Project Part 2

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Title: Galaga Recreation

Project Summary: As a team we are trying to implement the old Galaga game with the same basic functionality as the original with multiple levels, different spacecraft’s, and colors. When we are finished with the game we want to have a fully functioning Galaga game with with extra functionality such as power ups.

Project Requirements:

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| ID | Requirements | User | Priority |
| BR-001 | No Business Requirements | N/A | N/A |

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| ID | Requirements | User | Priority |
| UR-001 | User’s ship has to move left or right with its respected arrow keys | General User | Medium |
| UR-002 | User’s ship shoots gun to try and hit enemy spacecraft using space bar | General User | Medium |
| UR-003 | User can pause the entire game by using the ‘p’ key | General User | Low |

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| ID | Requirements | User | Priority |
| FR-001 | Non-Player Characters (NPCs) travel on different predetermined paths when entering the screen at the beginning of the game | NPCs | High |
| FR-002 | NPCs don’t overlap on different flight paths | NPCs | Medium |
| FR-003 | NPCs can fire after their shooting cool down period | NPCs | Medium |
| FR-004 | NCPs have varying point values | NPCs | Low |
| FR-005 | NCPs get destroyed when hit | NPCs | Low |
| FR-006 | NCPs have different health | NPCs | Low |
| FR-007 | User ship has shooting cool down period | General User | Medium |
| FR-008 | User’s ship gets destroyed when hit and tracks the amount of lives left | General User | Medium |
| FR-009 | Track total score and levels | General User | Low |
| FR-010 | Keep track of high scores | General User | Low |

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| ID | Requirements | User | Priority |
| NFR-001 | User has to be able to run a .jar file | General User | N/A |
| NFR-002 | Include a readme (usability/user controls) on the title screen | General User | Medium |
| NFR-003 | User can pick to read high scores or play game on title screen | General User | Low |
| NFR-004 | If user gets high score allow them to type name in on the exit screen | General User | Low |
| NFR-005 | If user dies allow option to play again or exit | General User | Medium |

Users and Tasks:

Activity Diagrams:

Data Storage:

The only persisting data we will have in our application is a file which keeps track of high scores. This will be dumped into a text file, and shown to the user as output when “High-Scores” is selected. Another interesting way we will be handling data, is that we will have one ArrayList of missiles which all the ships add to. It makes sense to do this instead of breaking them up into User/NPCMissile ArrayLists because the only variability between the two will be their Y velocity. This helps minimize repeat code.

UI Mockups:

User Interactions:

Class Diagrams: