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| **IS303 Concurrency Programming Project**  **PROJECT WRITE-UP** | |
| Group ID | *Not yet allocated – keep this blank* |
| Name | *Tan Guan Ze* |
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| Item | Comments |
| Overall description | The project consists of a game application whereby the user would have to shoot and hit 1 of the moving targets. There will be 40 moving targets (moving left and right) and the user would be required to fire a shot (from the bottom, middle of the screen), to hit any of the target. Objective of the game is to use the least amount of time and shots, before hitting any target. Game will end once a target is hit, and the summary of the results will be printed on closing of the game window. |
| Justification for multi-threading | To ensure that the background music, timer and painting of the shapes to be done concurrently, a multithread is needed. 1 thread is used to run the main thread, 1 is to run the background music, 1 for timing and 1 for painting the shapes (moving the shapes). |
| Transactional integrity | 1. Board.java, line 66-72 2. Board.java, line 91-104 3. Window.java, line 65-67 |
| Performance | *Have you ensured that critical sections are not unnecessarily “lengthy”?* YES  *Is there any other way to improve “liveness”?* NO  *Did you do anything note-worthy to improve performance of your program?* Locking only when race condition may occur. |
| Innovation | Implemented Java Animation GUI and background music to come up with a fun yet challenging game. |
| Adherence to coding conventions & good practices | *Most of the idea was not taught in class such as use of animation and background music.* |
| Good documentation | Documented all the methods and steps. |
| Evidence of exploration | Java animation and use of multithreads to run animation |
| Others | *NIL* |
| Acknowledgements/References | *Background music taken from https://soundimage.org/fantasywonder/* |