Game Design Studio Two

"Mowdown"

Team Four

Report for Sprint One

10 / AUG / 2015 – 23 / AUG / 2015

Team Members:

Matthew Carver – 12028130
Deinyon Davies – 11688025
The most honoured Master of the Scrum, Sir Robert McClelland – 11743693
Dinh Bao Anh (Brendan) Vo – 11437237
Jesse Walker – 11729631

FOREWORD

Mowdown is a 'Demolition Derby' style videogame in which the player may assemble a modified domestic **lawnmower** by means of attaching defence appliances and weapons. Players compete against at least one autonomous opponent – a strategically formed battle-mower – as if both are controlled via R/C.

SPRINT PLAN AND EXECUTION

For this first scrum of the project "*Mowdown*", the team committed 13 tasks to the Sprint Log at the preliminary meeting. The Sprint Log proposed a total estimated investment of 840 minutes, with an estimated median task duration of 50 minutes. Having completed the sprint backlog, it was discussed that the team had likely neglected several critical tasks, and as such, the backlog would soon be expanded. The sprint would optimally be completed in 490 minutes.

During the execution of the scrum, 9 critical and prerequisite tasks became apparent, which were completed and appended to the Sprint Log when necessary. The auxiliary tasks assumed an additional estimated duration of 290 minutes, expanding the total estimated sprint workload to 1,130 minutes.

At Sprint finalisation, the Sprint Log totalled 22 expected and unexpected tasks. The team observed a total logged workload **1,165 minutes** (19.42 hours).

SCRUM MEETING LOGS

10 / AUG / 2015
4:30pm – 6:00pm
Location: UTS Building 11, Game Design Studio Laboratory
Members present: Brendan, Deinyon, Jesse, Matthew, Robert

The team identified backlog items and discussed time estimates.

11 / AUG / 2015
11:30am - ~10:00pm
Location: Electronic Discussion via Facebook
Members present: Deinyon, Jesse, Robert

Discussion of the Unity NavMesh API, and propositions for the application of the CalculatePath() functionality in order to program an application-specific NavMesh

Agent, eventually to be manipulated by a Finite State Machine. Subsequent discussion of how the AI will respond to waypoints that greater than 180° from the AI vehicle's forward vector.
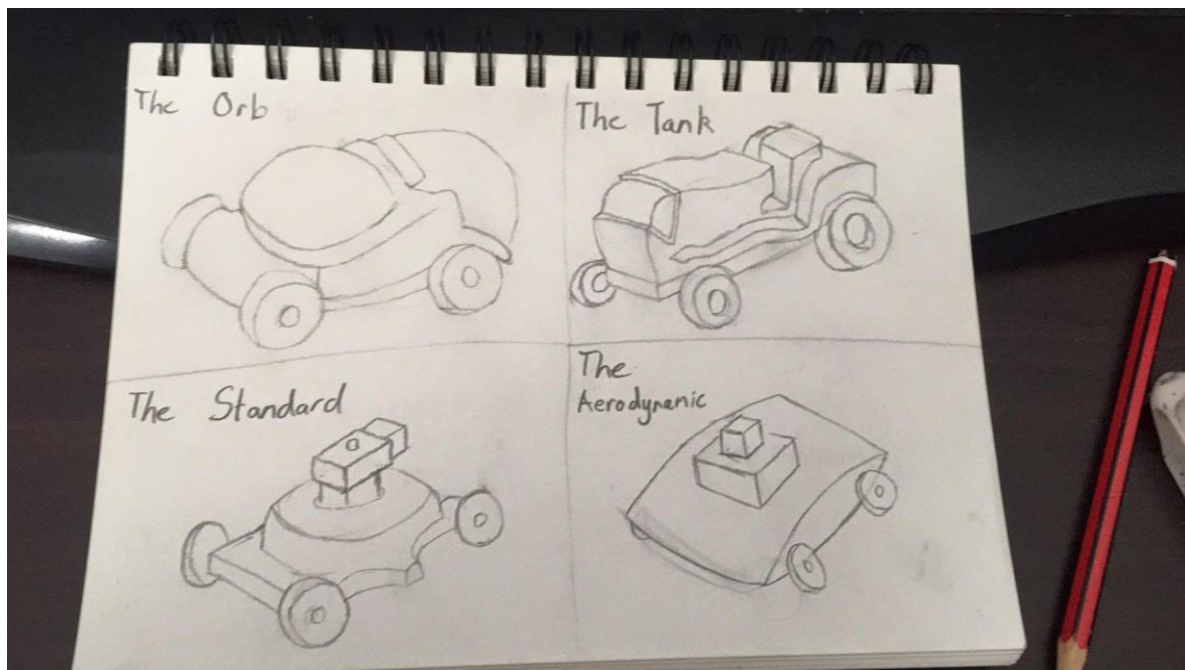
11 / AUG / 2015
    2:30pm ~ 7:00pm
Location: Electronic Discussion via Facebook
Members present: Brendan, Deinyon, Jesse, Matthew, Robert

