Functional requirements:

1. -Show a graphical, interactable seating chart
2. -Contain a module where admin can add plays with schedule and pricing by seat
3. -Have a way for customers to register
4. -Have a way for customers to choose and purchase seating
5. -contain a shopping cart
6. -give a report of the transaction
7. -simulate the sell using a credit card
8. -have a login for theater admin
9. -allow admin to generate reports
10. -must be online and optimized for tablets and mobile devices

Consider all functions to be of average complexity.

1. EQ
2. EI
3. EI
4. EI
5. EO
6. EQ
7. EIF
8. EI
9. EQ
10. ILF

Unadjusted Function Points (UFP)

| Function | # | Complexity | UFP |
|---|---|---|---|
| EI | 4 | 4 | 16 |
| EO | 1 | 5 | 5 |
| EQ | 3 | 4 | 12 |
| ILF | 1 | 10 | 10 |
| EIF | 1 | 7 | 7 |

UFP: 50

| Adjustment Factor | Points |
|---|---|
| Data communications | 5 |
| Distributed data processing | 4 |
| Performance | 3 |
| Heavily used configuration | 2 |
| Transaction rate | 5 |
| Online data entry | 5 |
| End-user efficiency | 3 |
| Online update | 5 |
| Complex processing | 2 |
| Reusability | 1 |
| Installation ease | 1 |
| Operational ease | 3 |
| Multiple sites | 2 |
| Facilitate change | 3 |

VAF = 0.65 + (0.01 * $\sum_{i=1}^{14} C_i$)

$\sum_{i=1}^{14} C_i$ = (0*0)+(1*2)+(2*3)+(3*4)+(4*1)+(5*4) = 0+2+6+12+4+20 = 44

0.65 + (0.01 * 44) = 1.09

Value Adjustment Factor (VAF) = 1.09

Adjusted Functional Points (AFP) = 50 * 1.09 ≈ 55

4th generation Languages
8 Avg FP hrs
53 Avg code lines for FP

LOC = 53*55 ≈ 2915 Lines of Code (LOC)

Basic model, organic type

Effort(E) = $2.4(2915/1000)^{1.05} \approx 7.4$ persons/month

Time(T) = $2.5(7.4)^{.38} \approx 5$ months

Avg staff size(P) = $7.4/5 \approx 2$ people

Productivity (Pr) = $2915/7.4 \approx 394$ LOC

Monthly salary for programmers $3,000

Equipment: $35,000

Cost = 7 * 3000 = 21,000 + 35000 = $56,000