Program Requirements:

The program will compute the gross box office revenue, the distributor amount, and the net profit. It will then echo back the movie name along with the three computed values. It should display the amounts using a dollar sign and two decimal places.

Program Inputs:

A few different values will have to be input into the program for it to function correctly. First, the user must input the movie’s title, which simply has to be a string of characters. Next, the user must input the amount of adult and child tickets sold. This must be an integer value, as there is no such thing as half of a person.

Program Outputs:

Four values will be produced and output by the program along with text describing each value. First, the name of the movie previously entered will be echoed back to the user. The next three values will be double values since they will be referring to monetary values. The gross box office revenue, distributor amount, and net profit will all be presented to the user as double values. The dollar signs and decimals for all 3 values will be lined up in the same column.

Test Plan:

To test if the program outputs the correct values, I will input numerous different values into the program, then do the computations by hand and compare the program’s results to my own.

|  |  |  |  |
| --- | --- | --- | --- |
| Value | Input | Value | Output |
| Movie Title | Dune | Movie Title | Dune |
| Adult Tickets Sold | 368 | Gross Revenue | $3434.50 |
| Child Tickets Sold | 142 | Distributor Amount | $2747.60 |
|  |  | Net Profit | $ 689.90 |

|  |  |  |  |
| --- | --- | --- | --- |
| Value | Input | Value | Output |
| Movie Title | The Notebook | Movie Title | The Notebook |
| Adult Tickets Sold | 48 | Gross Revenue | $445.50 |
| Child Tickets Sold | 18 | Distributor Amount | $356.40 |
|  |  | Net Profit | $ 89.10 |

|  |  |  |  |
| --- | --- | --- | --- |
| Value | Input | Value | Output |
| Movie Title | Zombieland | Movie Title | Zombieland |
| Adult Tickets Sold | 159 | Gross Revenue | $1392.00 |
| Child Tickets Sold | 42 | Distributor Amount | $1113.60 |
|  |  | Net Profit | $ 278.40 |

Solution Overview:

First, all values will be assigned. The movie’s title will be assigned to a char value, and the number of adult and child tickets will be assigned to integer values. Next, double values for the cost of all adult and child tickets as well as gross revenue, distributor amount, and net profit. After that, the program will ask the user to input the movie title, number of adult tickets, and number of child tickets. Then, the program will compute the monetary value of all adult and child tickets. These two will then be added together to get the gross revenue. The gross revenue will be multiplied by 0.8 to get the distributor amount, and then the distributor amount will be subtracted from the gross revenue to receive the net profit. The program will then output the movie title, gross revenue, distributor amount, and net profit. Text will be added to specify which value is which, and setfill() will be used to assign dollar signs in the correct place.

Algorithm Flowchart:

Diagram

Description automatically generated