**Project 2 Person-Hours: Estimates and Actuals**

**Estimated Person-Hours**

This section describes the estimated person-hours for each task, the description of each task, and how those tasks are assigned to team members.

**Task Descriptions:**

1. Refactoring: Refactor the code so that it meets Project 1 requirements
2. UML Diagram: Design the custom addition feature and develop the corresponding UML diagram
3. Implementing AI: Implement the 3 different AI difficulties
4. Implementing Custom Addition: Implement the custom addition feature in the code
5. Testing and Debugging: Test the entire game, including human & AI opponents, as well as the custom addition
6. Documentation: Provide hour estimates and draft and revise system documentation
7. GTA Team Meeting: Provide a standup meeting with the supervision of the GTA.

**Task Estimate Gantt Chart**

Below is a Gantt chart that shows the estimates of each task in addition to the team members responsible for different stages of the project.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hours  Task | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16.25 |
| 1. Refactoring: **4 hours** | Shad | Nikhil | Nikhil | Nikhil |  |  |  |  |  |  |  |  |  |  |  |  |
| 2. UML Diagram: **3 hours** |  |  | Shad | Rahul | Nikhil |  |  |  |  |  |  |  |  |  |  |  |
| 3. Implementing AI: **3 hours** |  |  |  |  |  | Nikhil | Nikhil | Rahul |  |  |  |  |  |  |  |  |
| 4. Implementing Custom Addition: **4 hours** |  |  |  |  |  | Shad | Shad | Greg | Greg |  |  |  |  |  |  |  |
| 5. Testing and Debugging: **6 hours** |  |  |  |  |  |  |  |  | Rahul | Rahul | Rahul | Greg | Abir | Abir |  |  |
| 6. Documentation: **5 hours** | Abir |  |  |  |  |  |  |  |  |  |  | Shad | Greg | Abir | Abir |  |
| 7. GTA Meeting: **1.25 hours** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Abir  Rahul  Shad  Nikhil  Greg |

**Final Estimate for Person-Hours**

According to the Gantt chart above, the project will take a total of 25 person-hours. This is derived by adding hours taken for tasks 1 through 6 (Task #1 + Task #2 + Task #3 + Task #4 + Task #5 + Task #6 = 4 + 3 + 3 + 4 + 6 + 5 + 1.25 = 26.25 hours). Since we have 26.25 hours to divide among 5 team members, **each team member is assigned 5.25 estimated person-hours**. The breakdown of tasks and person-hours is already seen in the Gantt chart above.

**Actual Hours: Overall Project**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Date + Hours  Task | 9/26 | 9/27 | 9/28 | 9/29 |
| 1. Refactoring | Nikhil: 1  Greg: 1 | Nikhil: 1  Greg: 1 |  |  |
| 2. UML Diagram |  |  | Shad: 1 |  |
| 3. Implementing AI |  |  | Shad: 2 |  |
| 4. Implementing Custom Addition |  |  | Nikhil: 0.5 | Rahul: 1 |
| 5. Testing and Debugging |  |  | Rahul: 0.5 | Nikhil: 3  Shad: 1  Rahul: 3  Abir: 1 |
| 6. Documentation | Abir: 0.25 | Shad: 1 | Abir: 1 | Abir: 2  Greg: 2 |
| GTA Meeting |  | Abir: 0.25  Shad: 0.25  Rahul: 0.25  Nikhil: 0.25  Greg: 0.25 |  |  |

**Actual Hours: Per Person**

|  |  |
| --- | --- |
| Name | Hours worked |
| Shad | 5.25 |
| Abir | 4.5 |
| Nikhil | 5.75 |
| Greg | 4.25 |
| Rahul | 4.75 |
| **Total Hours** | **30.25** |

The total hours worked was 30.25, meaning we were 4 hours over our estimate.