The Exiled
Game Design Document
Version 1.0

Falling Down Stairs Studios

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DigiPen Institute of Technology, GAM240, Fall 2005
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Introduction

The Exiled is a futuristic racing and car combat game. It draws inspiration from games such as Wipeout and Mario Kart. The Exiled contains a special bounty feature that provides players with a unique twist in this genre.

1.1.Summary

In the distant future, crime has run out of control and criminals are now being exiled to the distant Talaczar Nebula. Players take on the role of a bounty hunter in the Talaczar Racing League, a vicious, cutthroat organization dedicated to destruction, mayhem, and the occasional checkered flag. Each new race means a new bounty on your head, and on the head of your foes. Destroy your opponents to collect as many bounties as possible to purchase the ultimate racer. Die before the finish line, and lick your wounds in your old piece of junk.

1.2.Key Features

- Unique bounty hunting system integrated into a racing game
- Fully 3D engine
- Ability to purchase new vehicles and weapons after each race
- Compete against up to 5 computer opponents
- Multiple mini-games such as deathmatch and objective racing
- Futuristic art style reminiscent of Tron
- Unique 3/4 overhead perspective

1.3.Platform

This game is being developed for the Windows PC gaming platform. Target system requirements are:

- 800 MHz Pentium III
- 256 MB RAM
- DirectX 9.0c Runtime environment
- Windows XP

1.4.Target Market

The game is targeted toward an "E" for everyone rating. It will appeal both to gamers that enjoy arcade style action and those that are craving a deep and rewarding gameplay system.

1.5.Story

In the distant future, crime has become an overwhelming problem. Prisons are filled so far beyond capacity that the Earth world government has been left with no choice but to start exiling criminals to the distant Talaczar Nebula. Three things rule life in Talaczar: money, power and speed. Opportunities to make an honest living in a world of criminals are few and far between. Most people like you decide to scrape together the few spare parts that they can and join the most dangerous association in the galaxy.

Each night the Talaczar Racing League takes to the streets competing in deadly races of speed and destruction. Machine guns fire, rockets explode and racers blaze through corners risking their lives to earn the checkered flag. Become a winner and you will gain enough money to upgrade your vehicle and eventually advance into the ranks of the Talaczar elite. Start losing and use the money you've made to persuade your fellow racers to eliminate your opponents and regain your standing. Be careful, they can use their money to persuade others to take you out too!

(JEN – Good stuff.)

2. Gameplay

2.1.High-level description

The Exiled is a single-player racing combat game. Its core game mode is a Grand-Prix(GP) style series of races against five computer-controlled opponents. Players are challenged with balancing the complex tasks of racing and destroying opponents all while working to ensure their own survival through the race. The object of the game is to finish the grand prix with as much money as possible. There is no multiplayer mode planned at this time.

As the game begins, players and computer opponents alike start with a beginner's car, with racing their only objective. This race will help orient the player to the racing style of the game and the general controls, without having to worry too much about destroying their opponents or surviving opponent's attacks themselves. After the first race is completed, the racers are awarded money for their performance in the race, which they can use to upgrade their cars or buy additional weapons. Perhaps the most intriguing aspect of *The Exiled* is the bounty system: money can also be used to place "bounties" on other racers, which serve as incentives for the other racers to concentrate their fire on a particular racer. As an incentive for the racer with a bounty on his head, finishing the race successfully will award that racer the bounty money.

When starting a new grand prix, players can choose between a 3-race, 5-race, or 7-race grand prix, enabling a longer or shorter gameplay experience. These also serve as a difficulty-level indicator, as a longer grand prix will allow the AI opponents to offer stiffer competition, especially in the latter races. Each mode has its own high-score list for players to fight their way onto.

2.2.Sample game round

For example, Tommy sits down to a game of *The Exiled*. He doesn't have much time to play, so he picks a 3-race grand prix. Tommy finishes in second place in the first race, enough to upgrade to a faster vehicle. During the second race, he beats most of his opponents handily, but one computer opponent in particular finishes before him again. After this race, Tommy uses some of his winnings to take out a bounty on his adversary. With this bounty in place, his opponent is so agitated that Tommy easily beats him out and takes first in the final race. Feeling satisfied by the experience, Tommy is surprised to find his name on the top scores list. Next time, Tommy thinks, he won't let his opponent get such an early lead, and he'll score even higher.

Players will be drawn to *The Exiled* both to defeat their individual opponents, but also to beat their own previous scores.

Racing itself is rather straightforward, with an arcade-style feel reminiscent of F-Zero. Players can turn their vehicle left and right, and control acceleration and braking as well. During the race, a mini-map will be displayed on the screen, with radar-style markers showing opponents' positions. As opponents become near enough to be drawn on the main screen, markers and colored symbols will remind the player of the specific opponent's position, damage, and bounty status.

The Exiled features a modular course, different sections of which are open for different races. While the earlier races feature few turns and simple track layouts, later races will have much tougher turns to navigate while worrying about opponents and hazards. Some of these tracks will only be available on the longer grand prix modes. Each race will last for a given number of laps around the track, based upon track length and game difficulty. For example, on a 3-race GP, the starting racing oval featured in the first race may only last for three laps, but this same race may last for five or seven laps in the longer GP modes. For the sake of simplicity in gameplay, the entire track is flat and two-dimensional.

Each racer has a set level of durability, which is drained as the racer is hit by weaponry. If a vehicle loses all its durability, it is disabled and automatically finishes that race in last place. (If several vehicles are disabled, they finish last of the remaining racers at the time of their disablement. For example, the first disabled racer automatically finishes in 6th place, the next in 5th place, etc.) Vehicles can only regain durability in mid-race by picking up Durability power-ups. However, vehicles are automatically repaired fully between races. If a vehicle is disabled during a race, that particular vehicle is lost from the player's inventory, though the starting car will always be available. Additionally, players retain whatever vehicles they have bought over the course of a GP, enabling them to switch back to an earlier vehicle. Players may purchase new versions of vehicles they have lost in previous races, as well. Other than the risk of being disabled, a low durability does not adversely affect a racer; i.e., a heavily damaged racer handles and drives just as well as a racer at full durability.

At the conclusion of a grand prix, the player's net worth is calculated by adding their current cash reserves to the buying-price value of all vehicles and weapons in their possession. The player is shown a message informing them of their net worth and whether they have made the top-ten list for that GP. The player is then given the option of returning to the main menu or repeating the GP, starting with their current

inventory. A repeated GP gives the player an opportunity to continue with their racing, but repeated GPs do not earn spaces on the top-ten list.

2.3.BONUS ROUNDS

Based on which GP the player chose, there will be "bonus" stages between races to award the player with a further monetary advantage. There will be no bonus stage on the 3-race Grand Prix, while on the 5-race there will be one bonus stage in between races 3 and 4. For the 7-race GP, there will be bonus stages between races 3 and 4 and another between 6 and 7. These bonus stages allow the player to break up the racing game with some slightly different objectives.

The first bonus stage is straight-out deathmatch. Players and their opponents are dropped on a small circular track section, and players receive higher bonuses based on the number of opponents destroyed and how long the player survives in the mode.

Another bonus stage is objective-based. Rather than having a specific number of laps to complete around a course, many different course routes are opened up, and objectives locations are shown at several places around the map. Objectives are shown on the radar section of the Heads-Up Display. Players earn bonus cash being the first to touch all of the objectives, with smaller bonuses for being second or third.

In addition to the GP mode, players can chose to play a bonus stage by itself for fun, or to practice racing on any course without the pressure of opponents.

(JEN – really well done. However, ideally come up with some sub sections. Consider how you can break it up so that a reader can find information within the description.)

(Michael – Broken up by your suggested areas.)

2.4.Game Flow

From the main menu, players have the following options:

- Grand Prix
- Practice
- Bonus
- Options
- High Scores

- Credits
- Quit

Grand Prix starts a new grand-prix mode game. Players pick a 3-, 5-, or 7-race grand prix, and try to race their way to financial success over the course of those races.

Practice mode enables players to race around a course without the threat of opponents. Players are taken to a Practice mode select screen, where they pick their vehicle and the track they wish to race on. After racing their fill, players are returned to the practice select screen, where they can pick a new course or vehicle, or return to the main menu.

Bonus mode allows the players to play the different bonus stages at any time. The player picks the bonus stage they wish to play, and are returned to the main menu when the bonus mode is complete.

Options allow the player to change the input controls for the game.

High Scores displays the high score lists for each of the Grand Prix modes.

Credits displays the credits screen of people who worked on the game.

Quit exits the game.

2.5.Input Design

The input for the Exiled is rather simple. Players can configure buttons on the keyboard for turning left and right, and two more for acceleration and braking. By default, the left and right arrows are used to turn left and right, with the up and down arrows used for braking. Space bar fires the primary weapon, with the alt key firing a secondary weapon. The control key will drop mines, if they are available. Primary weapons can be cycled through using the tab key. This keys will be configurable should the player choose.

At any time during the game, pressing the escape key will bring up a menu that will allow the player to change game options, return to the main menu, or quit the game.

2.5.1. Default steering controls

Accelerate	Brake (Decelerate)	Turn left	Turn right
Up arrow	Down arrow	Left arrow	Right arrow

2.5.2. Default weapon controls

Switch primary weapon (Machine gun, pulse laser, rocket launcher)	Fire primary weapon	Secondary weapon (Mines, rocket booster)
Tab key	Space bar	Alt key

2.6.Player Design

The player controls a newly exiled prisoner sent to the Talaczar Nebula. Being a new arrival at the nebula, the player is forced to participate in the ruthless Talaczar racing league with other new arrivals for the entertainment of the Talaczar masses.

On the racetrack, the player's vehicle is silver and white.

(JEN – "Player" design, for your game, is about the ship they start with or they can select to use. So design the ships.)

2.7.Enemy Design

There are five other computer controlled racers for the player to race against and compete for bounties. They are of varying skill levels and have different goals. Most of their logic is shared, but tweaked by a personality (either Reckless, Aggressive, Easygoing, or Cautious.) For more information on the effects of personality, please see the Technical Design Document.

During races, players will be able to identify their opponents based on vehicle color.

