates the cost of cleaning a house or yard and print the total to the user. Enable user to select house or yard, do not accept invalid input. Retrieve input for house (number of rooms, deluxe or basic package) or yard (mowing service, edging service, shrub cutting service). Check if customer qualifies for the Senior Discount and apply it if necessary. Use at minimum 3 functions for house, yard, and discount check.

**Design:**

* **welcomeMessage()**
  + print name, date, class, program details
* **getJobType()**
  + print out message prompting input for service
    - House = 1
    - Yard = 2
  + Set token = True
  + While (token)
    - Set jobType = to input from user
    - If (jobType == 1 or jobType == 2)
      * Set token = false
    - Else input invalid
      * Print invalid input error
  + Return jobType
* **houseSize(numRooms)**
  + set cost = 0
  + if (numRooms < 3)
    - small house
    - cost += 250
  + if (numRooms < 5)
    - medium house
    - cost += 400
  + else
    - large house
    - cost += 550
  + return cost
* **houseCleaning()**
  + set numRooms = int(input(‘How many rooms?’))
  + print information on house cleaning options
    - 1 = Basic – windows & floors $100 cost
    - 2 = Deluxe – windows, floors, bathrooms, & dusting $300 cost
  + Set packageSelected to user input
  + Validation check for numRooms and packageSelected
    - If(numRooms <= 0 or packageSelected > 2 or packageSelected < 1)
      * Print error message.
      * Exit()
  + Cost = houseSize(numRooms)
  + finalCost = float(packageSelectedCost(packageSelected, cost))
  + return finalCost
* **mowingService()**
  + Cost per square foot is $5
  + sqrFt = float(input(‘input yard sqr footage’))
  + return sqrFt \* 5
* **edgingService()**
  + Cost per linear square foot is $5
  + linFt = float(input(‘input linear foot of edging’)
  + return linFt \* 5
* **shrubService()**
  + Under 5 shrubs = $50
  + Under 10 shrubs = $100
  + 10 or more shrubs = $200
  + Set cost = 0
  + If(numShrubs >= 10)
    - Cost += 200
  + numShrubs >= 5
    - Cost += 100
  + Else
    - Cost += 50
  + Return Cost
* **yardCleaning()**
  + Print yard cleaning options
  + Print instructions to select service when prompted
    - ‘Y’ for the service
    - ‘N’ to decline
  + Set finalCost = 0
  + If (input(‘Will you need our mowing?’) == ‘Y’)
    - finalCost += mowingService()
  + if(input(‘Will you need our edging?’) == ‘Y’)
    - finalCost += edgingService()
  + if(input(‘Will you need our shrub service?’) == ‘Y’)
    - finalCost += shrubService()
  + return float(finalCost)
* **isSenior()**
  + Determines if a customer is eligible for discount
  + Set token = True
  + Age = int(input(‘Enter your age’))
  + If (age < 65)
    - Token = False
  + Return token
* **Main()**
  + welcomeMessage()
  + jobType = getJobType()
  + if (jobType == 1)
    - jobCost = housecleaning()
  + else
    - jobCost = yardCleaning()
  + check for senior discount
    - if applicable – 10%
  + if( isSenior() )
    - print(Discounting final cost)
    - jobCost = round(jobCost – (jobCost \* .10), 2)
  + print out the cost for the job to user
    - print(‘${}’.format(jobCost))

**Test Plan:**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Test #** | **House or Yard Service (1 or 2)** | **Number of Rooms** | **Package Selected (1 or 2)** | **Mowing Service (‘Y’/’N’, sqr footage)** | **Edging Service (‘Y’/’N’, linear footage)** | **Shrub Service (‘Y’/’N’, number of shrubs)** | **Senior Discount (Age, Applied/Not Applied)** | **Expected Output** |
| **1** | **1** | **2** | **1** | **N/a** | **N/a** | **N/a** | **65, Applied** | **$315.0** |
| **2** | **1** | **4** | **2** | **N/a** | **N/a** | **N/a** | **60, Not Applied** | **$700.0** |
| **3** | **1** | **6** | **1** | **N/a** | **N/a** | **N/a** | **70, Applied** | **$585.0** |
| **4** | **2** | **N/a** | **N/a** | **Y, 300** | **Y, 100** | **Y, 10** | **68, Applied** | **$1980.0** |
| **5** | **2** | **N/a** | **N/a** | **N** | **N** | **Y, 6** | **43, Not Applied** | **$100.0** |
| **6** | **2** | **N/a** | **N/a** | **Y, 1000** | **Y, 300** | **N** | **71, Applied** | **$5850.0** |
| **7** | **4, Second Attempt (2)** | **N/a** | **N/a** | **N** | **Y, 400** | **Y, 3** | **32, Not Applied** | **$2050.0** |

**Test 1:**

A screenshot of a computer screen

Description automatically generated with medium confidence

**Test 2:**

A screenshot of a computer screen

Description automatically generated with medium confidence

**Test 3:**

A screenshot of a computer screen

Description automatically generated with medium confidence

**Test 4:**

A screenshot of a computer

Description automatically generated with medium confidence

**Test 5:**

A screenshot of a computer screen

Description automatically generated with medium confidence

**Test 6:**

A screenshot of a computer

Description automatically generated

**Test 7:**

A screenshot of a computer

Description automatically generated