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Programming Exercise 1

**Programming Description:**

This program writes a hypothetical application that sells a limited number of cinema tickets. There are 20 tickets total and a maximum of 4 tickets can be bought by each user. The user is prompted to buy x amount of tickets in which 1<=x<=4 and then the remaining amount of tickets is displayed. This process is repeated until the number of tickets left has reached 0. The program then displays how many people bought tickets, and how many tickets were purchased.

**Global Variables:**

1. TOTAL\_TICKETS: determines how many tickets are available for purchase
2. MAX\_TICKETS\_PER\_BUYER: determines how many tickets a customer can purchase at a time.

**Functions:**

1. *Function Name*: sell\_tickets()
   1. Description: This function handles the sale of tickets. It asks the user how many tickets they would like to purchase and validates their purchase by making sure the number of tickets is within the range 1<=x<=4. The function runs until the number of tickets remaining is equal to 0.
   2. Parameters: None
   3. Variables:
      1. tickets\_remaining: uses global variables TOTAL\_TICKETS to keep track of how many tickets are remaining.
      2. buyers: keeps track of how many users/customers have bought tickets.
      3. tickets\_bought: asks the user for an input of how many tickets they would like to purchase
   4. Logical Steps:
      1. Initialize the variables
      2. Create a while loop to ask customers how many tickets they would like to buy until the ticket count reaches zero.
      3. Create an if statement to validate the purchase.
      4. Returns the number of customers and how many tickets were purchased.
   5. Returns: The function returns the number of buyers and how many tickets were purchased.
2. *Function Name*: main()
   1. Description: This function calls the sell\_tickets() functions and runs the whole program and displays the number of customers purchased tickets and how many tickets were sold.
   2. Parameters: None
   3. Variables:
      1. total\_buyers: Uses the return of buyers from the sell\_tickets() function and displays the amount of customers.
      2. tickets\_sold: Uses the return of TOTAL\_TICKETS-tickets\_remaining from the sell\_tickets() function and displays the amount of tickets sold.
   4. Logical Steps:
      1. Call the sell\_tickets() functions and initialize the two variables using the returns from sell\_tickets().
      2. Print a space and the data.
   5. Returns: None

**Logical Steps:**

1. Initialize the global variables/constants
2. Define the functions
3. Call the main function
4. The sell\_tickets() function is called within the main function.

**Repository Link:** <https://github.com/7aaden/COP2373-Semester-1>

**Output Screenshot:**

