1.1 Estimations

Size Estimation (Function Point Metrics)

- **Step 1**: We find that there are seven inputs, two outputs, one inquiry, eight files, and one interface.

Function Point Metric	**NUMBER**
INPUT	**7**
OUTPUT	**2**
INQUIRY	**1**
FILES	**8**
INTERFACES	**1**

UFP = 7 × 4 + 2 × 5 + 1 × 4 + 8 x 10 + 1 × 10 = 132

- **Step 2**: In Input out of seven two are simple, three are Average and two are complex, whereas in output one is Average and other is complex, in Inquiry parameter is of complex complexity, in files

seven are of complex and one is Average, in Interfaces it is complex.

FPM Parameters	SIMPLE	AVERAGE	COMPLEX	Total
INPUT	**2**	**3**	**2**	**7**
OUTPUT		**1**	**1**	**2**
INQUIRY			**1**	**1**
FILES		**1**	**7**	**8**
INTERFACE			**1**	**1**

The UFP can be refined as follows:

UFP = 2x3 + 3x4 + 2x6 + 1x5 + 1x7 + 1x6 + 1 x10 + 7x15 +1x10 = 173

- **Step 3**: The complexity adjustment factors have average values,
  - **DI** =62
  - **TCF** = 0.65 + 0.01 * 62 = 1.27
  - **FP**= 173 * 1.27 = 219.71

1.12 Effort and Development Time Estimation (COCOMO Model)

Our Software is a relatively small group project. So we choose the Organic category using the Basic Model.

- **Effort** = 2.4 (KLOC)^1.05 PM
- **Tdev** = 2.5 (Effort)^0.38 Months

So as per our knowledge the no LOC(Line Of code) is approximately 1800.

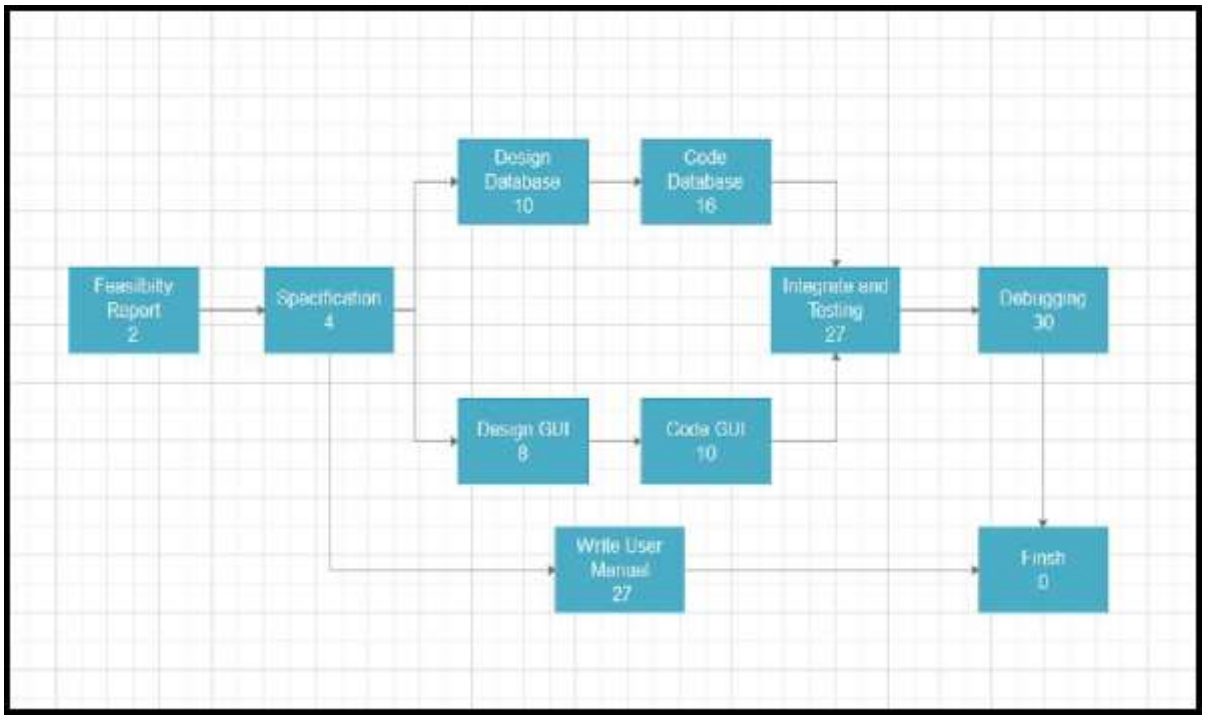
- **Effort** = 2.4 (KLOC)1.05 PM = 2.4*(1.8)^1.05 = 4.44 PM
- **Tdev** = 2.5 (Effort)0.38 Months = 2.5*(4.44)^0.38 = 4.40 Months
- **Average Staff Size** = 4.44/4.40=1.01 Person
- **Productivity** = 1.8/4.44= 0.4

