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|  | Department of Computer Engineering  A.Y-2025-26 |

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| Semester | T.E Semester V – CMPN |
| Subject | Web Devlopment Lab |
| Subject Professor In-Charge | Prof. Divya Nimbalkar |
| Assisting Teachers | Prof. Divya Nimbalkar |
| Laboratory | M 516A |

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| Student Name | Sunil Saini | |
| Roll Number | 23102A0036 | |
| Grade and Subject Teacher’s Signature |  |  |

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| Experiment Number | 9 |
| Experiment Title | COCOMO Cost Estimation |
| Project Title | Smart Hire: Al-Driven Interview Platform for Smart Recruitment |
| Project Overview | This project aims to develop a two-sided Al-powered platform that streamlines the recruitment process for both interviewers and interviewees. For recruiters, the system automates resume shortlisting,  suggests suitable roles, and analyses candidates' online interviews based on facial expressions, voice tone, and engagement. It also sends automatic acceptance or rejection emails and offers personalized task suggestions.  On the interviewee side, the platform allows users to explore job openings, submit applications, and receive Al-driven feedback, even in the case of rejection. |
| Github Link | <https://github.com/Aashna890/SmartHire> |
| Overview | **COCOMO Estimation for 5,000 LOC (5 KLOC)**  **Assumption: Organic Mode (small/simple project, familiar team).**  **🔹 1. Basic COCOMO**  **Formulas:**   * **Effort (E) = *a × (KLOC)^b*** * **Duration (D) = *c × (E)^d*** * **Team Size (P) = *E / D***   **Constants for Organic Mode:**   * **a = 2.4, b = 1.05** * **c = 2.5, d = 0.38**   **Calculation:**    **🔹 2. Intermediate COCOMO**  **Adjustment with Effort Adjustment Factor (EAF):**   * **Assume average-to-slightly-above project complexity.** * **Take EAF ≈ 1.15.**     **🔹 3. Detailed COCOMO (Phase-Wise Distribution)**  **For a small organic project, approximate effort distribution is:**   |  |  |  |  | | --- | --- | --- | --- | | **Phase** | **% Effort** | **PM** | **Hours** | | **Planning & Requirements** | **6%** | **0.9** | **144** | | **System/Software Design** | **16%** | **2.4** | **384** | | **Detailed Design** | **26%** | **3.9** | **624** | | **Coding & Unit Testing** | **42%** | **6.3** | **1008** | | **Integration & Testing** | **10%** | **1.5** | **240** | | **Total** | **100%** | **15** | **2390** |   **✅ Detailed COCOMO Output: ~15 PM distributed across phases, ~6.3 months, ~2–3 people.**  **🔹 Comparison Table**   |  |  |  |  |  | | --- | --- | --- | --- | --- | | **Model** | **Effort (PM)** | **Duration (Months)** | **Team Size** | **Hours** | | **Basic** | **~13** | **~6.0** | **2–3** | **~2,080** | | **Intermediate** | **~15** | **~6.3** | **2–3** | **~2,390** | | **Detailed** | **~15 (phases)** | **~6.3** | **2–3** | **~2,390** |   **🔹 With Your Constraint (6 People × 5 Months)**    **👉 Observation: The available team capacity (4,800 hrs) exceeds the estimated requirement (2,390 hrs). This means the project can be comfortably delivered with 6 people in 5 months, with buffer for risks, additional features, or earlier delivery.**  **Conclusion**  **COCOMO is a software estimation model that predicts effort, time, and team size based on project size. In this case:**   * **Basic: ~13 PM, 6 months, 2–3 people.** * **Intermediate/Detailed: ~15 PM, 6.3 months, 2–3 people.** * **With given resources (6 × 5 months = 4,800 hrs), the project is well-staffed and likely to finish ahead of schedule.** |
| Conclusion | COCOMO is a software estimation model that predicts effort, time, and team size based on project size, with Basic, Intermediate, and Detailed levels for increasing accuracy. |