- Axle (Red Driver) Male - Axle has more racing skill than any of the other participants of the Talaczar Racing League. In his previously life on Earth, Axle was a professional speed boat racer. On Earth Axle was a very wealthy man. However, he refused to financially support his deadbeat brother, Tamaric. Eventually Tamaric became so upset about Axle's unwillingness to give him money that he killed Axle's

wife and framed Axle for the murder. Now Axle races in hope of winning enough money to be able to escape from Talaczar and avenge the death of his wife.

- Axle always picks the fastest vehicle available to him, and races it well. Axle will never upgrade the weapons on a vehicle, but will buy a rocket booster if he has the money for it. He concentrates solely on winning the races themselves, and is never swayed by the available bounties for a race.
- AI: Axle has an Aggressive personality, always remains concentrated on racing and never targets another racer for bounties. He may shoot at vehicles that have targeted him (racers that have caused damage to him) but only if a shot is available; he won't deviate from his chosen driving line to take a shot at someone.

- Rabin (Green Driver) Male - Rabin's story is similar to many of the others in the Talaczar Racing League. He grew up on the streets committing petty crimes and making just enough money to stay alive. One day he became a little bit too daring and tried to rob a bank by himself. He was quickly caught and exiled to Talaczar.
  - Rabin tries to balance winning races with taking shots at his opponents; should he find himself with a fellow racer near, he may fire off a few weapons, but he doesn't pick specific targets unless there is a sizable bounty on them. In general, he'll only be interested in a bounty if its value is better than what he thinks he can win in the race, which is generally second or third place. Rabin will stick to the mid-range vehicle so long as he can afford it. His shooting is only 40% accurate, however.
  - AI: Rabin has an Easygoing AI personality, primarily sticking to recommended speeds. If a racer has a bounty on it that is greater than the average prize value of second and third place, he will primarily target that racer. If there are no racers that he is targeting, he can target shots at vehicles closest to him. Rabin doesn't drive specifically to pick up powerups, but will not drive to avoid powerups already on his driving line.
- Tami (Yellow Driver) Female - On Earth, Tami was born into a family of organized crime. She led a very privileged life and had only driven a vehicle a handful of times before coming to Talaczar. She was sent to Talaczar when she was convicted, along with her father, as a co-conspirator in the attempted assassination of a prominent government official. Tami's father died shortly after arriving on Talaczar and Tami joined the Talaczar Racing League in an attempt to make something of her life without her father's help.
  - Tami is unfortunately out of her league here; she has little driving experience, let alone piloting experience. She'll shoot at opponents, but with a miserable 20% accuracy; she'll race poorly enough to put up a nail-biting fight for fifth place.

- AI: Tami's personality is predictably Cautious; she'll drive to pick up powerups without regard to her driving line, but take turns very slowly and carefully. She'll shoot at any closest vehicle without regard for bounties.

- Ikem (Purple Driver) Female - Ikem was a very wealthy business owner on Earth. She spent most of life consumed by an overwhelming sense of greed. As CEO of one of the largest corporations on Earth, Ikem embezzled untold millions of dollars and was caught years later. Upon arriving on Talaczar, Ikem realized that her business skills would do her very little good in this new life. She decided to take a new approach and joined the Talaczar Racing League in hopes of regaining some of her long lost money and status.
    - Ikem is smart and capable, but not the best at racing or shooting. Like Rabin, she balances racing with bounties, and will only pick specific targets if she thinks destroying them will net her more money than winning second or third place.
    - AI: Ikem's AI is generally the same as Rabin, but she's 60% accurate with her shots. Otherwise, their personalities are the same.
- Yerll (Blue Driver) Male - Yerll spent most of his life in and out of various correctional institutions and mental health facilities. After hearing about life on Talaczar, and the Talaczar Racing League in particular, Yerll decided it was something he wanted to be a part. He committed a crime far too disturbing to describe and was exiled to Talaczar. He now participates in the Talaczar Racing League for the sheer thrill of destroying his opponents.
    - Yerll concentrates on destroying his opponents as a means to victory, although he considers each hunk of twisted metal a victory in and of itself. Yerll picks a vehicle based on the weapons he can outfit it with; while this naturally leads him to pick The Tank, he may pick less heavily armed vehicles if he doesn't have enough money to upgrade the weapons on the pricey Tank. Rather than concerning himself with the race, he completes laps only to keep up with his opponents. Having extensive practice, Yerll hits his shots about 70% of the time.
    - AI: Yerll has a Reckless personality, driving dangerously fast and changing course to pick up powerups. He places target priority on whichever racer has the highest bounty placed on it. If there are no bounties for a race, he'll target the closest vehicle. Shooting at an enemy will take priority for Yerll over picking up powerups.

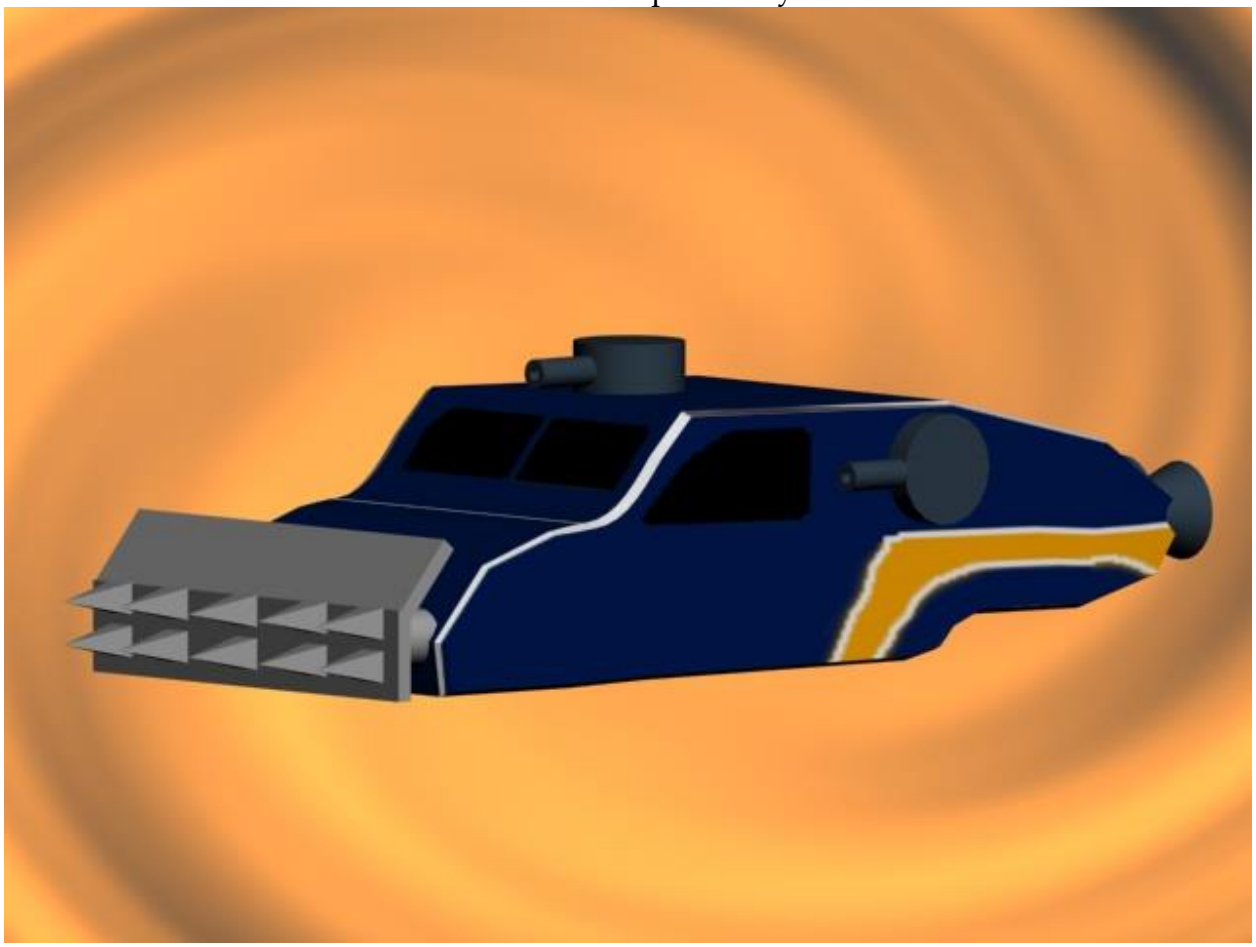
(JEN – good, the stories are not required but since they help capture the feeling you're trying to go with, they work. However, your enemy design needs to go a little deeper: a) how do they drive? aggressively, carefully, going for speed or going for accuracy? Define those states. Do the enemies remain in those states always (Is Axle always

aggressively shoot at other players, or does he sometimes go for winning the race?) b) How do they decide who to shoot at, and why? (closest vehicle or "vengeance targeting") c) accuracy of shooting (you covered this), d) their focus on collecting powerups vs. objectives vs. shooting at the player vs. completing the race the fastest.) (Michael – I added a bullet point paragraph for each enemy detailing their AI logic in a bit more detail.

2.8. Vehicles

The vehicles in *The Exiled* are space-age racing vehicles, similar to the design of the popular racing game *Wipeout*. These vehicles are not quite cars, and not quite spaceships, but have characteristics lending themselves to the analogy of Earth-based car racing. All racers start with a basic vehicle, but other vehicles are available in between races. All vehicles start equipped with a machine gun, but some can be upgraded to hold other weapons, though never more than two on a racer. Vehicles themselves (engines, brakes, etc.) are not upgradeable.

Vehicle characteristics should be defined independently in .INI files.



- *Scheckleford:* This basic racer doesn't have the capacity to withstand much damage, nor can it really dish out that much. It's always available, though, and it can keep up with the other vehicles, at least.
- *Tempest:* A good step up from the basic racer, and not terribly expensive either, it forms the best compromise between focusing on pure racing and pure destruction. It has a higher durability than the basic racer, and can carry larger weapons. The Tempest racer can accommodate the pulse laser, machine gun, and can carry either mines or a rocket booster.
- *The Tank:* For those players concentrating on collecting bounties, this vehicle is the ultimate in both dishing out and taking damage. Not really a tank per se, "The Tank" is more of an affectionate nickname of sorts. The highest durability of all racers and the largest capacity for weapons is balanced out by a lower high speed, making the The Tank easy to outrun. The Tank can carry all weapons, including the rocket launcher.
- *Fastrack:* Built for those who want to concentrate on winning races, it boasts the best top speed of all vehicles. However, it doesn't carry much in the way of armament, and its durability is slightly less than standard. The Fastrack carries the machine gun, and can be outfitted with either mines or a rocket booster.

Characteristics of the vehicles are shown in the chart below:

	Scheckleford	Tempest	The Tank	Fastrack
Durability	80	100	120	90
Top Speed	90 mph	100 mph	80 mph	110 mph
Available Weapons	Machine gun only	Machine Gun, Pulse laser, mines/rocket boost	All	Machine gun, mines/rocket boost
Cost	0 (always available to every player)	1000 credits	2000 credits	2000 credits

(JEN – this table should also include a) cost, b) number of open weapon slots, c) upgradability (?) of engines, etc.)
(Michael – Included cost in table, and added a note about weapon slots and vehicle upgradeability at the start of the section.)

(JEN – and make sure you do all these stats as .ini files so you can easily change them while you tune. Not so critical to change during the game, though you should have a console that allows you to swap guns quickly. The .INI files should define the differences of the ships; not code)

(Michael – Made a note about .INI files.)

2.9. Weapons

A variety of weapons are available for both obliterating opponents and defending from their attacks.

- Machine Gun — This gun does very light damage to other racers but has an unlimited number of rounds. This weapon is available at no cost on every vehicle.
- Pulse Laser — The next step up in projectile weapons. It can be fired rapidly, like the machine gun, but does not do significantly greater damage like this. However, it can be charged before firing, producing shots with moderate damage potential. During the charging time, though, vehicles respond more slowly to steering input, and the pulse laser has the potential to overcharge if left charging for too long, damaging the vehicle that attempted to fire it. It is available on Tempest, The Tank, and Fastrack.
- Mines — Players can further purchase mines to drop on the track, dealing moderate damage to any vehicle that runs into it. Mines are available on the Tempest, The Tank, and Fastrack, but are exclusive with the rocket booster.
- Rocket Launcher — The ultimate weapon, only available to The Tank. It deals high damage, but takes some skill to aim, and will also deal splash damage to any targets around its detonation.
- Rocket Booster — The rocket booster enables short, limited bursts of speed beyond a vehicle's normal top speed. The rocket booster has a limited amount of fuel every race, although it is automatically refilled between races. Further, while using the rocket boost, steering response becomes much slower. Rocket boosters are available on every vehicle except the Scheckleford.
- Energy Shield —Players may purchase a defensive *energy shield* for any vehicle. This shield absorbs a moderate amount of damage before dissipating. It is one-use only, but can span multiple races if it is not destroyed. It reflects pulse lasers rather than absorbing their damage.

Weapons other than the machine gun and pulse laser have limited ammunition and are considered one-use. From race to race, they may be kept if there is remaining ammunition. Otherwise, players must restock their weapons supplies between races. Weapons that are partially depleted may also be restocked, but players still pay full price for each weapon and lose whatever extra ammunition they were storing.

The Scheckleford can only equip the machine gun, but all other vehicles can equip up to two weapons at any time.

	Machine Gun	Pulse Laser	Mines	Rocket Launcher	Rocket Booster	Energy Shield
Cost	0 (Equipped by default)	400	400	800	600	600
Ammo	Unlimited	Unlimited	5	1	10 seconds	50 points of damage
Vehicles	All	Tempest, Fasttrack, Tank	Tempest, Fasttrack, Tank	Tank	Tempest, Fasttrack, Tank	All

(JEN – how many weapons can I have on any one ship? Include a table with cost of weapons, ammo, etc.)

(Michael – Added a note on number of weapons that can be equipped on vehicles at one time. Added a chart to show cost, what vehicles can equip which weapons, etc.)

2.10. Powerups

Players and AI opponents can pick up powerups along the racetrack to augment their abilities or add to their cash reserves. Powerups are identified by distinctive glow/particle effects and display a text description of their effect when the player picks them up.

- *Cash bonus* — Supplements the player with a small cash bonus.
- *Car repair* — Picking up a repair powerup restores some durability to your vehicle.
- *Damage Amplifier* — A damage amplifier not only serves as a multiplier for damage that the player deals, but also in the amount of damage received. Players will have to think carefully before picking this up. (JEN – cool, but consider how you let the player know this information.)

(JEN – other powerups you might consider include extra ammo, short-term power/speed boost. Keep your options open to allow for additional powerups if you

decide to add them. You'll need some information for each powerup and object that identifies it for the AI as being desirable or trying to avoid it.)

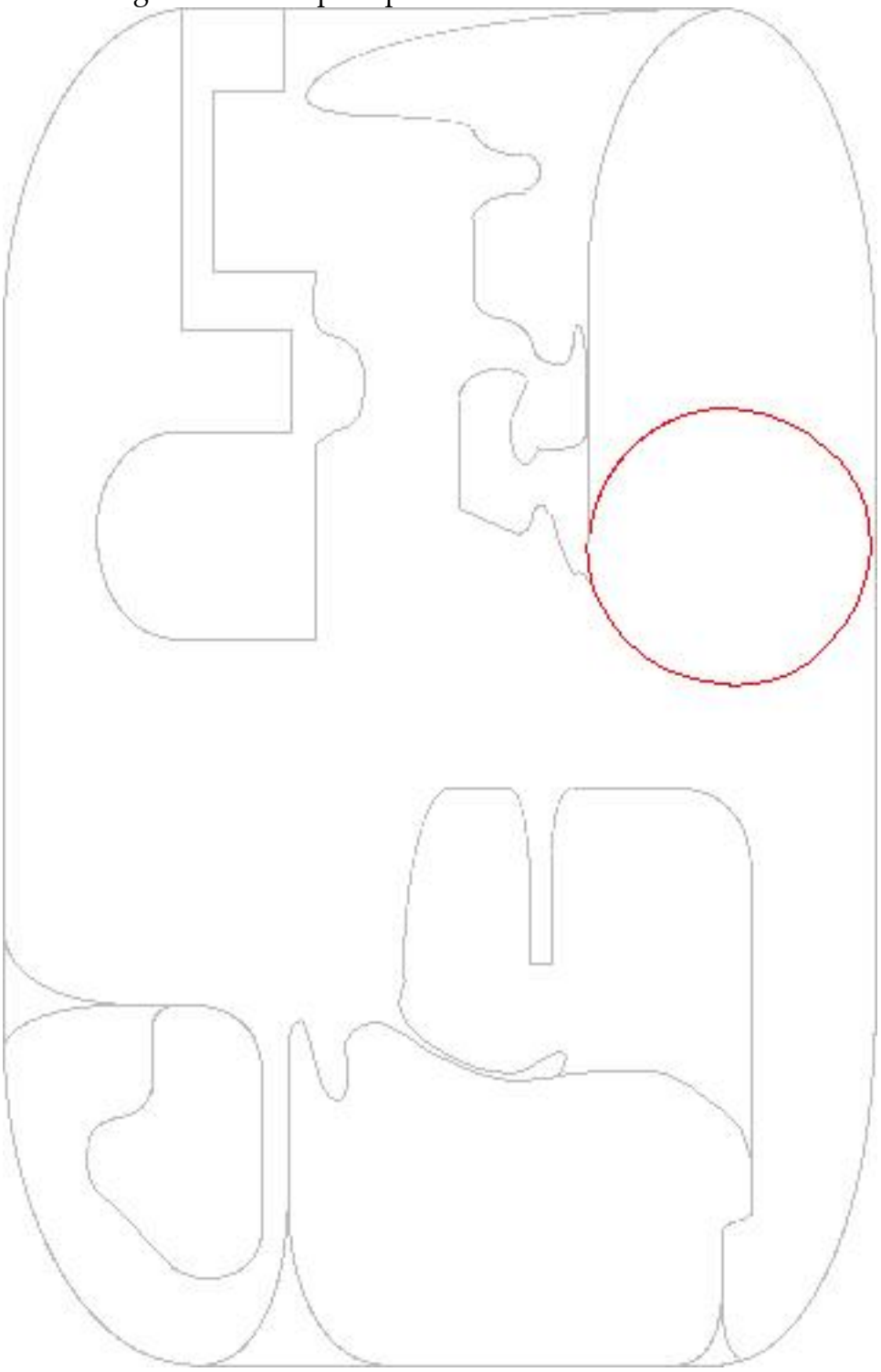
(JEN – don't forget to define the "objectives" that are used in the bonus rounds. What are they?)

(Michael – The bonus levels are described in section 2.3.)

