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UNIVERSITY

COLLEGE OF COMPUTING AND INFORMATICS TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE

SCHOOL OF COMPUTING AND INFORMATICS TECHNOLOGY

COURSE NAME: PRINCIPLES OF PROGRAMMING LANGUAGES.

ASSIGNMENT ONE

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CINEMAX BOOKING SYSTEM

Given the above problem, we chose to use python programming language mainly because of the following reasons.

1. **The suitability of the language for the problem domain:** - the above problem involves a program to help in management of Cinemax theater so as to assign and book seats, and sell tickets for performances. This makes the problem to fall in the business application domain that requires a lot of computation therefore python programming language will provide all the required constructs for such computations hence increased writability.
2. **Readability of the language:** - python programming language provides ways of combining several primitive constructs so as to create larger constructs for example one can combine several data types so as to create a function that can be called throughout the whole programme hence high level of orthogonality. This makes reading easy.
3. **Reliability of the language:** - python programming language is a strongly typed language and this means that type errors are always checked and this makes the language very reliable.
4. **Cost of the language:** - python programming language is one of the easiest languages to learn and will cut on the cost of training programmers. The cost of execution is also low since there are no many libraries that are required for c to run.
5. **Portability of the language:** - it is easy to move a c programme from one implementation to another.
6. **Simplicity:** - Python is one of the easiest languages to learn because it involves few constructs and this makes its readability very easy.
7. **Cost:** - python involves using few constructs for bigger operations and therefore this will reduce the cost of operation in terms of time.
8. **Writability:** - there are some many ways of expressivity in python and this also increases the ease of creating programmes.

METHODOLOGY

This is a description of the steps involved during the solving of the above problem.

The following are the steps that we went through to create the above system: -

- 1. Analysis of the problem:** - This involved a careful study of the problem. It was after this kind of study that we were able to understand what kind of problem domain this was. The problem being a business domain problem we chose to use python programming language. After this we analyzed what the new system is required to perform and what kind of data input is required for the system and what the system outputs

- 2. Selection of the type of language to use.**

This stage involves evaluating the different languages in terms of readability, writability, cost, portability and also selecting the best fit for the problem.

- 3. system requirement analysis.**

This stage involved a careful study of what the new system is to do. Under this stage we came up with the different functionalities of the system such as: -

- Reserving a seat.
- Paying for a seat.
- Viewing the seats and their status i.e. whether booked, free of booked.

Data input.

- a) Prices:** - this includes the prices of each seat in the theatre.
- b) Seat type:** - this indicates the category of the seat according to the rows in the cinema.
- c) Number of seats:** - this is the number of seats that one customer would like to buy.
- d) Selection of the kind of kind of seat.** This includes inputting the position of seat number and row in which it is position.
- e) Seat status:** - this indicates what state of the seat whether it is booked, available or reserved.

Data output.

- a) The seat arrangements:** - this involves displaying a chart showing all the seats and their status.
- b) The number of available seats:** - this is the total number of seats that are available.
- c) Total revenue from the seats sold:** - this is the total amount collected from the sold seats.

- 4. implementation of the problem.**

This involved creating a code that helps to solve the above problem. Through the use of python, we were able to create the different.

- 5. Testing the code: -**

This step involved testing whether the code created was performing what it was specified to do.

APPENDIX

Screen shots

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
A	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
B	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
C	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
D	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
E	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
F	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
G	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
H	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
I	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
J	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
K	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
L	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
M	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
N	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
O	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
P	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

SCREEN
Number of seats available:320
Total sales: shs.0
Choose Action <C for continue, B for paying Reserved Seats, any character for Exit:>

Figure 1: showing the initial display of all seats.

Enter number of seats required:4
Desired seat category<Twin, UUIP, VIP or Economy>: Twin
A5 25000
A6 25000
A7 25000
A8 25000
A9 25000
A10 25000
A11 25000
A12 25000
A13 25000
A14 25000
A15 25000
B5 25000
B6 25000
B7 25000
B8 25000
B9 25000
B10 25000
B11 25000
B12 25000
B13 25000
B14 25000
B15 25000
Choose Seat please <eg C7>:

Figure 2: available seats in the twin category and their prices.

seats to be reserved: A5 and A6																				
Seats Successfully reserved																				
A	*	*	*	*	*	0	0	*	*	*	*	*	*	*	*	*	*	*	*	*
B	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
C	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
D	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
E	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
F	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
G	*	*	*	*	*	*	*	*	*	0	*	*	*	*	*	*	*	*	*	*
H	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
I	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
J	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
K	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
L	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
M	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
N	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
O	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
P	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

Figure 3: showing the seats that have been reserved.

```

Choose Seat please (eg C7): C1
Press C for Cash or B for reservation/booking: C
seats to be sold:C1
  A | * | * | * | * | # | # | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
  B | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
  C | # | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
  D | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
  E | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
  F | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
  G | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
  H | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
  I | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
  J | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
  K | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
  L | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
  M | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
  N | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
  O | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
  P | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |

SCREEN
Number of seats available:317
Total sales: shs.100000

```

Figure 4: showing the seats that have been booked.