1.2 Project schedule breakdown (Activity network and PERT chart)

The activity network representation is:

TASK NUMBER	TASK	DURATION	PREDECESSOR
T1	FEASIBILITY REPORT	2	-
T2	SPECIFICATION	4	T1
T3	DESIGN GUI	8	T2
T4	CODE GUI	10	T3
T5	DESIGN DATABASE	10	T2
T6	CODE DATABASE	16	T5
T7	INTEGRATE AND TESTING	27	T4,T6
T8	DEBUGGING	30	T7
T9	WRITE USER MANUAL	27	T2

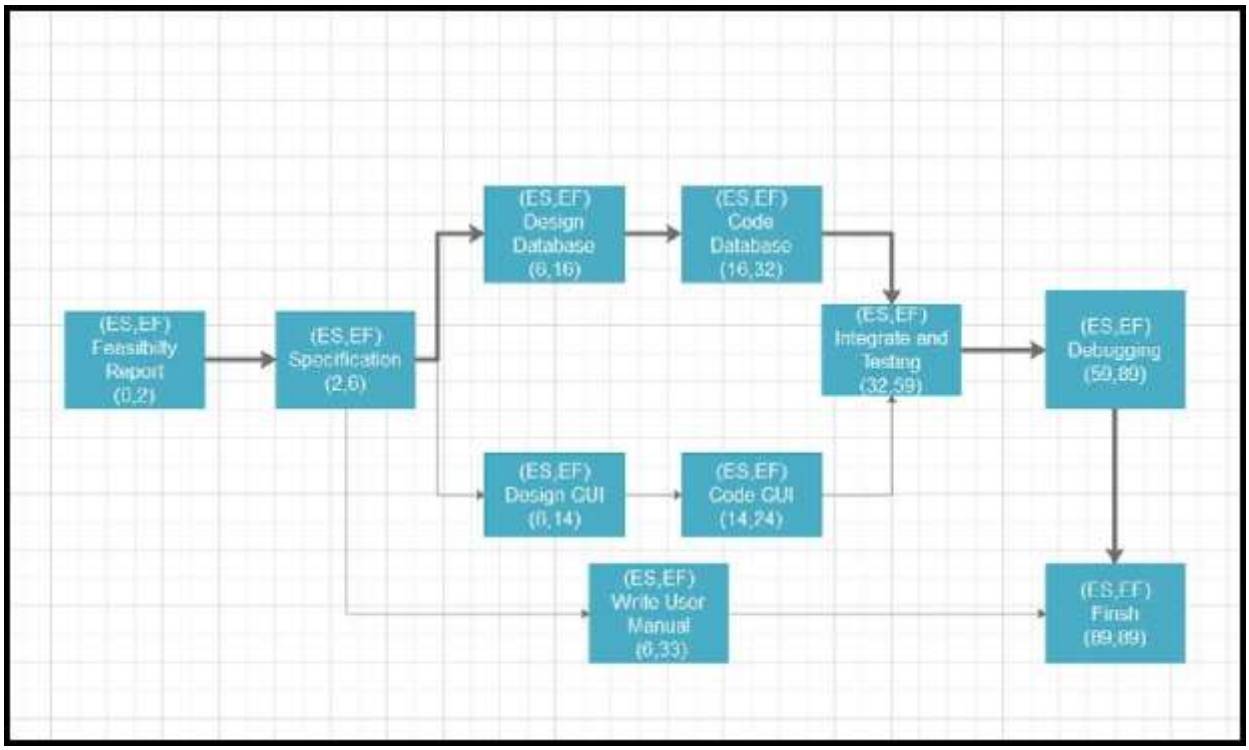
Based on this table the activity network can be shown as :