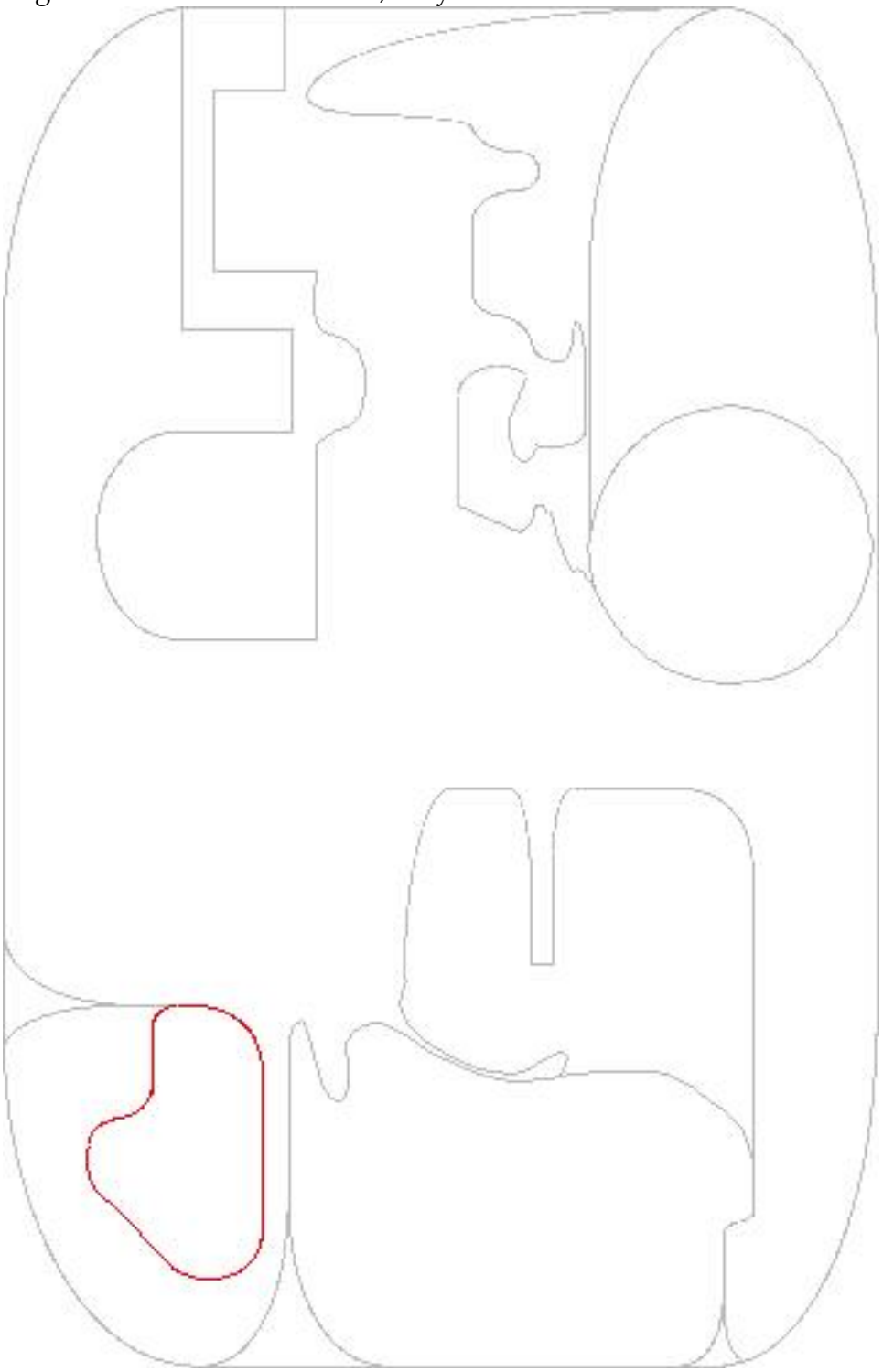
2.11. Level Design

The Exiled features a modular level design, such that there is one track the racers are on at all times, for all modes and races. For different modes or races, different parts of the track are opened up depending on how difficult the race is intended to be. The entire track is shown below, with diagrams for each individual course to follow. The individual tracks are always used for particular numbered races; that is, race #1 is the first race for all difficultly levels. The easiest difficult level only goes through race #3, the next up to race #5, and the most difficult level includes all seven courses.

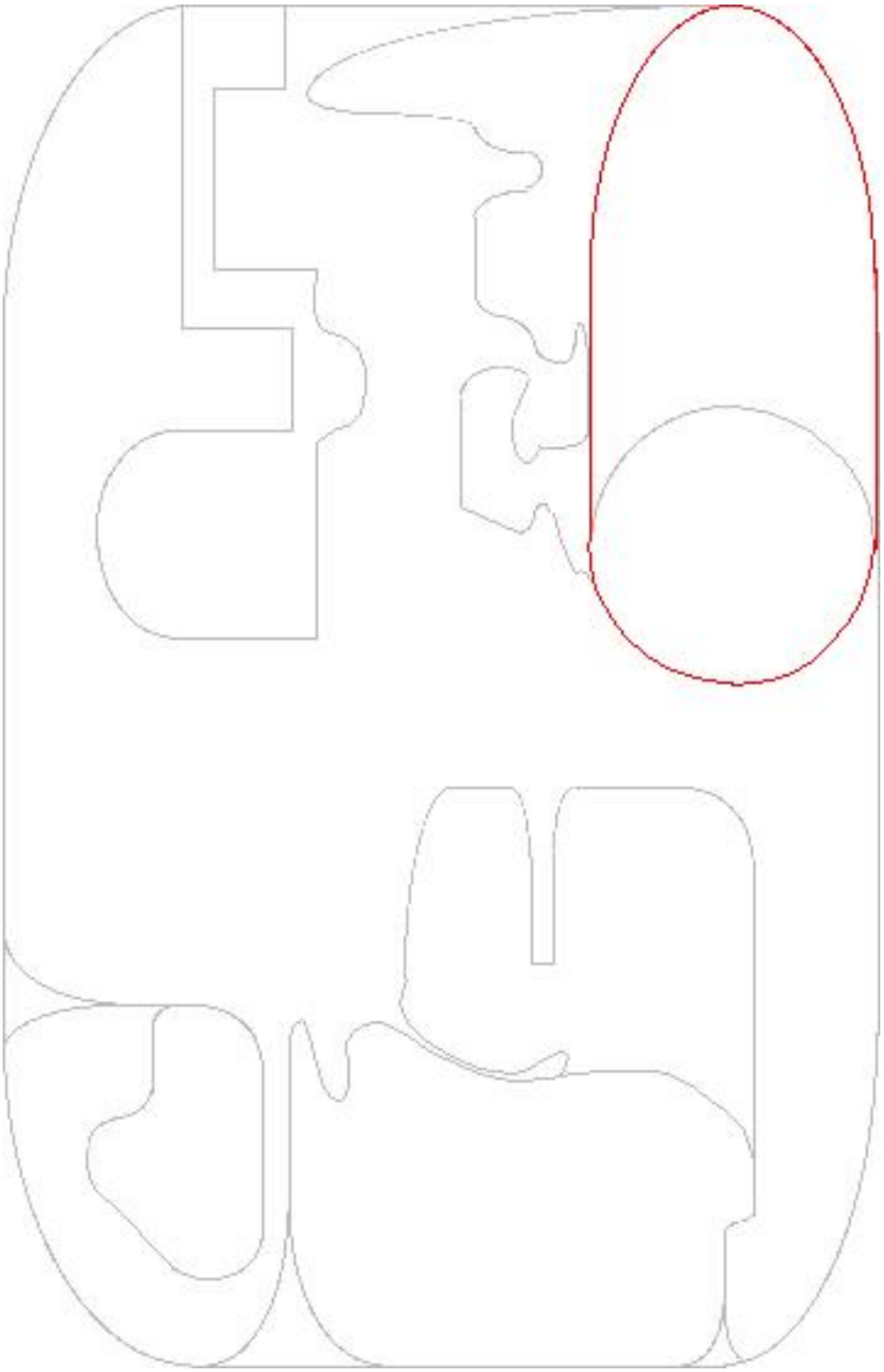
The Battleground - An open space used for the deathmatch bonus stage.



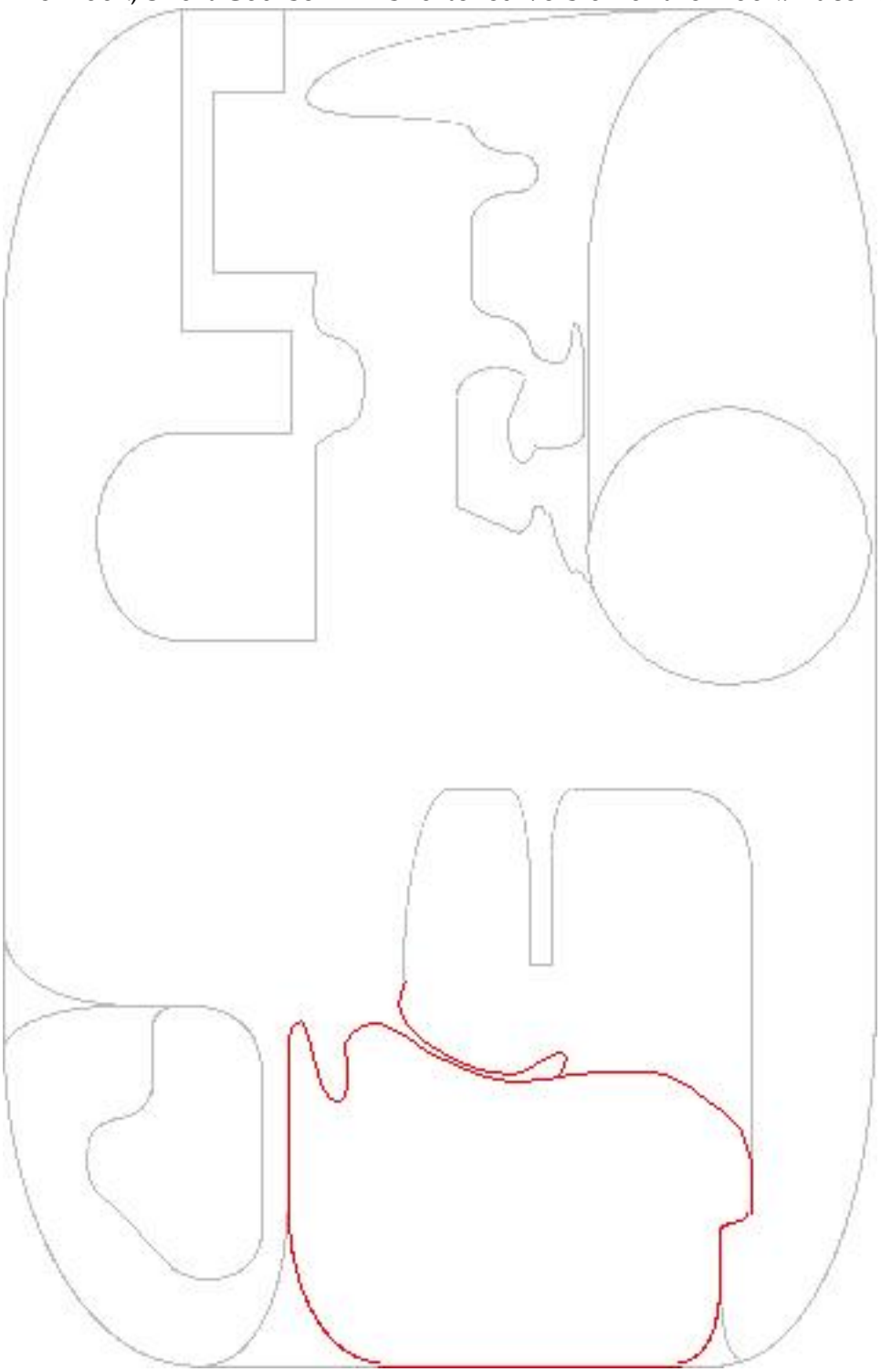
Beginner's Course — A short, easy course. Race #1 is held here.



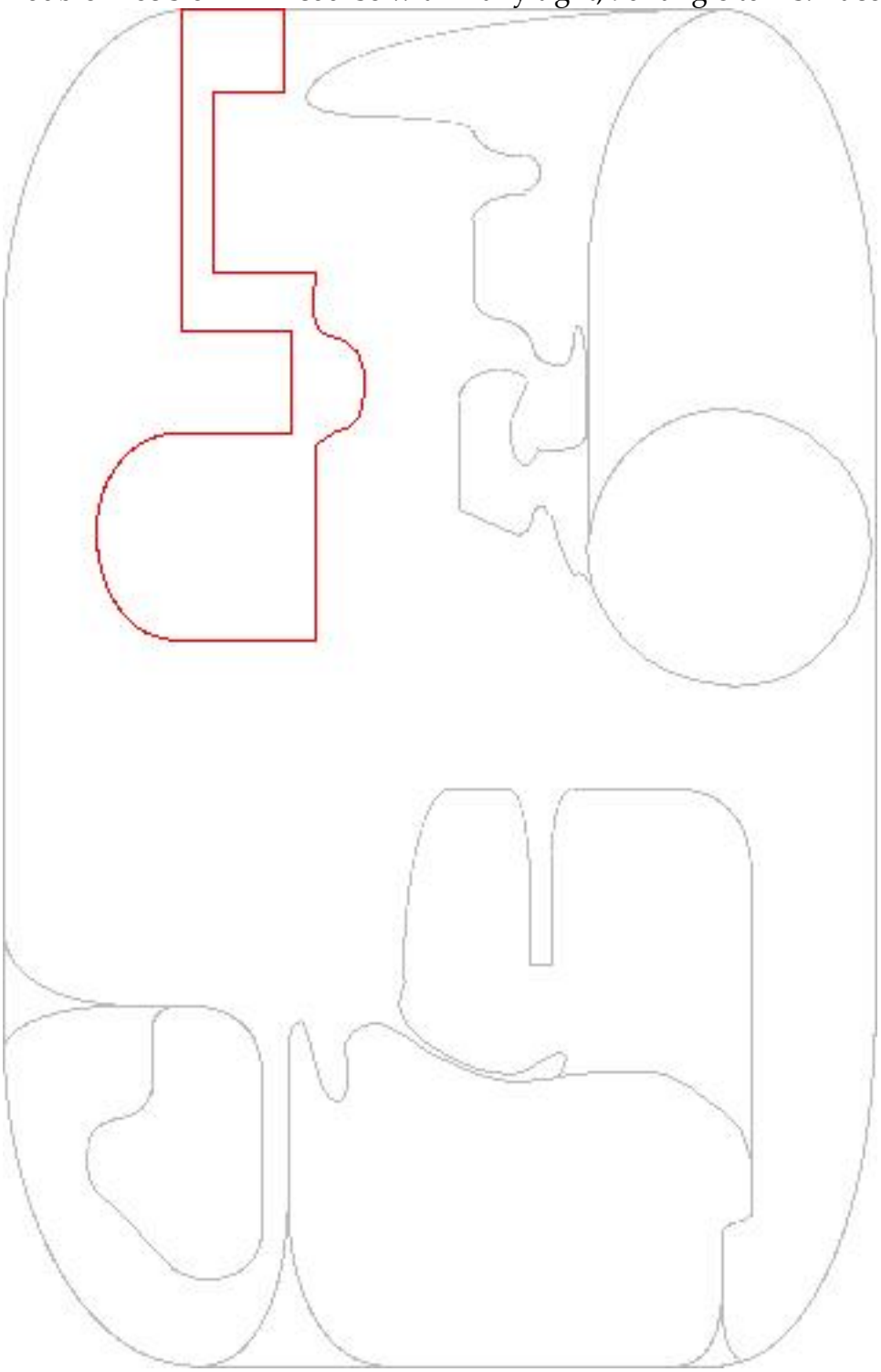
Short Oval — Race #2 is held here.



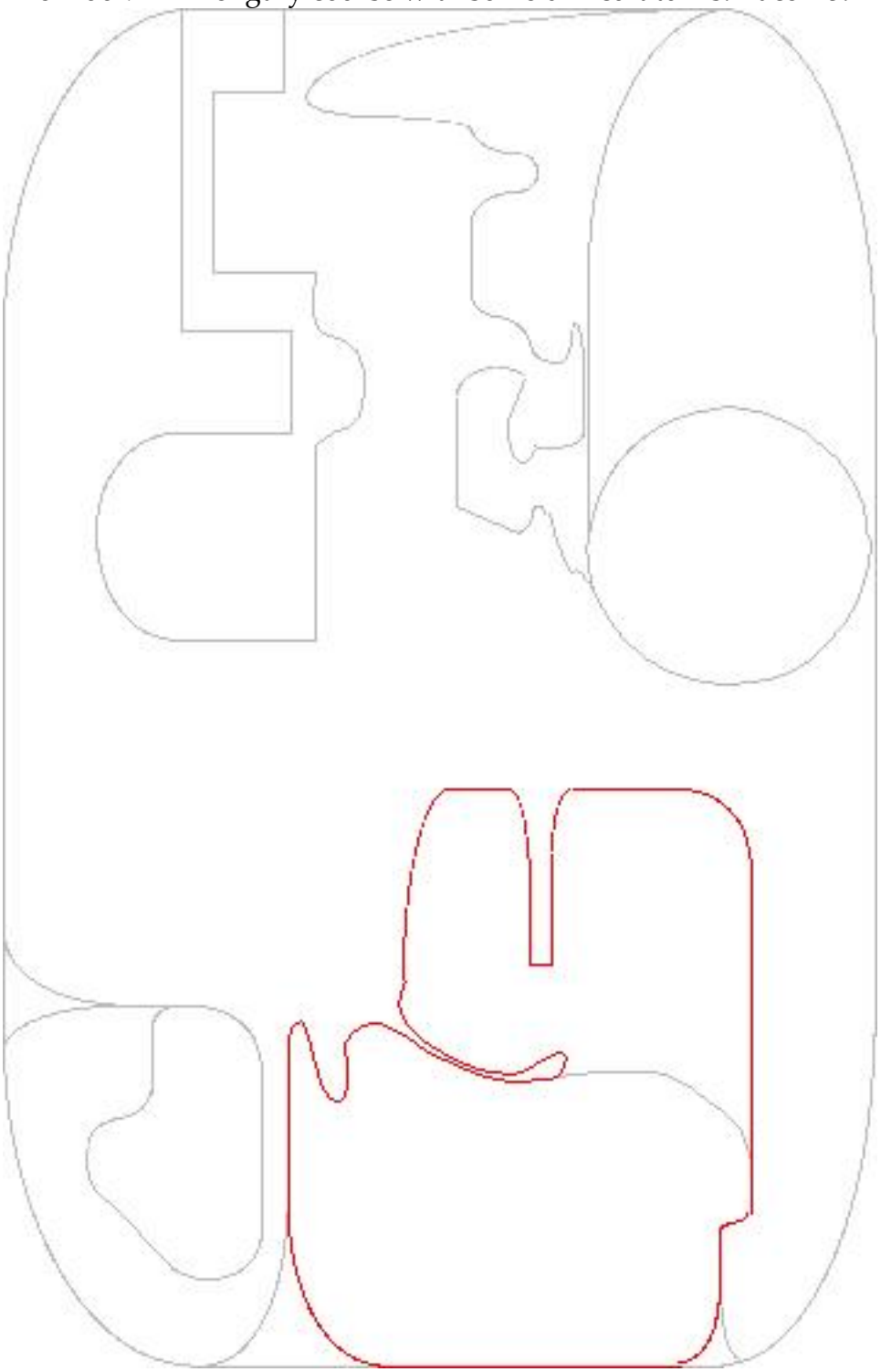
The Hook, Short Course — A shortened version of the Hook. Race #3.



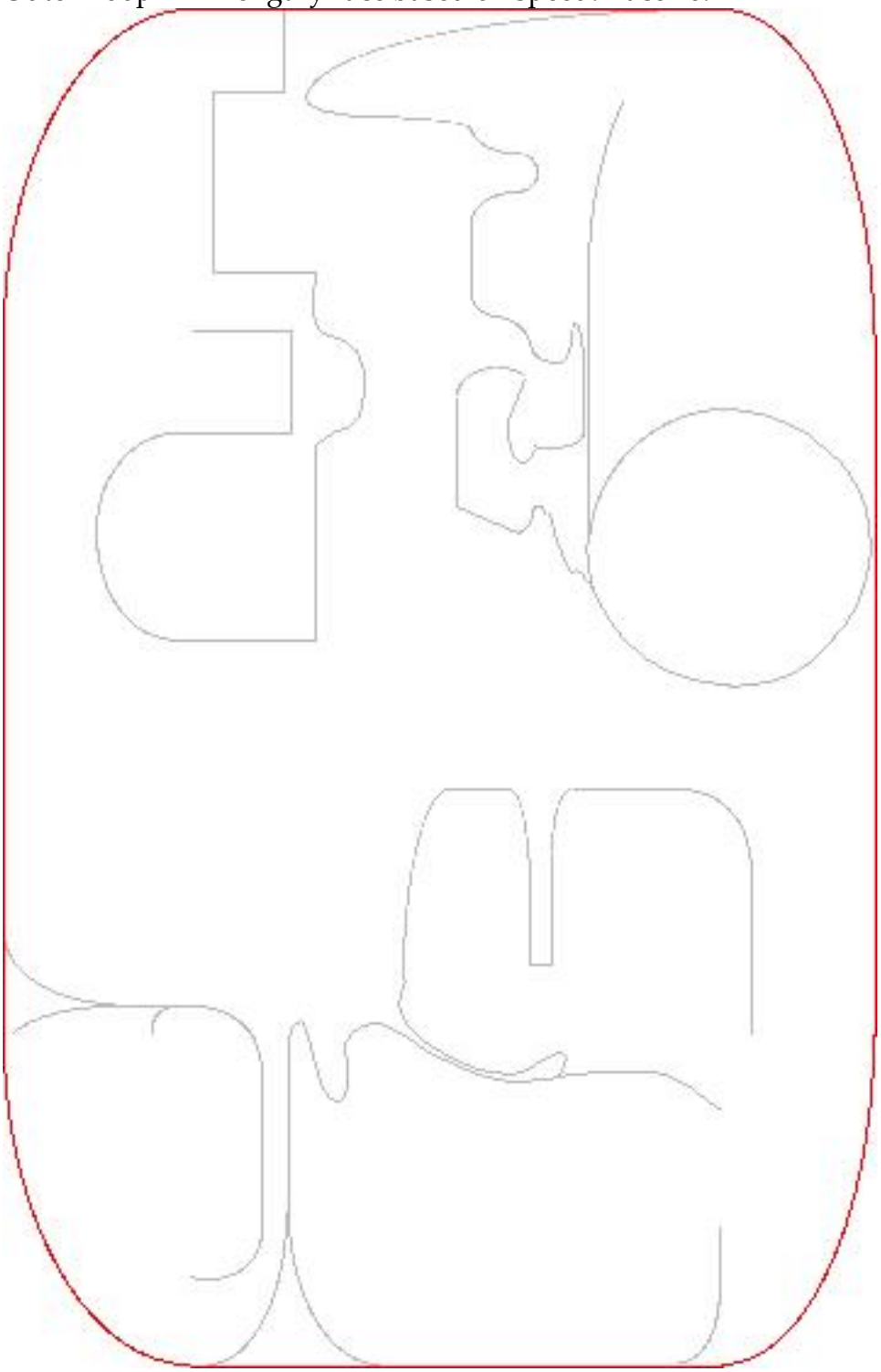
Double Precision — A course with many tight, 90° angle turns. Race #4.



