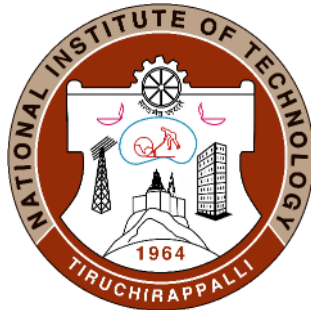# DEPARTMENT OF MANAGEMENT STUDIES

NATIONAL INSTITUTE OF TECHNOLOGY

Tanjore Main Road, Tiruchirappalli, Tamil Nadu 620015

MB 872 SOFTWARE PROJECT MANAGEMENT

Assignment - Planning Document of Employee Training Tracker

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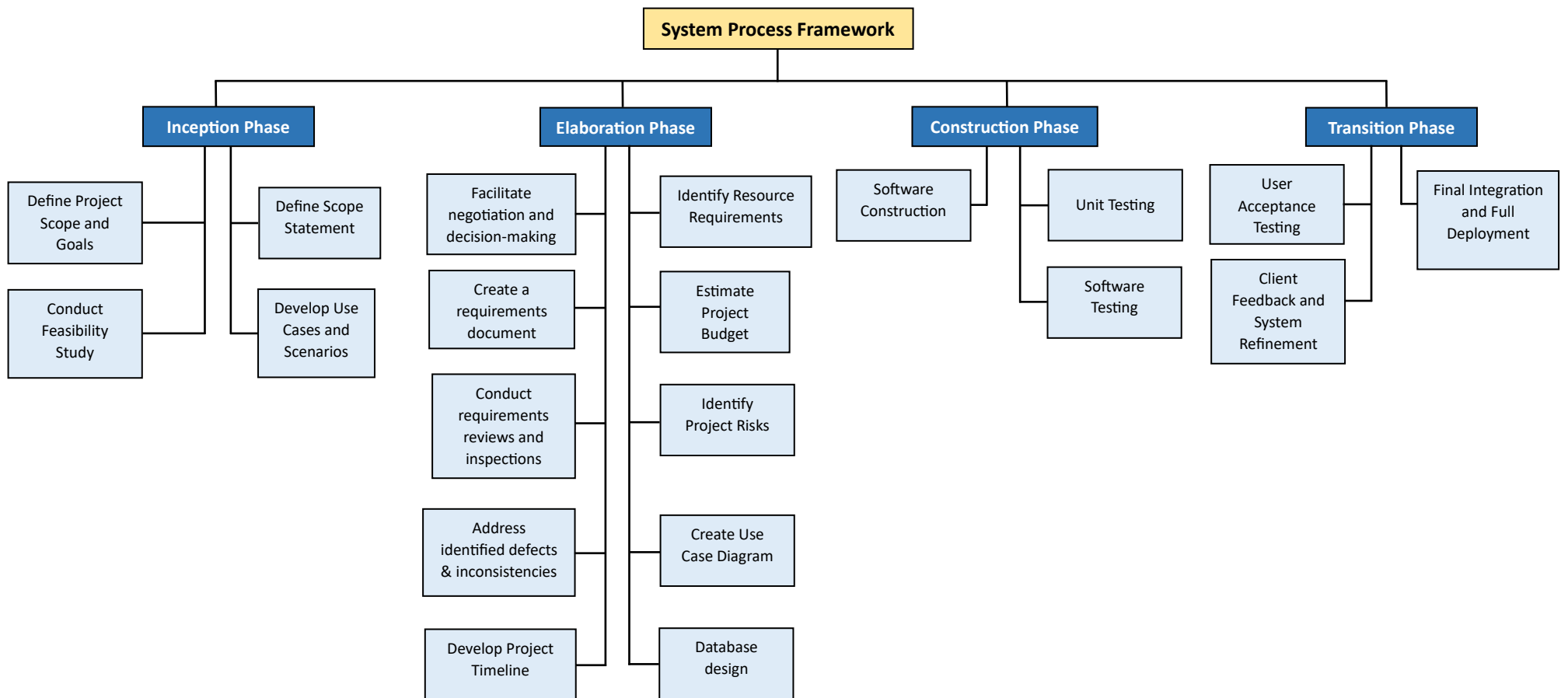
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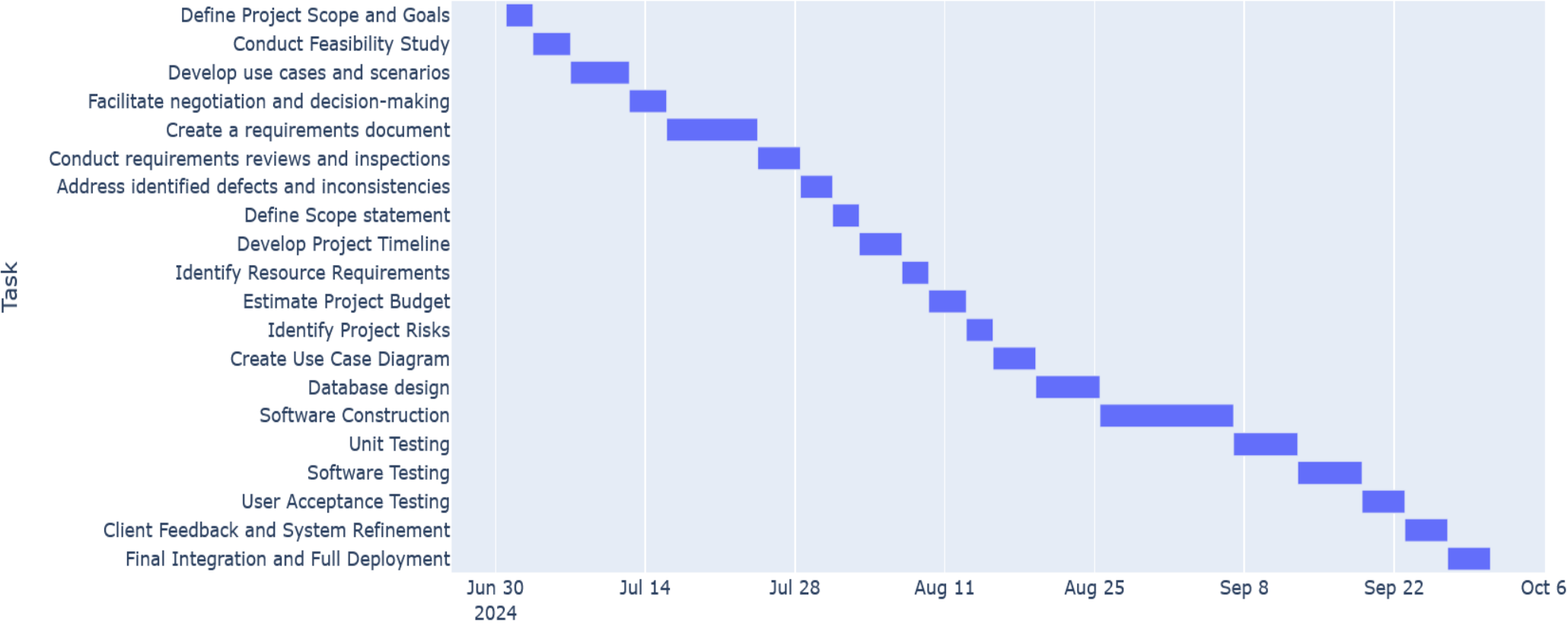**Dr. Sridevi P**

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WORK BREAKDOWN STRUCTURE

System Process Framework

Inception Phase

- Define Project Scope and Goals
- Conduct Feasibility Study
- Define Scope Statement
- Develop Use Cases and Scenarios

Elaboration Phase

- Facilitate negotiation and decision-making
- Create a requirements document
- Conduct requirements reviews and inspections
- Address identified defects & inconsistencies
- Develop Project Timeline
- Identify Resource Requirements
- Estimate Project Budget
- Identify Project Risks
- Create Use Case Diagram
- Database design

Construction Phase

- Software Construction
- Unit Testing
- Software Testing

Transition Phase

- User Acceptance Testing
- Client Feedback and System Refinement
- Final Integration and Full Deployment

GANTT CHART

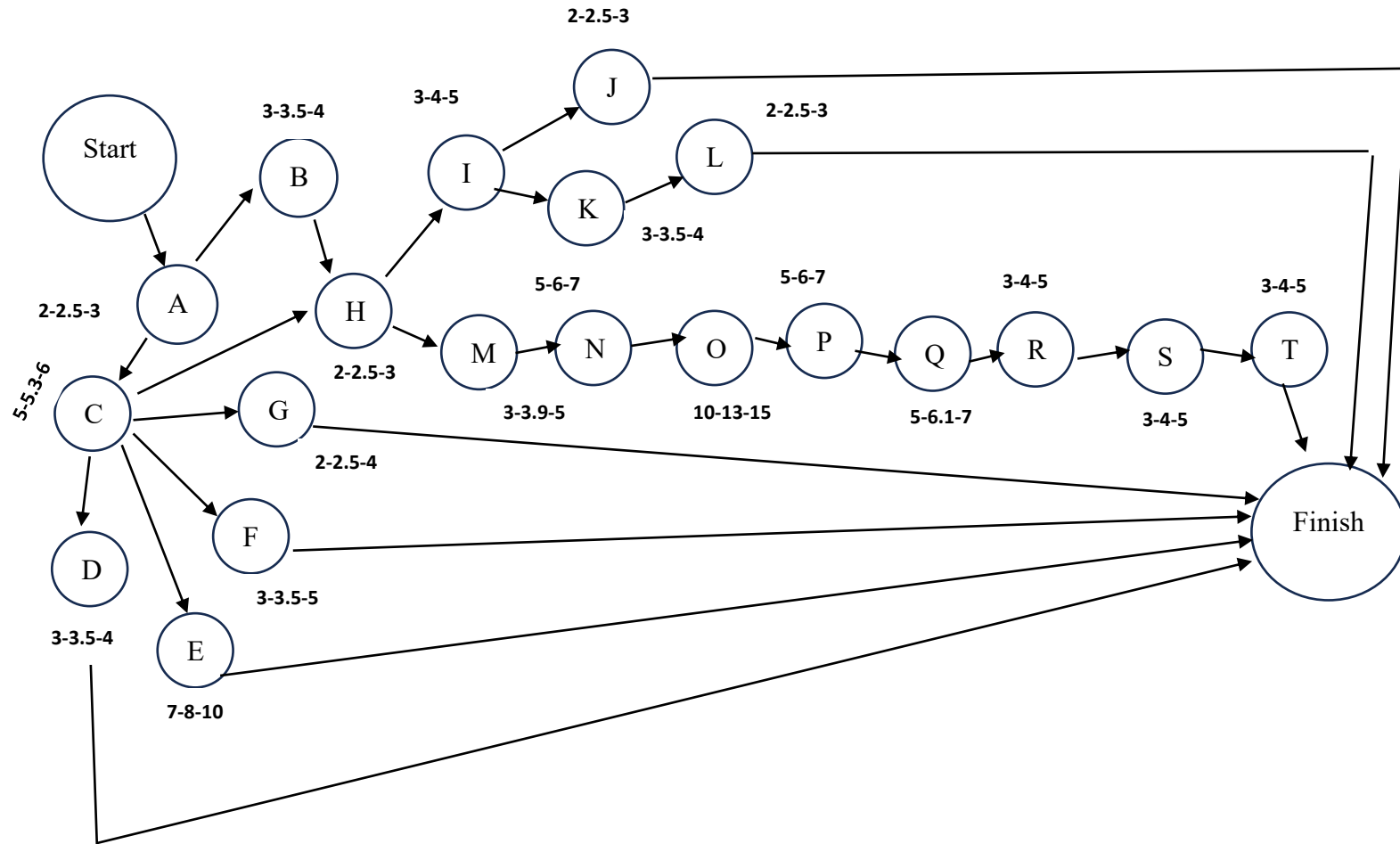| Sr. No.	Task	Category	Start	Finish
A	Define Project Scope and Goals	Inception	01-07-24	03-07-24
B	Conduct Feasibility Study		03-07-24	07-07-24
C	Develop use cases and scenarios	Elaboration	07-07-24	12-07-24
D	Facilitate negotiation and decision-making		12-07-24	16-07-24
E	Create a requirements document		16-07-24	24-07-24
F	Conduct requirements reviews and inspections		24-07-24	28-07-24
G	Address identified defects and inconsistencies		28-07-24	31-07-24
H	Define Scope statement		31-07-24	03-08-24
I	Develop Project Timeline		03-08-24	07-08-24
J	Identify Resource Requirements		07-08-24	09-08-24
K	Estimate Project Budget		09-08-24	13-08-24
L	Identify Project Risks		13-08-24	15-08-24
M	Create Use Case Diagram		15-08-24	19-08-24
N	Database design		19-08-24	25-08-24
O	Software Construction	Construction	25-08-24	07-09-24
P	Unit Testing		07-09-24	13-09-24
Q	Software Testing		13-09-24	19-09-24
R	User Acceptance Testing		19-09-24	23-09-24
S	Client Feedback and System Refinement		23-09-24	27-09-24
T	Final Integration and Full Deployment	Transition	27-09-24	01-10-24

Gantt Chart - Employee training tracker

RESOURCE ALLOCATION

Resource	Lead Role(s)	Supporting Role(s)	Number of Personnel
Project Manager, Business Analyst, Key Stakeholders	Project Manager (1)	Business Analyst (1), Key Stakeholders (1-2)	4
Project Manager, Business Analyst, Technical Experts	Project Manager (1)	Business Analyst (1), Technical Experts (1-2)	4
Business Analyst, System Analyst, Subject Matter Experts (SMEs)	Business Analyst (1)	System Analyst (1), Subject Matter Experts (1-2)	4
Project Manager, Business Analyst	Project Manager (1)	Business Analyst (1)	2
Business Analyst, System Analyst	Business Analyst (1)	System Analyst (1)	2
Business Analyst, System Analyst, Quality Assurance (QA) team, Developers	Business Analyst (1), System Analyst (1)	Quality Assurance (1-2), Developers (1-2)	6
Developers, Business Analyst, QA team	Developers (1-2)	Business Analyst (1), QA team (1)	4
Project Manager, Business Analyst	Project Manager (1)	Business Analyst (1)	2
Project Manager, Project Scheduler	Project Manager (1)	Project Scheduler (1)	2
Project Manager, Functional Managers, Technical Leads	Project Manager (1)	Functional Managers (1-2), Technical Leads (1-2)	5
Project Manager, Finance Team/Analyst	Project Manager (1)	Finance Team/Analyst (1)	2
Project Manager, Project Team, Subject Matter Experts	Project Manager (1)	Project Team (2-3), Subject Matter Experts (1-2)	6
Business Analyst, System Analyst	Business Analyst (1)	System Analyst (1)	2
Database Administrator (DBA), Data Architect	Database Administrator (1)	Data Architect (0-1)	2
Developers	Developers	Developers (4)	4
Developers	Developers (Varies)	Developers (4)	4
QA team	QA team (2-3)	Quality Assurance (1-3)	3
QA team, End-users/Client representatives	QA team (1-2)	End-users/Client representatives (Varies)	2
Developers, Business Analyst, Client representatives	Business Analyst (1)	Developers (1-2), Client representatives (1-2)	5
Developers, DevOps Engineers, System Administrators	DevOps Engineers (1-2)	Developers (1-2), System Administrators (1)	5

PERT - PROGRAM EVALUATION AND REVIEW TECHNIQUE

Sr. No.	Activity	Immediate Predecessor	Time Duration (days)	Optimistic Time	Pessimistic Time	Most Likely Time	Expected Time
A	Define Project Scope and Goals		2-3	2	3	2.5	2.5
B	Conduct Feasibility Study	A	3-4	3	4	3.5	3.5
C	Develop use cases and scenarios	A	5-6	5	6	5.3	5.37
D	Facilitate negotiation and decision-making	C	3-4	3	4	3.5	3.5
E	Create a requirements document	C	7-10	7	10	8	8.17
F	Conduct requirements reviews and inspections	C	3-5	3	5	3.5	3.67
G	Address identified defects and inconsistencies	C	2-4	2	4	2.5	2.67
H	Define Scope statement	B, C	2-3	2	3	2.5	2.5
I	Develop Project Timeline	H	3-5	3	5	4	4
J	Identify Resource Requirements	I	2-3	2	3	2.5	2.5
K	Estimate Project Budget	I	3-4	3	4	3.5	3.5
L	Identify Project Risks	K	2-3	2	3	2.5	2.5
M	Create Use Case Diagram	H	3-5	3	5	3.9	3.93
N	Database design	M	5-7	5	7	6	6
O	Software Construction	N	10-15	10	15	13	12.83
P	Unit Testing	O	5-7	5	7	6	6
Q	Software Testing	P	5-7	5	7	6.1	6.07
R	User Acceptance Testing	Q	3-5	3	5	4	4
S	Client Feedback and System Refinement	R	3-5	3	5	4	4
T	Final Integration and Full Deployment	S	3-5	3	5	4	4

PERT DIAGRAM

Start

2-2.5-3

A

3-3.5-4

B

3-4-5

I

2-2.5-3

J

2-2.5-3

L

3-4-5

K

3-3.5-4

5-5-3-6

C

H

2-2.5-3

M

5-6-7

N

3-3.9-5

O

10-13-15

P

5-6-7

Q

5-6.1-7

R

3-4-5

S

3-4-5

T

3-4-5

G

2-2.5-4

F

3-3.5-5

D

3-3.5-4

E

7-8-10

Finish

Sr. No.	Duration	Earliest Start	Earliest Completion	Latest Start	Latest Completion	Total float	Free float
Start	0	0	0	0	0	0	0
A	2.5	0	2.5	0	2.5	0	0
B	3.5	2.5	6	4.37	7.87	1.87	1.87
C	5.37	2.5	7.87	2.5	7.87	0	0
D	3.5	7.87	11.37	53.7	57.2	45.83	45.83
E	8.17	7.87	16.04	49.03	57.2	41.16	41.16
F	3.67	7.87	11.54	53.53	57.2	45.66	45.66
G	2.67	7.87	10.54	54.53	57.2	46.66	46.66
H	2.5	7.87	10.37	7.87	10.37	0	0
I	4	10.37	14.37	47.2	51.2	36.83	0
J	2.5	14.37	16.87	54.7	57.2	40.33	40.33
K	3.5	14.37	17.87	51.2	54.7	36.83	0
L	2.5	17.87	20.37	54.7	57.2	36.83	36.83
M	3.93	10.37	14.3	10.37	14.3	0	0
N	6	14.3	20.3	14.3	20.3	0	0
O	12.83	20.3	33.13	20.3	33.13	0	0
P	6	33.13	39.13	33.13	39.13	0	0
Q	6.07	39.13	45.2	39.13	45.2	0	0
R	4	45.2	49.2	45.2	49.2	0	0
S	4	49.2	53.2	49.2	53.2	0	0
T	4	53.2	57.2	53.2	57.2	0	0
Finish	0	57.2	57.2	57.2	57.2	0	0

Thus, the time duration estimated is 57.2, with the critical path being

Start → A → C → H → M → N→ O → P → Q → R → S → T → Finish.

COST SCHEDULING

COCOMO II has been used to construct the cost scheduling for the training tracker application. The **softwarecost.org** website has been used. The inputs such as Software size (Function points count), Software Scale Drivers, Software Cost Drivers and Software Labor rates are fed into the model.

Software Size Sizing Method: Function Points
Unadjusted Function Points: 50 Language: Java

Software Scale Drivers

Precedentedness	High	Architecture / Risk Resolution	High	Process Maturity	Nominal
Development Flexibility	Nominal	Team Cohesion	Very High		

Software Cost Drivers

Product

Required Software Reliability	Very High
Data Base Size	Very High
Product Complexity	Very High
Developed for Reusability	Very High
Documentation Match to Lifecycle Needs	High

Personnel

Analyst Capability	Very High
Programmer Capability	Nominal
Personnel Continuity	Nominal
Application Experience	Nominal
Platform Experience	Nominal
Language and Toolset Experience	High

Platform

Time Constraint	Nominal
Storage Constraint	High
Platform Volatility	Nominal

Project

Use of Software Tools	High
Multisite Development	Very High
Required Development Schedule	High

Maintenance Off

Software Labor Rates
Cost per Person-Month (Dollars) 297.67

Based on the above inputs, the following output of estimation is obtained, for each phase under different domains of activity.

Software Development (Elaboration and Construction) Staffing Profile

Effort = 11.9 Person-months
Schedule = 3.1 Months
Cost = $3531

Total Equivalent Size = 2650 SLOC
Effort Adjustment Factor (EAF) = 1.45

Acquisition Phase Distribution

Phase	Effort (Person-months)	Schedule (Months)	Average Staff	Cost (Dollars)
Inception	0.7	1.3	0.6	$212
Elaboration	2.8	3.8	0.7	$848
Construction	9.0	6.4	1.4	$2684
Transition	1.4	1.3	1.1	$424

Software Effort Distribution for RUP/MBASE (Person-Months)

Phase/Activity	Inception	Elaboration	Construction	Transition
Management	0.1	0.3	0.9	0.2
Environment/CM	0.1	0.2	0.5	0.1
Requirements	0.3	0.5	0.7	0.1
Design	0.1	1.0	1.4	0.1
Implementation	0.1	0.4	3.1	0.3
Assessment	0.1	0.3	2.2	0.3
Deployment	0.0	0.1	0.3	0.4