

| UCP calculation (refer this) | | | | |
|---|--|--------|------------|-------|
| Total No. of simple use cases | | 2 | | |
| Total No. of average use cases | | 3 | | |
| Total No. of complex use cases | | 2 | | |
| Unadjusted Use Case Weight (UUCW) | UUCW = (Total No. of Simple Use Cases x 5) + (Total No. Average Use Cases x 10) + (Total No. Complex Use Cases x 15) | 70 | | |
| Total No. of simple actors | | 2 | | |
| Total No. of average actors | | 0 | | |
| Total No. of complex actors | | 3 | | |
| Unadjusted Actor Weight (UAW) | UAW = (Total No. of Simple actors x 1) + (Total No. Average actors x 2) + (Total No. Complex actors x 3) | 11 | | |
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| | | | | |
| Factor | Description | Weight | Your score | Total |
| T1 | Distributed system | 2 | 1 | 2 |
| T2 | Response time/performance objectives | 1 | 4 | 4 |
| T3 | End-user efficiency | 1 | 3 | 3 |
| T4 | Internal processing complexity | 1 | 1 | 1 |
| T5 | Code reusability | 1 | 3 | 3 |
| T6 | Easy to install | 0.5 | 2 | 1 |
| T7 | Easy to use | 0.5 | 5 | 2.5 |
| T8 | Portability to other platforms | 2 | 2 | 4 |
| T9 | System maintenance | 1 | 3 | 3 |
| T10 | Concurrent/parallel processing | 1 | 2 | 2 |
| T11 | Security features | 1 | 2 | 2 |
| T12 | Access for third parties | 1 | 1 | 1 |

| T13 | End user training | 1 | 1 | 1 |
|---|--|--------------|------------|-------|
| | Total TF | 29.5 | | |
| Technical Complexity Factor (TCF) | $TCF = 0.6 + (TF/100)$ | 0.895 | | |
| | | | | |
| | | | | |
| | | | | |
| Factor | Description | Weight | Your score | Total |
| E1 | Familiarity with development process used | 1.5 | 2 | 3 |
| E2 | Application experience | 0.5 | 2 | 1 |
| E3 | Object-oriented experience of team | 1 | 4 | 4 |
| E4 | Lead analyst capability | 0.5 | 4 | 2 |
| E5 | Motivation of the team | 1 | 5 | 5 |
| E6 | Stability of requirements | 2 | 4 | 8 |
| E7 | Part-time staff | -1 | 2 | -2 |
| E8 | Difficult programming language | -1 | 3 | -3 |
| | Total EF | 18 | | |
| Environmental Complexity Factor (ECF) | $ECF = 1.4 + (-0.03 \times EF)$ | 0.86 | | |
| | | | | |
| | | | | |
| Use Case Points (UCP) | $UCP = (UUCW + UAW) \times TCF \times ECF$ | 62.3457 | | |
| How many hours per use case points will be used? | 4 | | | |
| Estimated effort | 249.3828 | | | |
| | | | | |
| | | | | |
| COCOMO Calculation (refer lecture slides and this) | | | | |
| KLOC frontend | KLOC backend | Total | | |
| 7.5 | 2.8 | 10.3 | | |

| Development mode | Project characteristics | | | |
|---|-------------------------|----------------|----------------------------|--|
| | Size (a) | Innovation (b) | Deadline/constraints (c) | |
| Organic | Small (2.4) | Little (1.05) | Not tight (0.38) | |
| Semi-detached | Medium (3.0) | Medium (1.12) | Medium (0.35) | |
| Embedded | Large (3.6) | Greater (1.20) | Tight (0.32) | |
| | | | | |
| a | 3 | | | |
| b | 1.12 | | | |
| c | 0.32 | | | |
| Development Efforts (MM) | a*(KLOC) ^b | 40.87887604 | (MM: Man Month) | |
| Effort and development time (TDEV) | 2.5*MM ^c | 8.196334452 | | |
| Average Staff | | 4.987458269 | | |
| Conversion factor for a team of 5 | | 1.002514654 | | |
| Development time for team of 5 | | 8.175775208 | in months | |
| Total hours for a team of 5 (to better compare it to the use case points) | | 1242.717832 | 152 hours per Person month | |
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| | | | | |
| Written code until now (without empty lines) | | | | |
| Frontend | Backend | Total | | |
| 6.903 | 2.495 | 9.398 | | |