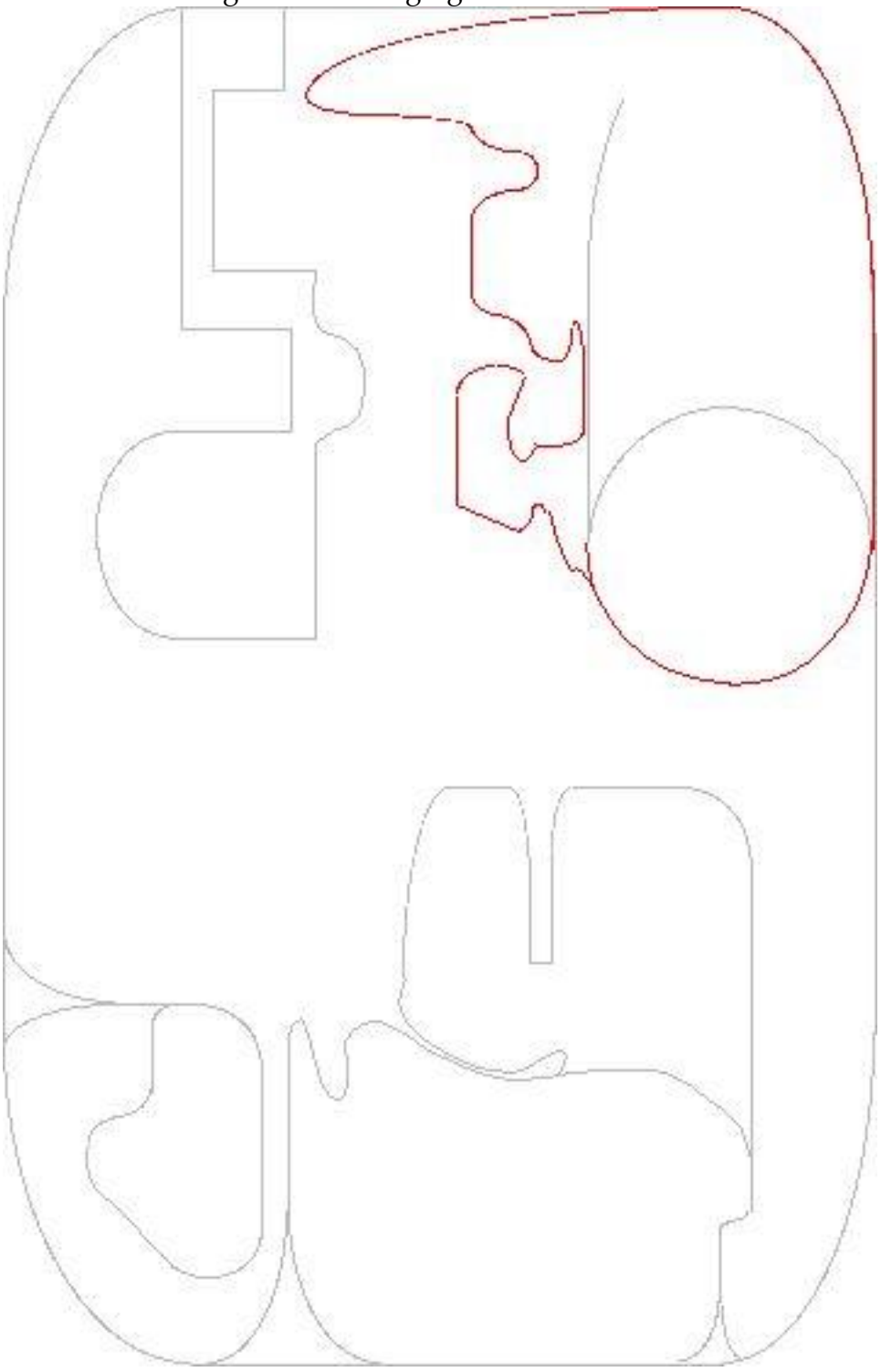
The Hook — A lengthy course with some difficult turns. Race # 5.



Outer Loop — A lengthy race based on speed. Race #6.

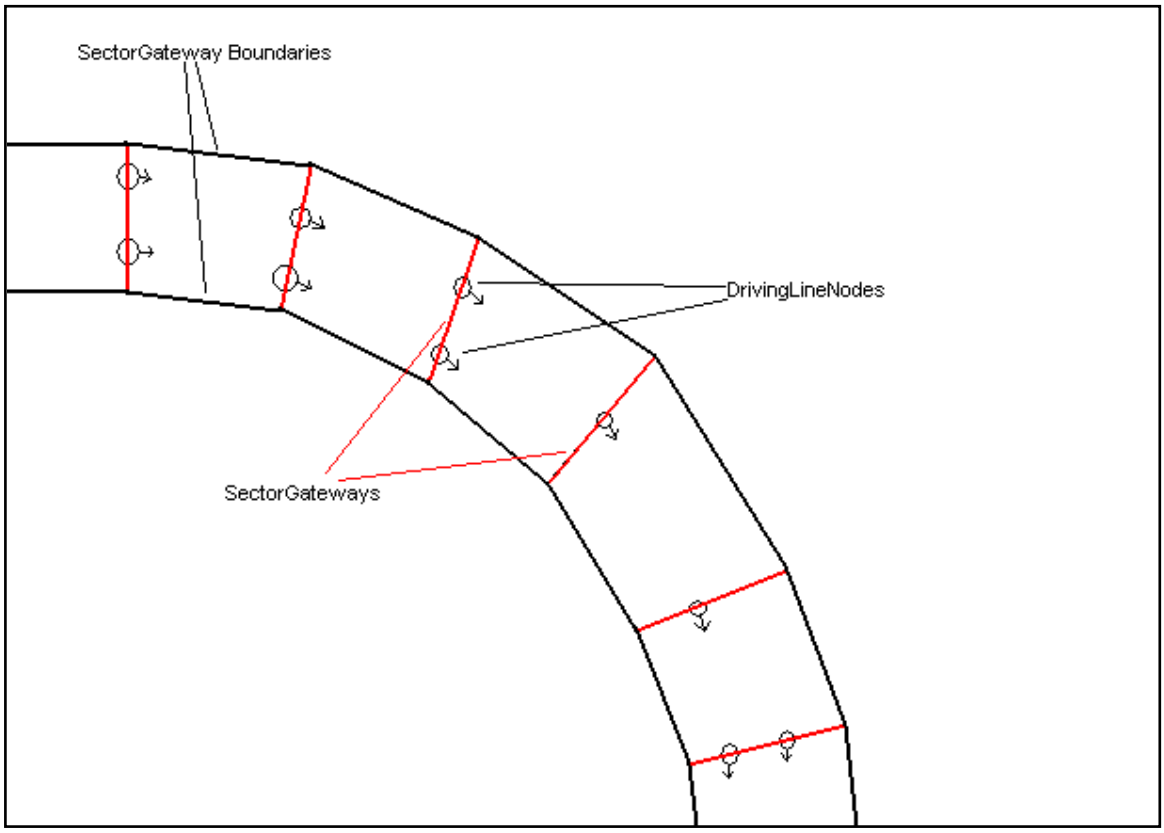


The Donnerschlag — A challenging course for race #7.



Each racetrack will have DrivingLineNodes defined that the AI will use to help navigate around the course. By dividing the track into sectors, the AI can determine which DrivingLineNode to use based on which sector it is currently in.

For more specific information about the AI logic used to navigate a track, please refer to the Technical Design Document.



Racetrack Conceptual Diagram

(JEN – nice designs. I have real concerns about how you're going to make the AIs drive these tracks well. Though the GDD is not about technology, you should include a section on the AI and talk about how you'll control the driving of the AI.)

(Michael – Added a short section on the track's DrivingLineNodes, used by the AI to navigate corners.)

3. User Interface Design

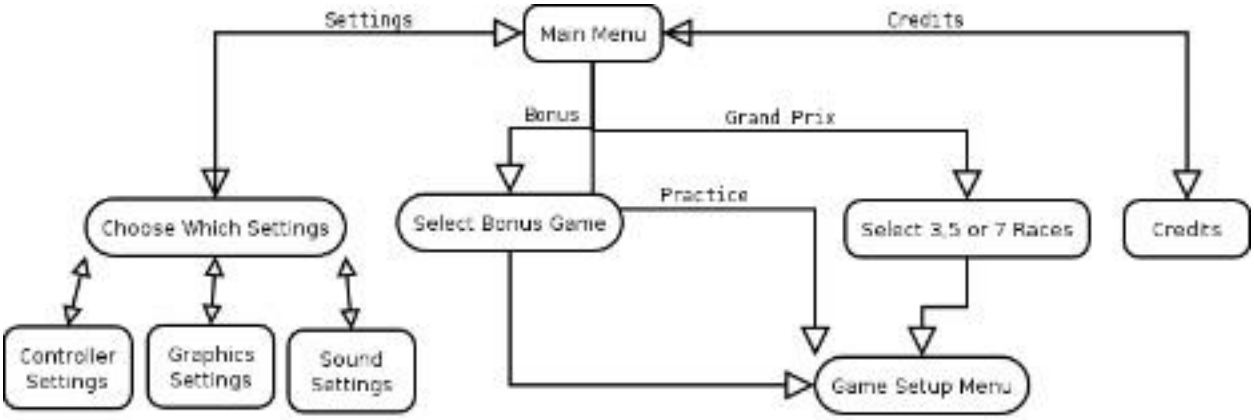
The user interface design can be separated into the main user interface and the in-game user interface. The main user interface will be the first one seen by the user when the game starts and after the splash screen is displayed. The splash screen will display the DigiPen logo and copyright information, then the Falling Down Stairs Studios logo. After the splash screen is displayed, the main menu of the game (depicted below) will be shown. (JEN – also include the DigiPen splash screen and copyright information) (Michael – Added.)

The user interface will consist of interactive menus, non-interactive screens, and heads up displays. Interactive menus will be navigable via the mouse, arrow keys and the enter key. Alternatively, each selectable item on any of the menus will have a short cut key that will be indicated by an underline in the title of the item. Each menu other than the main menu will include a back button to return to the previous menu. (JEN – instead, include a BACK button. "Esc" generally means to quit the game. Sort of standard game design.)

(Michael – Added back button to menu description.)

3.1.Main Menu

The main menu will have the following choices: Grand Prix, Bonus Stages, Practice, Options and Credits. The following keys will access each choice, respectively: 'g', 'b', 'p', 'o', 'c'. The following flow chart depicts the how the main menu links to the other menus in the user interface.



3.1.1. Credits Screen

The credits screen will display a list of the people responsible for developing the game and their role. The list is as follows:

- Falling Down Stairs Studios
  - Brian Trevethan - Producer, Lead Graphics programmer
  - Michael Dawe - Game Designer, Lead Physics programmer, AI programmer
  - Alex Pecoraro – Product Manager, Lead AI programmer
  - Amit Karim – Technical Director, Lead Everything Else programmer
- Digipen
  - Jen Sward

(JEN – include the list)
(Michael – list included)

3.1.2. *Choose Which Settings Menu*

This menu will allow the user to choose which type of settings they want to edit. The user will choose from the following:

- Graphics Settings (JEN – what settings will you allow them to change?)
- Sound Settings
- Controller/Keyboard Settings

3.1.3. *Control Settings Menu*

The control settings menu will allow the user to customize the controls that they will use to control their vehicle in the game.

(JEN – Technically, I'd make all the sections above as sub-sections)

(Michael – done)

3.1.4. *Game Setup Menu*

The game setup menu will allow the user to select which vehicle they want to use. If not already entered, the user will be prompted for their name. Once ~~all game settings have~~ the player has chosen their vehicle and weapon configurations, he or she can go to the game loading screen by selecting "Start Game" or pressing enter.
(JEN – what are the "all game settings"?)
(Michael – reworded for clarification)

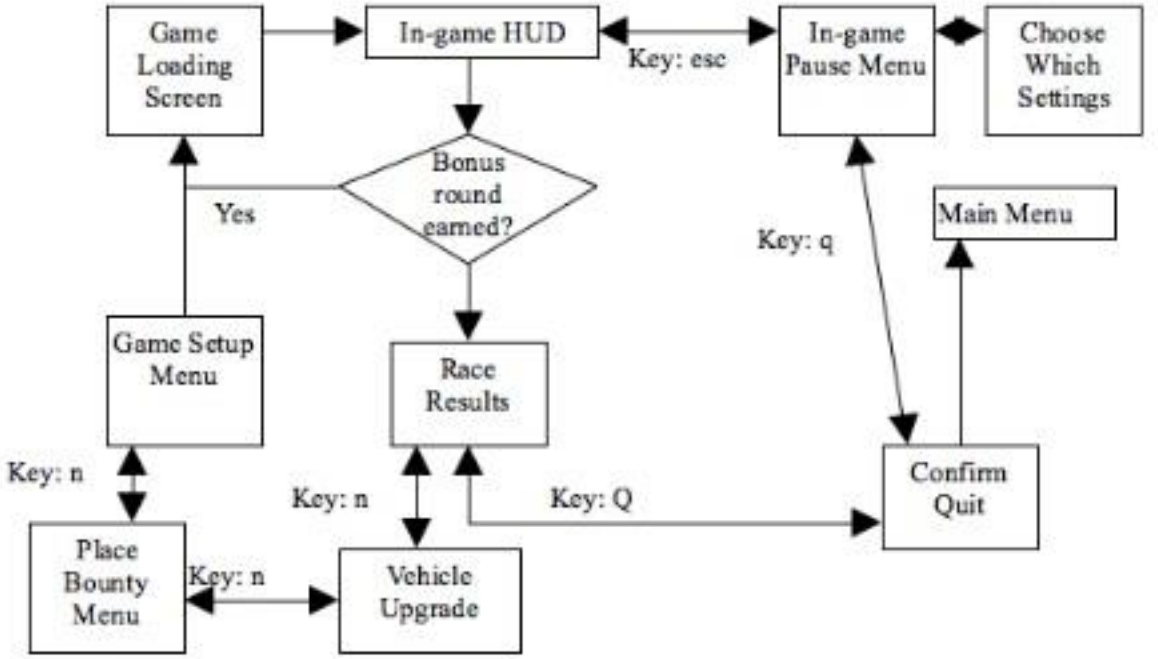
3.1.5. *Game Loading Screen*

The loading screen will display the type of game being played (race, obstacle course, or death-match), the number of players selected as well as the names and vehicles that will be used by the other players. Additionally, this screen will display a progress bar to indicate how much time is left until the game begins.

(JEN – uh, this is the only place where "obstacle course" is used. You briefly mention death-match (multiple spellings, btw) but don't explain it. What are they? You need to define them as a game mechanic. How is the play different, if at all? How do the AIs behave differently? Since there are different goals in the different types of races, you need to design them.)

3.2.In-game Menus and Screens

The flow of the in-game menus and screens is depicted in the following flow chart:



(JEN – for really good flow charts, label all arrows and only go top→bottom, no "up" unless it's a return to previous.) **(JEN – this is also good gameplay information. I need to know when I can upgrade my vehicle, and now learn I can only do that after I successfully complete a race.)**

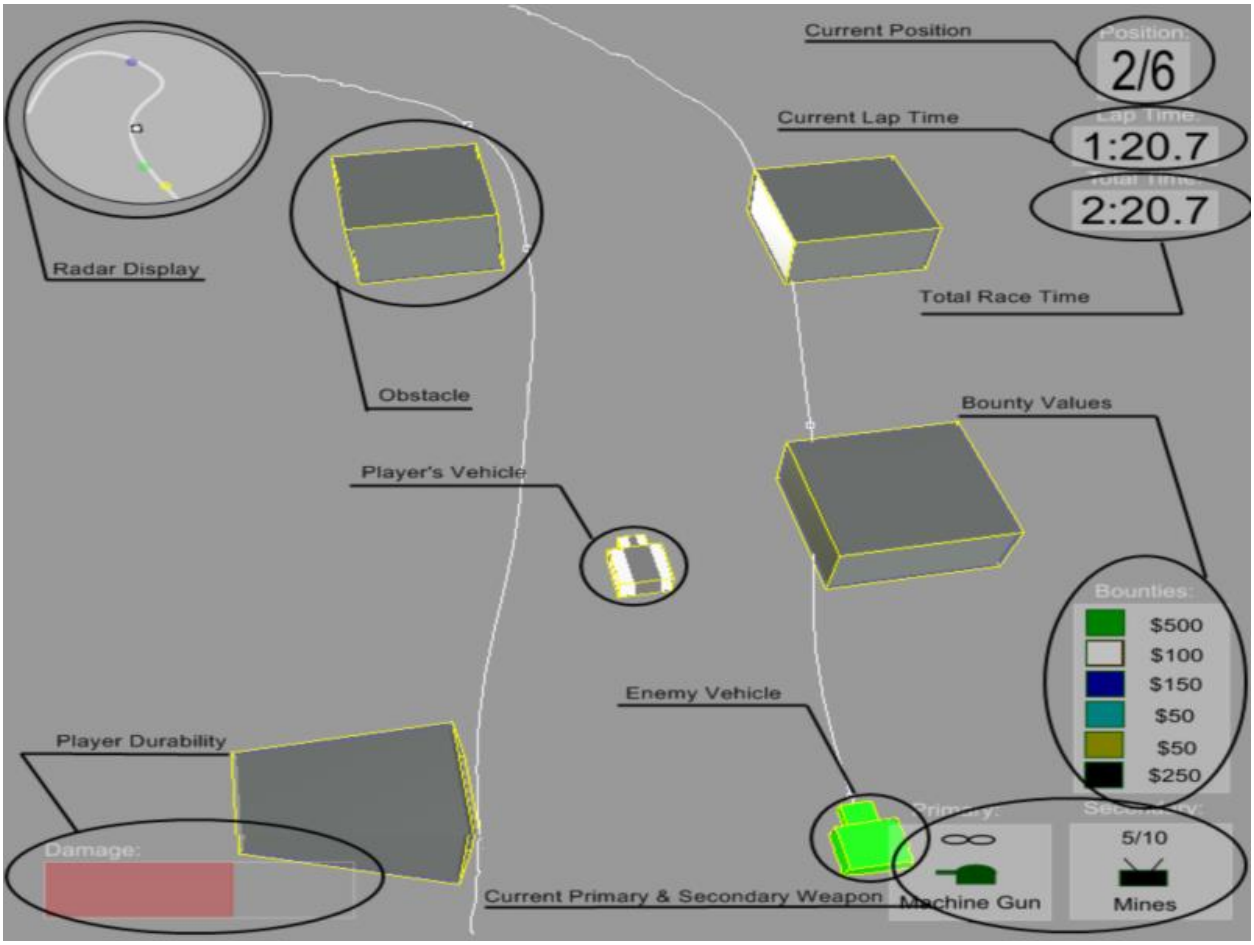
3.3.In-game Heads Up Display

The in-game HUD will show the following information:

- Amount of damage the player has left to take before their vehicle is destroyed.
- Which weapons the user has on their vehicle.
- Currently active primary and secondary weapon.
- Amount of ammo in the primary and secondary weapon.
- RADAR showing the locations of the other competitors and a birds-eye view of the racing track.
- List of the bounty amounts for each racer. In addition, money icons will briefly hover over the racers cars any time they come into view.
- Current place of the player (1st place of 6th, 3rd of 6th, etc.)
- Current lap number (Lap 2/3)

- Current race time
- Current lap time
- Best lap time

By pressing the 'Esc' key the user can pause the game and bring up the In-game Pause Menu.