Presentation and discussion of four character model (lawnmower) design prototypes, each presenting distinct stylistic properties. Three of four members expressed preference for the mildly-stylised design ("The Standard").

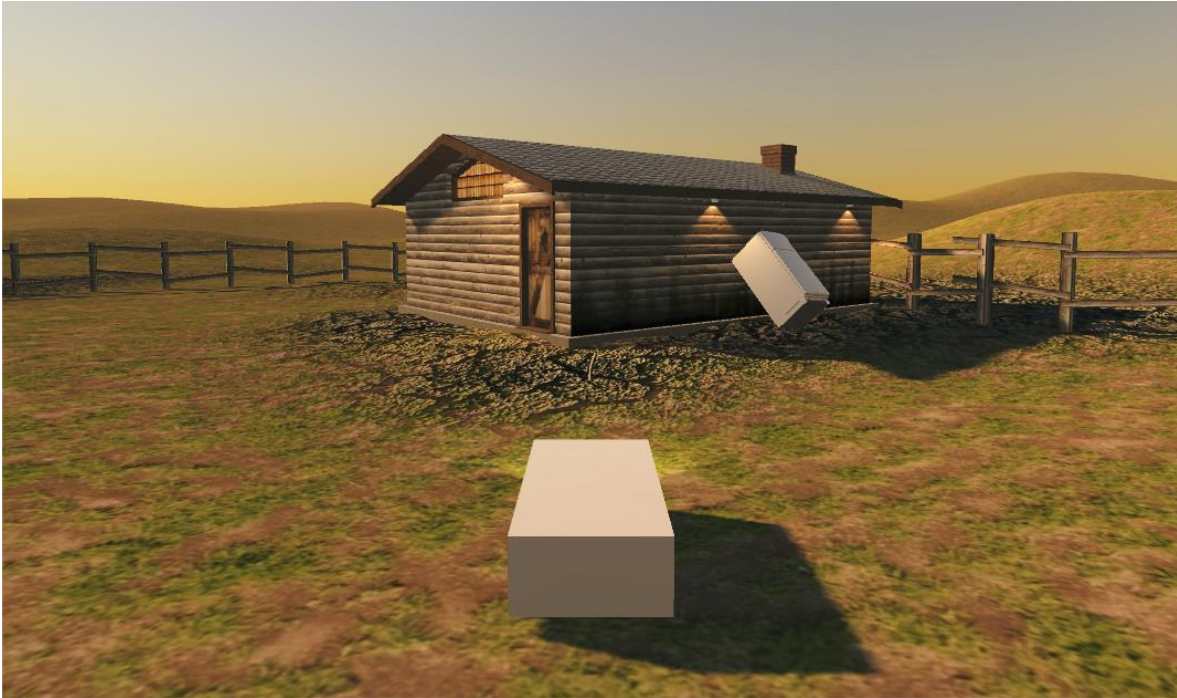See the following figure for the four design prototypes:

13 / AUG / 2015
    6:00pm – 14 / AUG / 2015 at 11:30am
Location: Electronic Discussion via Facebook
Members present: Deinyon, Jesse, Robert

Initial presentation of Level One design, as well as discussion regarding design style. The following figure is the initial Level One design.

15 / AUG / 2015
    5:00pm – 6:00pm
Location: Electronic Discussion via Facebook
Members present: Deinyon, Robert

Discussion of initial random-number based damage mechanics implementation.

Subsequent discussion of maintaining several concurrent version control branches for disjoint work. Team members concluded that distributing workload into several branches during project development would mitigate merging issues.

15 / AUG / 2015
    8:00pm – 10:00pm
Location: Electronic Discussion via Facebook
Members present: Deinyon, Matthew, Jesse

Presentation and discussion of modified damage logic which employs the angle between the collision incident point and the opponent in order to issue more damage for side collisions.

Team members also discuss how equal-mass and equal-angle collisions should deal damage to players and opponents. Discussion resulted in the collective opinion that the mower with the higher velocity should deal the majority of damage to its opponent.

16 / AUG / 2015
        4:00pm – 5:00pm
Location: Electronic Discussion via Facebook
Members present: Brendan, Deinyon, Matthew, Jesse

Presentation of work-in-progress lawnmower model. Team members discuss the separation of mesh components for interfacing with animation and component-selection code.

See the following figure of the prototype character model.

16 / AUG / 2015
        4:00pm – 6:00pm
Location: Electronic Discussion via Facebook
Members present: Brendan, Deinyon

Discussion of improved health and experience meters, as well as the floating (not yet billboarded) mini-health-bar.

22 / AUG / 2015
        7:00am – 12:00pm
Location: Electronic Discussion via Facebook
Members present: Deinyon, Robert

Discussion of Xbox 360 Controller implementation, and "boost system".
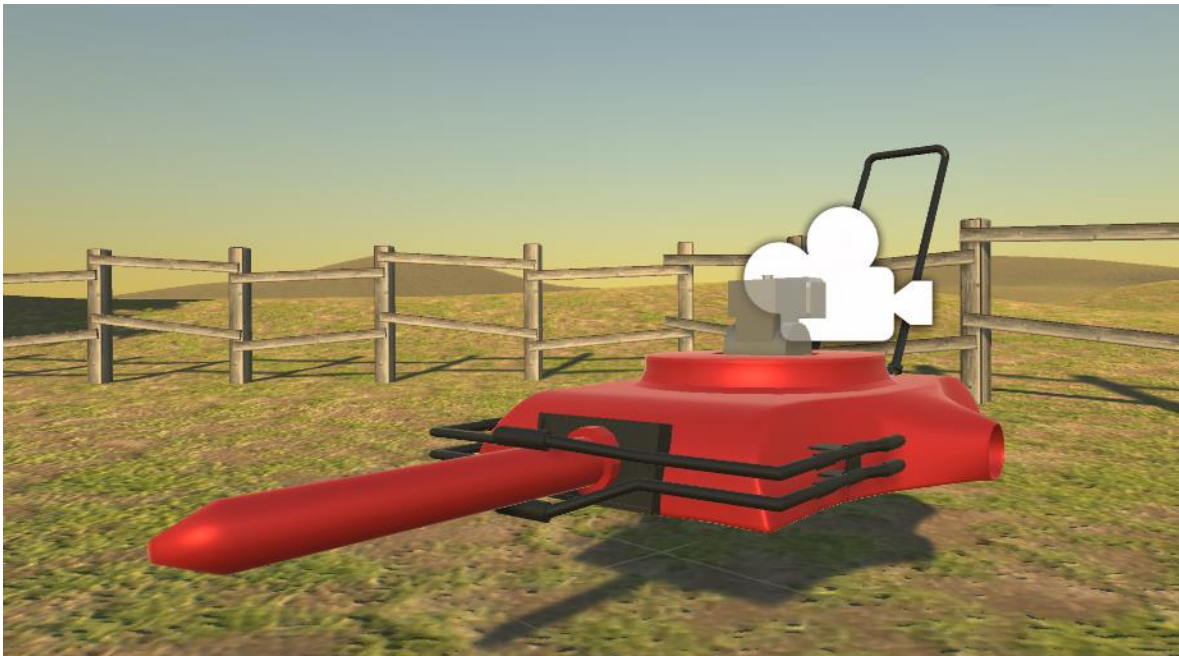
23 / AUG / 2015
     8:00pm
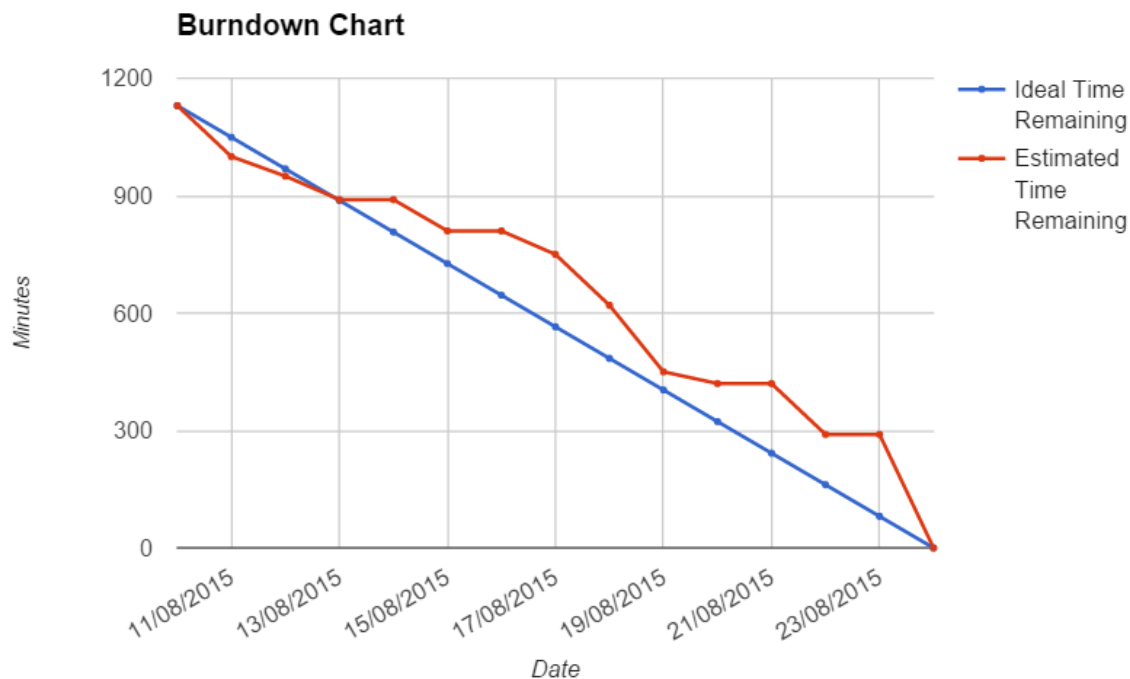**Location:** Electronic Discussion via Facebook
Members present: Brendan, Deinyon, Jesse, Matthew, Robert

Demonstration of modified vehicle attachment models including the mower handle and spike attachment (see figure).

Continued team discussion on project closure and final bug-fixing and feature implementation.

BURNDOWN CHART

Burndown Chart

REFLECTION

Sprint One of the Mowdown project was a success. As illustrated by the Burndown Chart, development was closely constrained to the ideal path, with work completed on a regular, nearly daily basis. All tasks were completed within the time-box, including additional tasks. A significant workload was completed on the first day of Sprint One as the result of associated research and testing that was completed prior to formal project initiation.

All team members contributed significantly to the project, observing excellent communication and collaboration skills. Teamwork was simplified through the decision to allocate several parallel version control branches to distinct tasks; merging disjoint components from multiple team members did not interfere with the work of any other member, as members were mostly bound to their own branch during development until merging into the master branch was necessary.

SPECIAL CIRCUMSTANCES

N/A

VERSION CONTROL COMMIT LOG

commit f598c93c8dffa62531b28f51134c2871450ee52f
Merge: 5b140ad c833cb7
Author: Deinyon Davies <deinyond@gmail.com>
Date: Sun Aug 23 22:47:06 2015 +1000

    Merge   branch   'master'   of
    https://github.com/ddoodm/GameStudioTwo

commit 5b140adc5acc46a6c2e29da09377a380c45b3eb6
Author: Deinyon Davies <deinyond@gmail.com>
Date: Sun Aug 23 22:41:49 2015 +1000

    Documentation update

commit c833cb707fae03d07776a51ffba3859eaac4295c
Author: robafett <ram_95@msn.com>
Date: Sun Aug 23 22:40:38 2015 +1000

    SceneTransitioning

commit b6ec51cf33988873424efb983f35f8a56cf46677
Author: Deinyon Davies <deinyond@gmail.com>
Date: Sun Aug 23 22:06:59 2015 +1000

    Update documentation burndown chart and log

commit e1df4c04266cc41e29b5bbaff80d422fe091aa2f
Author: JesseWalker11729631 <11729631@student.uts.edu.au>
Date: Sun Aug 23 21:40:51 2015 +1000

    Spike Selection

commit 0cf1ec7e2b48b5ff9a7799d23084ba165fab9c44
Author: Deinyon Davies <deinyond@gmail.com>
Date: Sun Aug 23 21:24:38 2015 +1000

    Initial commit of Sprint One documentation

commit a23671afd3877e9ad3ed51f4f9d864a857a75835
Author: robafett <ram_95@msn.com>
Date: Sun Aug 23 21:17:41 2015 +1000

    Player/Enemy flipped results in loss

commit cf116df6697e50e10a3eff236c664df30f93b81f
Author: robafett <ram_95@msn.com>
Date: Sun Aug 23 21:08:55 2015 +1000

    Added Timer, aswell as restart button

commit e59419df3291289161750142a7a91a79a01583cb
Author: Deinyon Davies <deinyond@gmail.com>
Date: Sun Aug 23 18:43:09 2015 +1000

    Fixed a few bugs with the Item Store

commit b1e055b6c862888b2e3ac5a5df2075e254f829f4
Author: Deinyon Davies <deinyond@gmail.com>
Date: Sun Aug 23 17:18:04 2015 +1000

    Vehicle Attachment Models & Gizmo Fixes

    Updated the handle and spike models (I hope nobody minds).

    Rob, am I using your weapon weight script correctly?

commit 2bde9f8486e71abe3eeda0095d29f0a05df099e5
Author: JesseWalker11729631 <11729631@student.uts.edu.au>
Date: Sun Aug 23 16:09:28 2015 +1000

    Player can "test" their mower

commit 427a66939f9a3ad519ac496162e987bc69c560a8
Author: JesseWalker11729631 <11729631@student.uts.edu.au>
Date: Sun Aug 23 15:40:31 2015 +1000

    Global Position did 9/11

commit 6c34282b5796a817d1139bae52e25b0a0f9e11b5
Author: JesseWalker11729631 <11729631@student.uts.edu.au>
Date: Sun Aug 23 14:05:21 2015 +1000

    Stupid Spike Position

commit c3a8579ac7afc73c3f98248794650c9cc395e0d3
Author: JesseWalker11729631 <11729631@student.uts.edu.au>
Date: Sun Aug 23 13:48:30 2015 +1000

    Added colours

commit 76bf7355d9f4e2d05cf2f53b8530360a5256d1c6
Merge: d4f8219 ddd1e4a
Author: Deinyon Davies <deinyond@gmail.com>
Date: Sun Aug 23 12:39:55 2015 +1000

    Merge   branch   'master'   of
https://github.com/ddoodm/GameStudioTwo

commit d4f821927a6dcda990c0d2be0931876e9aa9a9ff
Author: Deinyon Davies <deinyond@gmail.com>
Date: Sun Aug 23 12:39:35 2015 +1000

    Implemented passive patrol state for dummy robot

    We can easily remove this state (it was just a test of the
Finite State
    Machine), though it sort of allows the player to escape if
they feel
    intimidated.

commit 26f11a401eba06f1aefb4044f924cc694a2872d9
Merge: 9e32632 5748d55
Author: Deinyon Davies <deinyond@gmail.com>
Date: Sun Aug 23 12:19:05 2015 +1000

    Merge branch 'FSM-AI'

    Conflicts:
        GameStudioTwo/Assets/_Scenes/BattleScene00.unity
        GameStudioTwo/Assets/_Scenes/hpBarTest.unity

commit 5748d550509ec16318469c38e3260db8de7a02a5
Author: Deinyon Davies <deinyond@gmail.com>
Date: Sun Aug 23 12:08:38 2015 +1000

    FSM Bugfixes

commit ddd1e4abc6fa26f76dd9e4db9d3093e8b7451e8c
Author: JesseWalker11729631 <11729631@student.uts.edu.au>
Date: Sat Aug 22 23:14:31 2015 +1000

    Player Model Selection and some UI stuff

commit 9e326325ab81778bc75f99286c6d8a3cdefe27d8
Author: robafett <ram_95@msn.com>
Date: Sat Aug 22 12:32:56 2015 +1000

Replaced my cylinder with the actual spike model

commit 560ae9fa79903d1aee9c7eb63886832d002bb28b
Author: robafett <ram_95@msn.com>
Date: Sat Aug 22 07:36:13 2015 +1000

        Implemented a 'boost' using spacebar as well as 360
controls

commit a0b1063d84b578c765f91075832c39bf706895f6
Author: robafett <ram_95@msn.com>
Date: Fri Aug 21 21:51:19 2015 +1000

        Weapon with Damage Multipliers and Mass

        Feel free to disable my ghetto 'spike'

commit 3f32cc61bdc7ad8586f29b6fcbb34e18a9b919a8
Merge: 3244d8f 0fdec47
Author: Deinyon Davies <deinyond@gmail.com>
Date: Fri Aug 21 19:53:05 2015 +1000

        Merge branch 'healthbar'

        Made several structural modifications to better suit future
levels
        (perhaps with multiple enemies).

        Conflicts:
            GameStudioTwo/Assets/Scripts/playerHp.cs
            GameStudioTwo/Assets/_Scenes/hpBarTest.unity

commit 3244d8f76124299e123a9da09ddf36024febb040
Author: Deinyon Davies <deinyond@gmail.com>
Date: Fri Aug 21 12:40:10 2015 +1000

        Fixed small damage bug

commit e115f4ca001432764752df4e7896adec91d82c2b
Author: Deinyon Davies <deinyond@gmail.com>
Date: Wed Aug 19 12:43:08 2015 +1000

        Implemented mowers as GameObjects (no wheels yet)

commit af5fef5a1d00c0b89e8c4f3b2dc1beb6ff7a1476
Author: Deinyon Davies <deinyond@gmail.com>
Date: Wed Aug 19 12:05:53 2015 +1000

Implemented FSM in Battle Scene

commit fcbded64bfea840fdd222e48a3837f195dbd4330
Author: Matthew Carver <matthew_carver@live.com>
Date: Tue Aug 18 17:39:20 2015 +1000

    Lawn Mower

    The lawn mower assets are added into:

    GameStudioTwo\GameStudioTwo\Assets\Models\Mower assets

commit d9a3d849558721e30c1dbb235921e8c84d3dc881
Author: Deinyon Davies <deinyond@gmail.com>
Date: Mon Aug 17 22:24:51 2015 +1000

    Commit HP Bar Billboarding

commit aee41980c382522260b2fda27a6896f1faf58da6
Author: Deinyon Davies <deinyond@gmail.com>
Date: Mon Aug 17 12:25:54 2015 +1000

    Implemented "Evade" behaviour (testing only)

commit 06a0fdf60b590f83f3d138742484fdfbc2f8ec36
Author: Deinyon Davies <deinyond@gmail.com>
Date: Mon Aug 17 11:54:44 2015 +1000

    Initial commit of FSM AI implementation

    Restructured BotVehicleController (physics controller) to
interface with
    new FSMBotController (AI controller).

commit 0fdec47e4056dd9936a7983cb9ee6e1c8141d44e
Merge: a395120 a32b60c
Author: dinhvo7 <dinhvo7@gmail.com>
Date: Mon Aug 17 01:28:01 2015 +1000

    Merge branch 'master' into healthbar

commit a3951208c26c45430252f2ba723b350624409588
Author: dinhvo7 <dinhvo7@gmail.com>
Date: Mon Aug 17 01:25:43 2015 +1000

    add timmer to top of the screen

```
commit a32b60cea13143a70ccba92be1040497d4664574
Author: JesseWalker11729631 <11729631@student.uts.edu.au>
Date:    Sun Aug 16 19:28:09 2015 +1000

     Added new scene

     Tested ui stuff

commit 22f4100162660a722788bbd54c9bb91e25e8bc69
Merge: 55253b1 06ea3c5
Author: Deinyon Davies <m@ddoodm.com>
Date:    Sun Aug 16 18:32:13 2015 +1000

     Merge pull request #1 from ddoodm/healthbar

     HP bar and mini HP bar add to the project

commit 06ea3c58b5490994b90fbd87ea9a6108d92bdb0e
Author: dinhvo7 <dinhvo7@gmail.com>
Date:    Sun Aug 16 17:58:22 2015 +1000

     add test scenes

commit 238b839fe383eb693211f53dac8f33e7810e3ba7
Author: dinhvo7 <dinhvo7@gmail.com>
Date:    Sun Aug 16 16:22:54 2015 +1000

     HP bar and mini HP bar add to the project

commit 55253b10be3dd309c170d990a0636be16dec0c9c
Author: Deinyon Davies <deinyond@gmail.com>
Date:    Sat Aug 15 20:49:50 2015 +1000

     Updated damage code to consider collision normal

     Also a small refactor

commit 500585d02813e8caf1453226ea4df372784fc7f4
Author: Deinyon Davies <deinyond@gmail.com>
Date:    Sat Aug 15 19:05:10 2015 +1000

     Replacing functionality that was removed in last merge

     Re-implemented reverse camera, steering mode, and small
changes.
```

```
commit 581709533995339927e91ff6e5c37f9ba186b4fc
Merge: 913d469 ebc472a
Author: robafett <ram_95@msn.com>
Date:   Sat Aug 15 17:33:22 2015 +1000

    Merge remote-tracking branch 'origin/master'

    Conflicts:
        GameStudioTwo/Assets/_Scenes/BattleScene00.unity

commit 913d46913e6cada75dc5d4fa7abbe11603b194ca
Author: robafett <ram_95@msn.com>
Date:   Sat Aug 15 16:47:54 2015 +1000

    Added health, damage and 'Winning'

commit ebc472a0171a8bc35065ac69570c4d87f5365b2f
Author: Deinyon Davies <deinyond@gmail.com>
Date:   Sat Aug 15 16:36:07 2015 +1000

    Rear-View Camera, implemented Pursue behaviour (useless
for now)

commit 7972a3aa053abab2662499687ed95f677be9dc5b
Author: Deinyon Davies <deinyond@gmail.com>
Date:   Sat Aug 15 13:11:08 2015 +1000

    Fixed high-velocity-reflection vehicle collisions

commit db49f1f036ffed6e0ae85beb1b4883afb28a6ace
Author: Deinyon Davies <deinyond@gmail.com>
Date:   Fri Aug 14 15:58:12 2015 +1000

    Level 0 Aesthetic Modifications

commit b1680c54b34fb1870c8aba80afc7475d890eaf65
Author: Deinyon Davies <deinyond@gmail.com>
Date:   Fri Aug 14 11:23:45 2015 +1000

    Shed is now FBX, fixed NavMesh, modified terrain

commit 4d0e31d3581ccb8a2f9aa1ae22700a9dfdd90fcd
Author: Deinyon Davies <deinyond@gmail.com>
Date:   Thu Aug 13 18:02:55 2015 +1000

    Initial commit of Level 00 Design
```

The design does not match our agreed design style, though
the textures
    are just placeholders, and so we can finalize the design
whenever.

commit 7bef30714069aa1fbc0fc92484289b695c779cc1
Author: Deinyon Davies <deinyond@gmail.com>
Date: Wed Aug 12 11:08:01 2015 +1000

    Implemented ramming AI, initial progress on Level 0 design

    Implemented several AI fixes, and a ramming mechanism.

    Started level 0 design.

commit 560da9e3077e933e21ff1073247939e90b58813e
Author: Deinyon Davies <deinyond@gmail.com>
Date: Tue Aug 11 22:56:11 2015 +1000

    Re-Implemented Robert's changes after revert, small fixes

commit e8a6d1cf2984637db1c65e6c41b495eb78c37b55
Author: Deinyon Davies <deinyond@gmail.com>
Date: Tue Aug 11 16:32:48 2015 +1000

    Minor AI steering controller update - now functions mostly
correctly.

    The AI steering controller functions fairly well now, but
is not perfect
    in all cases.

commit ea8cc42e2e20f6487a62e8ece67f200ebed889eb
Author: Deinyon Davies <deinyond@gmail.com>
Date: Tue Aug 11 16:08:49 2015 +1000

    Update to waypoint steering system

    The algorithm does not function correctly when the bot is
facing
    opposite to the player (working on a fix now).

commit f75b99db8e093617c82f80351ab4d2c7df4ac7a4
Author: Deinyon Davies <deinyond@gmail.com>
Date: Tue Aug 11 13:27:21 2015 +1000

    Initial test of interfacing with NavMesh and custom Agent

```
commit 93d52de5e0bc70a8fbec270dc41afbbdc8a836f2
Author: Deinyon Davies <deinyond@gmail.com>
Date:   Mon Aug 10 11:10:35 2015 +1000

    Created a Simpler & More Stable Vehicle with PhysX3.0

    Re-designed the vehicle prototype with Unity 5 vehicle
constructs. We no
    longer do our own physics calculations, though Unity's
vehicle modules
    are rather flexible.

commit f92cc84e2a5994a51ac05e0c302d5b5656b02c57
Author: Deinyon Davies <deinyond@gmail.com>
Date:   Sun Aug 9 17:51:58 2015 +1000

    Initial Project Commit with Vehicle Physics Test

    Initial Unity project commit, including a simple vehicle
physics
    (spring-physics suspension) test (WIP).

commit 5b3142e8dedce35bf978c2b7fe95c4c4c57ae415
Author: Deinyon Davies <m@ddoodm.com>
Date:   Wed Aug 5 11:14:50 2015 +1000

    Create .gitignore

    Created our initial Gitignore for Unity projects. Using
the Unity template.

commit 395184ec6b658d41a0aae73f9e49441157c8c64f
Author: Deinyon Davies <m@ddoodm.com>
Date:   Wed Aug 5 10:34:37 2015 +1000

    Initial commit
```