## calculate the project size using FPA

| Function type | Simple | Average | Complex |
|---|---|---|---|
| Internal Logical File | 7 | 10 | 15 |
| External Interface File | 5 | 7 | 10 |
| External Input | 3 | 4 | 6 |
| External Output | 4 | 5 | 7 |
| External Inquiry | 3 | 4 | 6 |

| | | Weighting Factor | | | |
|---|---|---|---|---|---|
| | | Simple | Average | Complex | Count |
| **Inputs** | Member Registration | 1 | | | |
| | Member Login | 4 | | | 5 |
| **Outputs** | Member login confirmation | | 2 | | |
| | Member Registration confirmation | 1 | | | 3 |
| **Inquiries** | Validate member information | | 2 | | |
| | View friends list | 1 | | | 3 |
| **Interfaces** | Application server to database | 3 | | | |
| | User to application server | 3 | | | 6 |
| **Total UFP** | | | | | 17 |

| Value | Complexity Weighting Factor |
|---|---|
| Data communications | 1 |
| Heavily used configuration | 0 |
| Transaction rate | 3 |
| End-user efficiency | 1 |
| Complex processing | 0 |
| Installation ease | 0 |
| Multiplae sites | 1 |
| Performance | 0 |
| Distributed data processing | 1 |
| Online data entry | 5 |
| Online updating | 0 |
| Reusibility | 0 |
| Operational ease | 1 |
| Extensibility | 4 |
| **Total Processing Complexity (PC)** | 17 |

Total Adujusted Function Points (TUFP) = (0.65 + (0.01 * PC)) * TUFP

Total Adujusted Function Points (TUFP) = (0.65 + (0.01 * 17)) * 17 = 13.94

Language Factor (LF) for JavaScript assumed as = 71.11 (subject to change)

Source Lines of Code (SLOC) = TUFP * LF = 13.94 * 71.11 = 991.27

COCOMO Model (our project is an application program)

| TDEV | Programmer Productivity | Development Time (Month) |
|---|---|---|
| Application Programs | PM = 2.4 * (KDSI) 1.05 | PM = 2.5 * (PM) 0.38 |
| Utility Programs | PM = 3.0 * (KDSI) 1.12 | PM = 2.5 * (PM) 0.35 |
| System Programs | PM = 3.6 * (KDSI) 1.20 | PM = 2.5 * (PM) 0.32 |

Using the above formula for the application programs,
the programmer productivity and the development time are as follows:

KLOC = 0.991 KLOC

Effort = 2.4 * (0.991)^1.05 = 2.3 person-month

Tdev = 2.5 * (2.3)^0.38 = 3.43 month