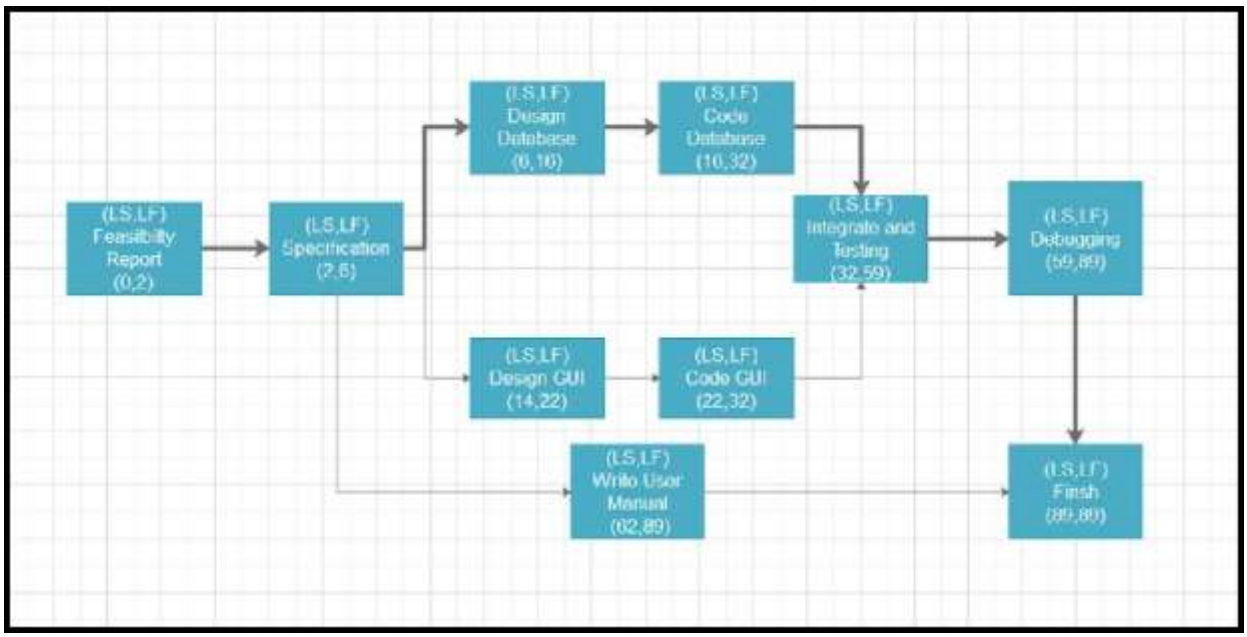


Projected Parameters Computed from Activity Network

TASK	EARLY START	EARLY FINISH	LATE START	LATE FINISH	SLACK TIME
FEASIBILITY REPORT	0	2	0	2	0
SPECIFICATION	2	6	2	6	0
DESIGN GUI	6	14	14	22	8
CODE GUI	14	24	22	32	8
DESIGN DATABASE	6	16	6	16	0
CODE DATABASE	16	32	16	32	0
INTEGRATE AND TESTING	32	59	32	59	0
DEBUGGING	59	89	59	89	0
WRITE USER MANUAL	6	33	62	89	56

The Calculated ES, EF and LS, LF are mentioned in the diagrams below. Also the critical path is analyzed.





The final **PERT CHART** is shown below: