SYSTEM REQUIREMENT SPECIFICATION

Functional Requirements

Project Management
The system shall allow project owners to create, configure, and publish projects.

Recruitment & Assignment
The system shall allow collaborators to apply and owners to approve applicants.

Task Lifecycle Management
The system shall manage task states: *In Progress → Submitted → Approved / Revision*.

Submission Versioning
Each submission shall create a timestamped, immutable version.

XP Automation
The system shall award XP only after explicit approval by the project owner.

XP Calculation Rules
XP shall be calculated using:

- Task difficulty

- Deadline adherence

- Rework penalty
  Final XP = Base XP + Bonus − Penalty

Mentorship Support
The system shall allow mentors to provide guidance and recommendations without evaluation authority.

Audit Logging
All critical actions shall be logged immutably.

Administration & Enforcement
The system shall support warnings, suspensions, and account bans.

Non-Functional Requirements

Transparency
All workflow transitions must be traceable through audit logs.

Determinism
XP calculation shall be rule-based and deterministic.
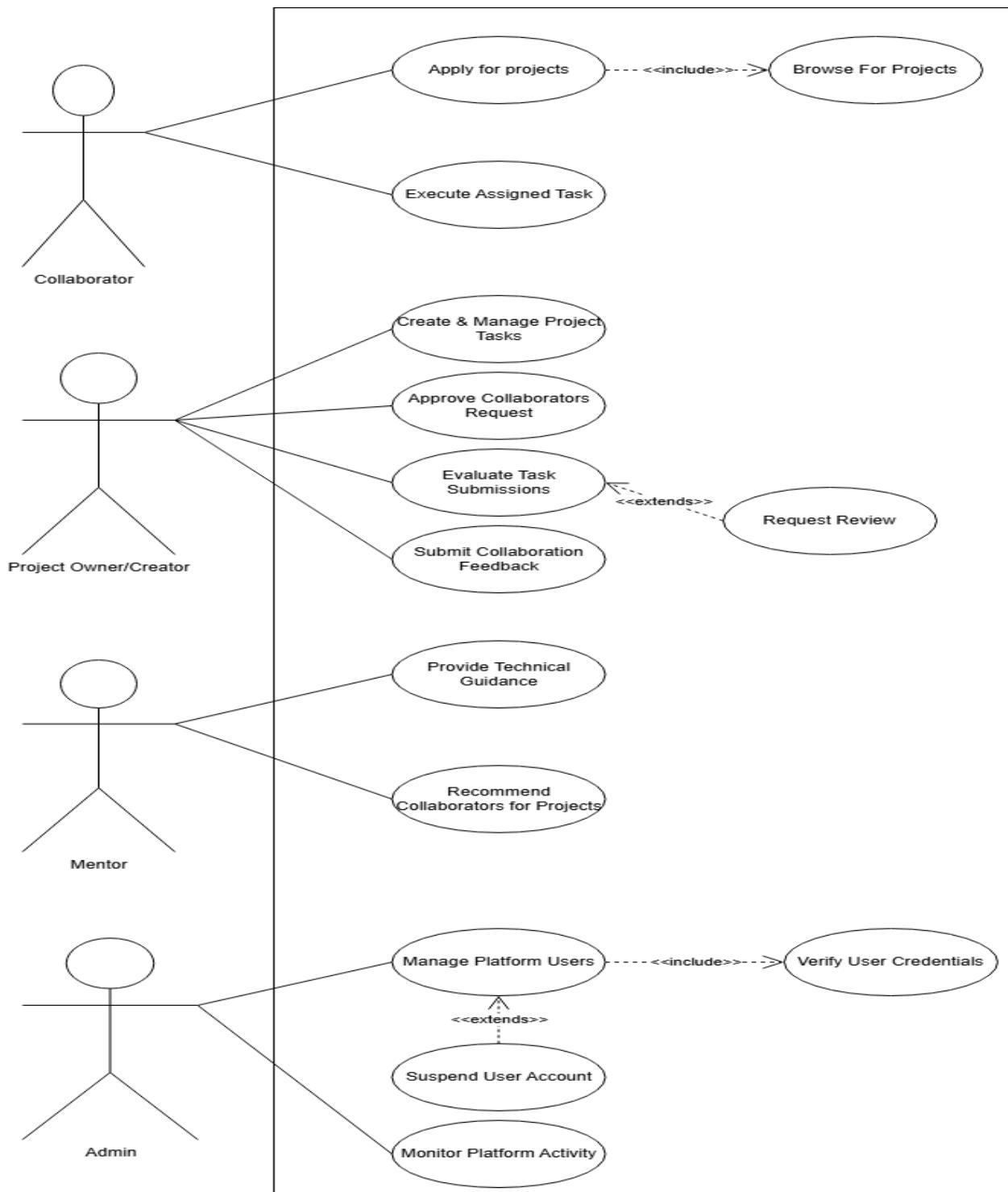
Security
Role-based access control must be enforced.

Reliability
XP transactions must be idempotent (exactly once).
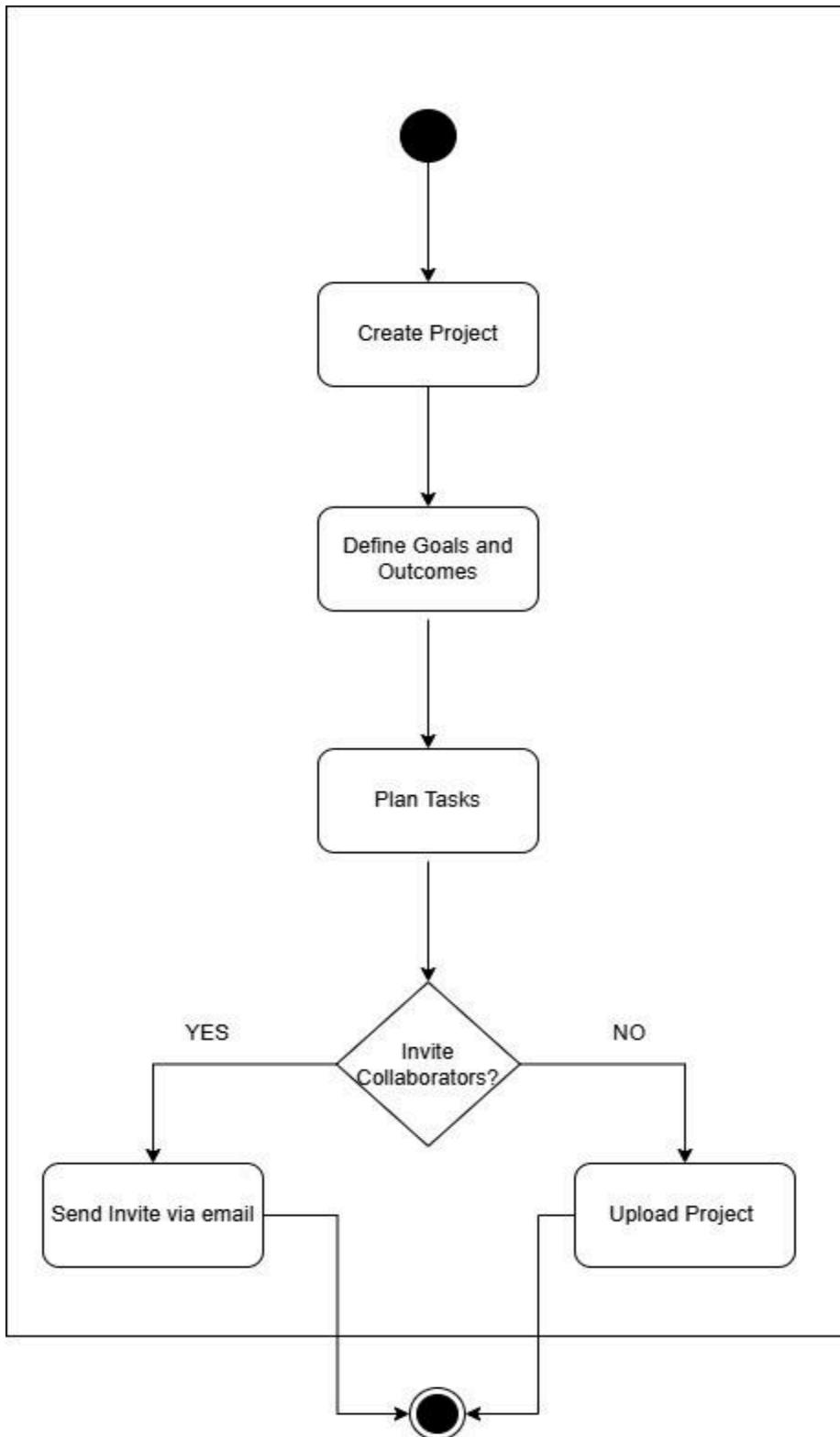
Scalability
System shall support concurrent users and multiple projects.

USE CASE DIAGRAM
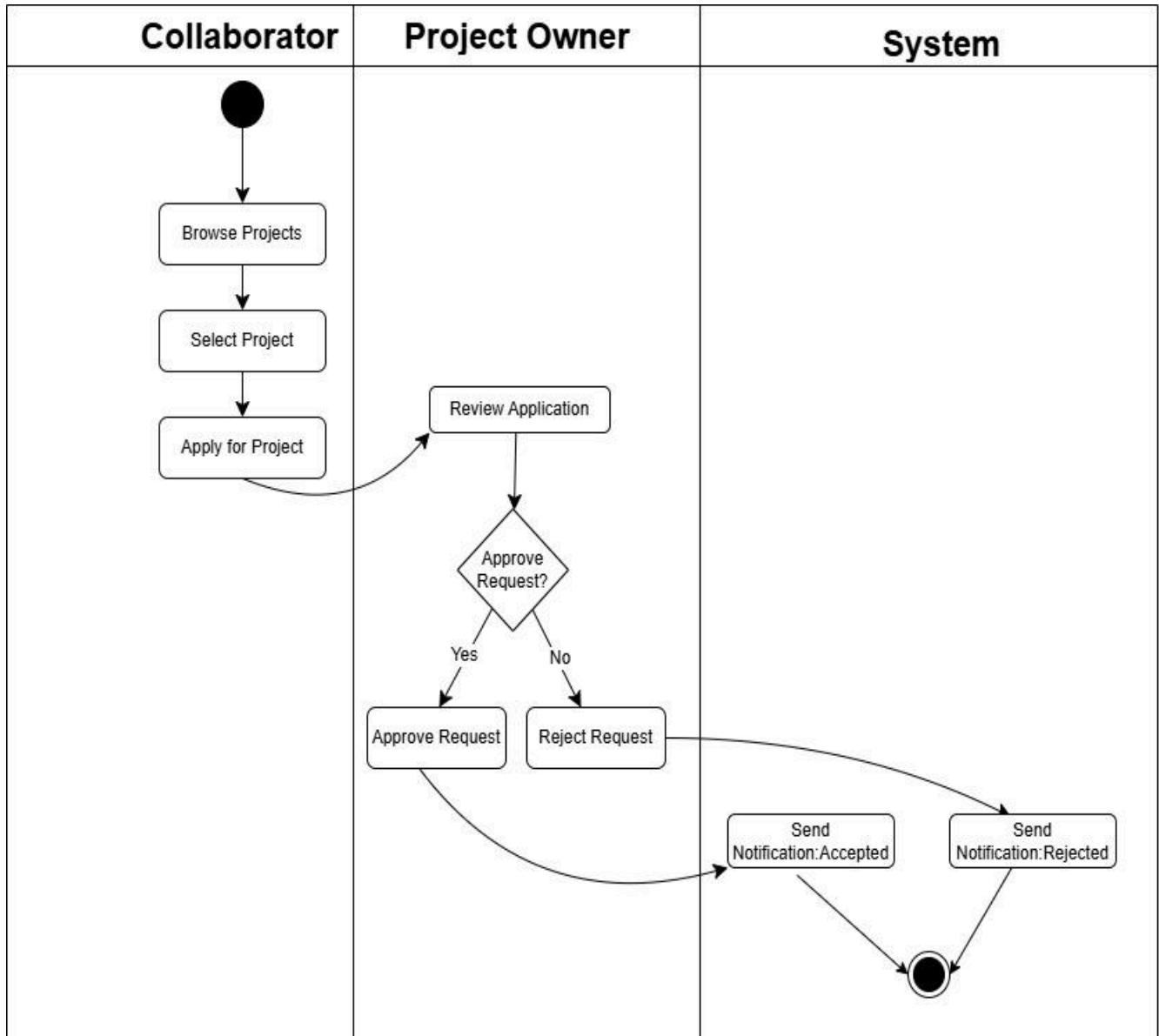
ACTIVITY DIAGRAMS
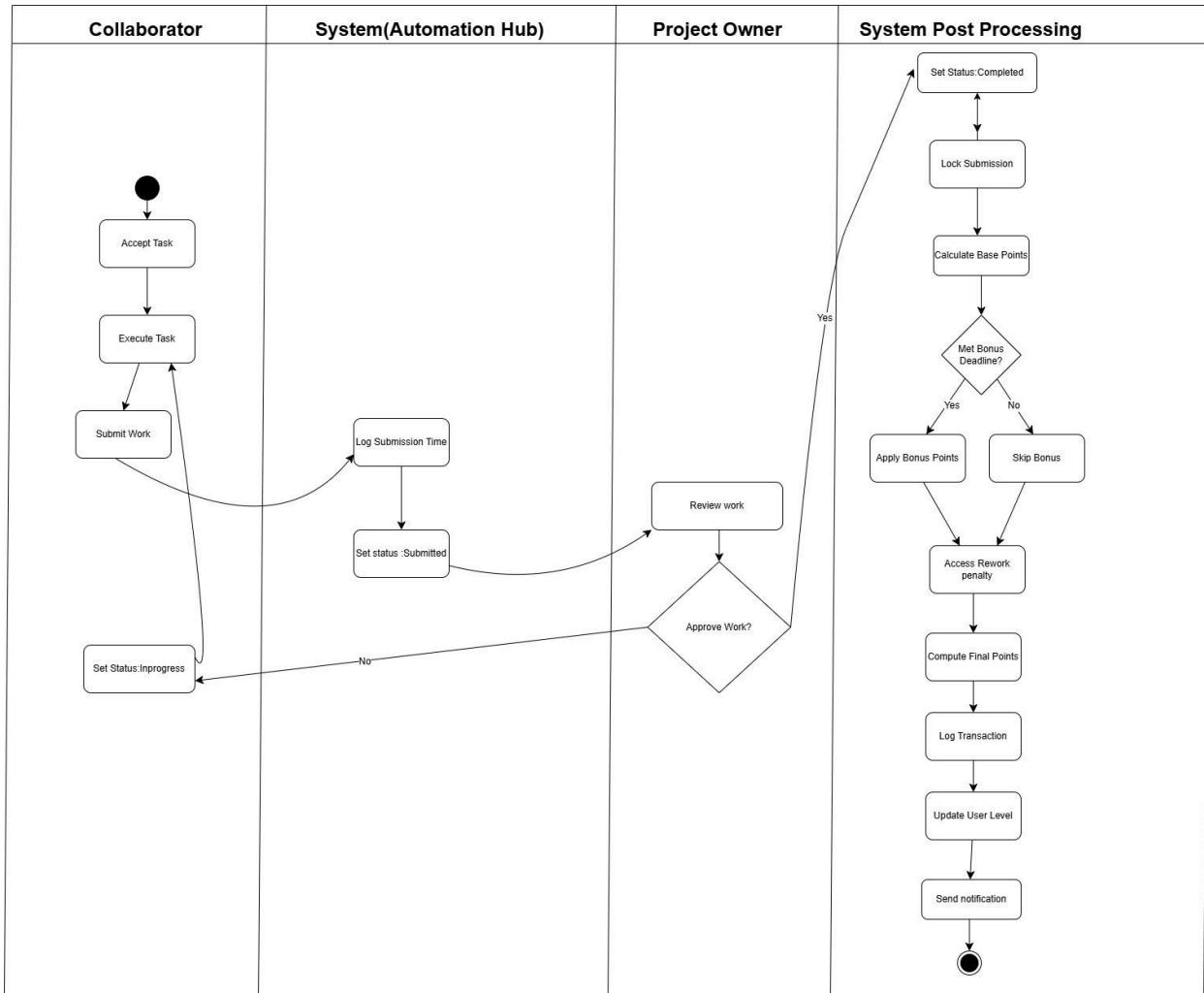
PROJECT CREATION
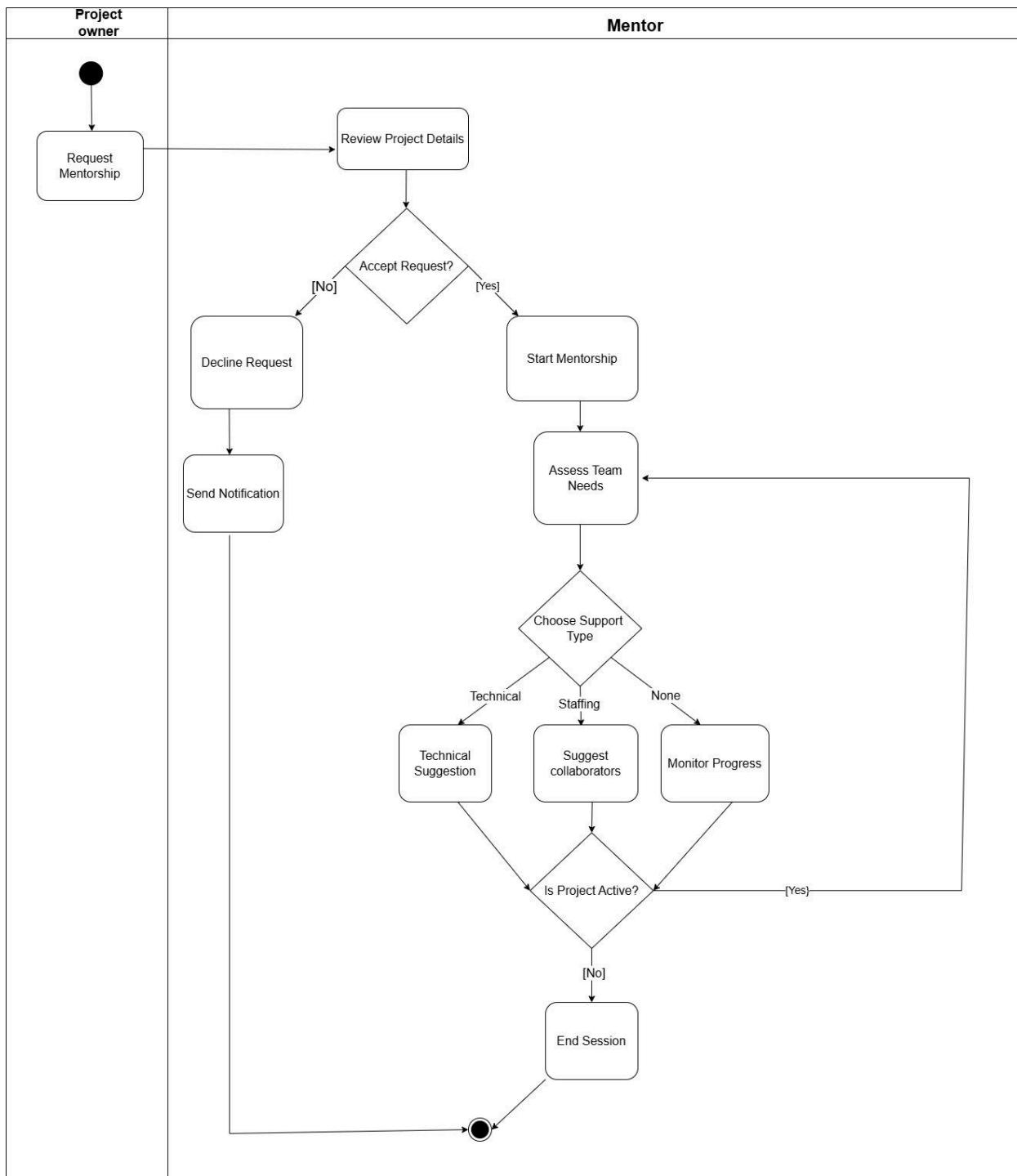
RECRUITMENT

TASK EXECUTION

Collaborator	System(Automation Hub)	Project Owner	System Post Processing

Collaborator
- ● (start)
- Accept Task
- Execute Task
- Submit Work
- Set Status:Inprogress

System(Automation Hub)
- Log Submission Time
- Set status :Submitted

Project Owner
- Review work
- Approve Work? (decision)
  - No → Set Status:Inprogress
  - Yes → Set Status:Completed

System Post Processing
- Set Status:Completed
- Lock Submission
- Calculate Base Points
- Met Bonus Deadline? (decision)
  - Yes → Apply Bonus Points
  - No → Skip Bonus
- Access Rework penalty
- Compute Final Points
- Log Transaction
- Update User Level
- Send notification
- ◉ (end)

MENTORSHIP WORKFLOW

Project owner	Mentor

Request Mentorship

Review Project Details

Accept Request?

[No]

[Yes]

Decline Request

Start Mentorship

Send Notification

Assess Team Needs

Choose Support Type

Technical

Staffing

None

Technical Suggestion

Suggest collaborators

Monitor Progress

Is Project Active?

[Yes]

[No]

End Session

ADMIN WORKFLOW

Monitor platform Activity

Policy Violation?
No

Yes

Review Audit Log

Verify User Identity

Violation confirmed?

No

yes

Resolve Dispute

Assess Severity

Bannable??

No

Yes

Issue Warning

Suspend Account

Update Audit logs

SEQUENCE DIAGRAM

Actors: Project owner, Collaborator, Mentor, Administrator
Services: Project Core Service, Mentor Service, XP Engine, Admin Service

Setup & Task Definition
1. Create Project
2. Project Live
3. Define Task List
4. Tasks Published

Recruitment & Assignment
5. Apply for project
6. Notify New Applicant
7. Approve Applicant
8. Notify "welcome to team"
9. Assign Task to collaborator
10. Notify "Task Assigned"

Mentorship Logic
opt [Project Needs guidance]
11. Request Mentor
12. Notify "help needed"

alt [Mentor Accepts]
13. Click Accept
14. Link Mentor to project
15. Notify "Mento Joined"

opt [Talent Scouting]
16. Recommend Specialist
17. Generate Invite
18. Send Invitation

[Mentor Declines]
19. Click Decline
20. Notify "Reqeust Declined"

Executipn & XP Automation
Loop [Task Submission Cycle]
21. Upload/Revise Work
22. Notify "Review nedded"
23. View Submission

alt [Work Approved]
24. Click Approve
25. Trigger XP Calculation

XP Logic
1. Get difficulty
2. Check deadline
3. Calculate points

26. Update Leaderboard
27. X P awarded
28. Set Status "Completed"
29. Notify "task done & XP Earned"
Loop Ends

[Work Rejected]
30. Click Reject
31. Set Status "Revision"
32. Notify "fix & Resubmit"
Retry Required

[Report Work]
33. Report User
34. notify "Flag Raised"
35. view report and verify
36. Suspend Access to project
37. Suspend User/Issue a warning

Closure and Oversight
38. Mark Project Finished
39. Archive project data
40. Generate Final Report
40. Report Ready