(JEN – good. Explain the box shapes and the things that look to be cameras. Note that the screen you're showing is not too scale: computer monitors/viewports are wider than taller.)

(Michael – Labeled objects and fixed aspect ratio.)

3.4.In-game Pause Menu

The in-game pause menu will have the following choices:

- Resume – this item returns the player to the current game.
- Settings – this item takes the user to the Choose Which Settings Menu
- Return To Main Menu – prompts user and returns to the Main Menu upon confirmation. Choosing Cancel will return the player to the game.

3.5.Race Results Menu

The race results menu will display the race rankings, the amount of money earned for both bounties and race award money, and the total amount of money that each player has accumulated for all races and bounties throughout the entire game. From this menu the user will be able to choose from the following items:

- Next – takes the user to the upgrade vehicle screen
- Return To Main Menu - prompts user and returns to the Main Menu upon confirmation. Choosing Cancel will return the player to the game.

3.6.Upgrade Vehicle Menu

The upgrade vehicle menu will allow the user to buy new vehicles, weapons, and ammo. The menu will display the following items:

- The currently active player's inventory and money.
- Items, organized by category, able to be purchased

(JEN – this is possibly the place where the player will spend the second most amount of their game playing time. What will it look like? Show some sketches. Can the player sell items? How will you inform the user that they can't purchase any more, or that all their weapon slots are used? Will there be a visual of the ship? How will you differentiate between ships and weapons? Ammo?)

3.7.Place Bounty Menu

The place bounty menu will allow the user to place bounties on the other racers. It will show the following information:

- List of the other players in the game and how much bounty has been placed on them by the player as well as the total bounty placed by all players.
- How much money the player has to place bounties on the other players.

The following diagram is a mock up of the Place Bounty Menu:

(JEN – talk with me about this)

3.8.Sound list

Sound Effect Name	Description	Filename
Machine Gun Firing	Sound of futuristic machine gun firing.	MachineGunFire.wav
Machine Gun Firing (out of ammo)	Sound of machine firing with no ammo.	MachineGunNoAmmo.wav
Rocket Launch	Sound of a small rocket being launched from a vehicle.	RocketLaunch.wav
Rocket Flying	Sound of a small rocket being flying.	RocketFly.wav
Rocket Explosion	Sound of a small rocket exploding upon impact.	RocketExplosion.wav
Laser Charge Up	Sound of a futuristic laser charging its power up before being fired.	LaserChargeUp.wav
Mine Drop	Sound of a metallic mine being dropped from a vehicle to the ground.	MineDrop.wav
Mine Explosion	Sound of a mine exploding.	MineExplosion.wav
Vehicle Impact	Sound of two vehicles colliding.	VehicleImpact.wav
Race Count Down to Start	Four beeping sounds with increasing tone to indicate a race is about to start, the final beep starts the race. Each beep should be one second apart.	RaceCountDown.wav
Race Finished in 1st place	Congratulatory sounding music to indicate that you finished first	Winner.wav
Race Finished outside 1st place	Negative sounding music to indicate that you didn't win	Loser.wav
Warning	Alarm like sound to	Warning.wav

	indicate you are about to die.	
Menu Choice Made	Sound that indicates you have selected a menu item.	MenuChoice.wav
Engine Noise	Sound of an engine.	Engine.wav
Rocket Boost	Sound of a rocket booster being fired.	RocketBoost.wav
Nitro Boost	Sound of a nitro boost being engaged.	Nitro.wav
Powerup pickup	Ca-ching sound or something similarly positive played when a powerup is picked up.	Powerup.wav

In addition to the above sound effect, *The Exiled* will be able to play users' local MP3.

(JEN – you really want to show where each sound effect will go or be associated with action, animation or whatever. What SFX will you play with a button press in the menu? If the player wins the race, will some special sound effect or music play, or what? Maybe some special graphic? Tie the SFX list with the art list or at least give each SFX a description so the audio guy can select the correct sound effect.)

(Michael – added the sound list Alex wrote)

3.9.Art list

Art Name	**Description**	**Filename**
The Exiled Title Screen	The game's initial screen	n/a
Falling Down Stairs Logo	Our logo.	FallingDownStairsLogo.jpg
Sheckleford Mesh	The mesh used for the Sheckleford vehicle	Sheckleford.x, Sheckleford.max
Sheckleford Texture	The texture used for the Sheckleford vehicle	Sheckleford.bmp
Tempest Mesh	The used for the Tempest vehicle.	Tempest.x, Tempest.max
Tempest Texture	The texture used for the	Tempest.bmp

	Tempest vehicle	
The Tank Mesh	The mesh used for the The Tank vehicle	TheTank.x, TheTank.max
The Tank Texture	The texture used for The Tank vehicle.	TheTank.bmp
Fastrack Mesh	The mesh used for the Fastrack vehicle	Fastrack.x, Fastrack.max
Fastrack Texture	The texture used for the Fastrack texture	Fastrack.bmp
Machine Gun Bullet	The image used for the machine gun bullet	MachineGunBullet.bmp
Pulse Laser	The image used for the pulse laser projectile.	PulseLaser.bmp
Mine	The image used for the mine	Mine.bmp
Rocket	The image used for the rocket.	Rocket.bmp
Smoke	The image used for the smoke effect when a vehicle is damaged.	Smoke.bmp
Fire	The image used for fire effect for explosions and other fire effects	Fire.bmp
Energy Shield	The image used for the energy shield effect.	EnergyShield.bmp
Cash Bag	The image used for the cash bonus powerup.	CashPowerup.bmp
Car Repair	Image of a wrench used for a car repair powerup.	CarRepair.bmp
Damage Amplifier	Image of a lightning bolt used for the damage amplifier powerup.	DamageAmplifier.bmp
Nitro Boost Powerup	Image used for a nitro boost powerup.	NitroBoost.bmp
Obstacle Meshes and Textures	Meshes and textures used for obstacles and/or walls in the game. We haven't decided what these will be yet.	n/a

Terrain Skins	Textures used for the terrain. (We are still deciding on this)	n/a
Skybox Skins	Textures used for the skybox. (We are still deciding on what these will look like)	n/a
Vehicle Thumbnails	Thumbnail images of each vehicle for the menu system – used for buying new vehicles.	SheckleforđThumb.bmp, TempestThumb.bmp, TheTankThumb.bmp, FastrackThumb.bmp
Weapon Thumbnails	Thumbnail images of each weapon for the menu system (buying weapons) and the HUD.	MachinGunThumb.bmp, PulseLaserThumb.bmp, MineThumb.bmp, RocketLauncherThumb.bmp, RocketBoosterThumb.bmp EnergyShieldThumb.bmp
NPC Thumbnails	Thumbail images of each NPC in the game for the menu system.	AxleThumb.bmp, RabinThumb.bmp, TamiThumb.bmp, IkemThumb.bmp

(JEN – as with the sound list, you need to be very explicit. What do you expect to have made for the game, in great detail? What do the ships look like? What do the backgrounds look like – Mars or Urban Decay? How many polygons for the models? What about all the power ups, obstacles or object to collect? How big are they relative to the size of the player? Will you use any level of detail (MIP mapping or other) for the other objects and other ships when they're in the distance?)
(Michael – added an art asset list.)

4. Technology

4.1.Target Platform & Distribution

Target Platform: Windows XP SP2
Distribution: CD-ROM / Download

- 1.2 GHz Pentium IV
- 256 MB RAM
- DirectX 9.0c Runtime environment
- Windows XP
- 3D Hardware Acceleration, 32MB VRAM recommended
- Sound Card recommended

(JEN – be very specific. Sound card? Video card? RAM? VRAM? APIs? Etc.)

(Michael – Added some detail about video/sound)

4.2.Major Points of Development by Engine Proof

- Drivable Terrain
- Basic Physics engine framework (simple collision etc.)
- Collision detection
- Demonstration of the AI not necessarily within the engine framework, probably a separate demo.
- Basic implementation of weapons on prototype vehicle

4.3.Technical Goals

- Fully drivable terrain
- A complete trigger loaded map
- Collision detection
- Particle engine
- Physics engine tailored to the game's mechanics (a mix between realism and arcade)
- AI engine capable of balancing multiple goals with tweakable parameters for AI "personalities"
- Sound FX implementation
- Implementation of a command console integrated into the engine

4.4.APIs / SDKs

The following technologies will be used for development and will not be included in the game distribution:

- DirectX 9.0 SDK (notably Direct3D, DirectInput)
- 3ds Max 6.0
- Microsoft Word ™/Powerpoint/Excel
- Visual Studio .NET 2003
- Doxygen
- Subversion
- FMOD

(JEN – you want to make it clear to the reader what you are shipping with your game and what you are using for development (FMOD will be included in the game, and will be credited)

(Michael – added a note specifying these technologies are used during development only)

4.5.Documentation and version control

Documentation will be done using doxygen with rigorous documentation guidelines. Version control will be handled with Subversion.

5. Costs

Estimated Development Cost: $450,000
Estimated Retail Price: $40

6. Schedule

6.1.Milestones

- 09/28/2005: Begin the Technical Design Document
- 10/12/2005: Begin prototyping the system
- 10/18/2005: Complete the Technical Design Document
- 11/09/2005: Complete the engine proof
- 12/08/2005: Complete first playable build of the game

Additional details to be added as necessary, but the above dates are non-negotiable.

6.2.Tentative Dates

- 02/01/2006: Second Playable
- 03/01/2006: Alpha
- 04/01/2006: Beta
- 04/21/2006: Final

7. Risks

7.1.Technology

- Several of the technologies that are to be put into use for *The Exiled* have not been used by any of the team members before. The schedule will have to account for this by setting clear goals and milestones for the team to reach while learning these new technologies. The technical design will include a list of priorities, broken down into things that absolutely must be accomplished at a minimum for the game to work, things that would help the gameplay, and finally things that would add polish but do not affect the gameplay itself. The producer will have the job of making sure everything from one list is complete before any items from the next list are worked on. Anything from the "bare minimum" list must be accomplished by Alpha, or the team will be forced to abandon items from lists higher up as they refocus their efforts on the first list. Items on the second list must be accomplished or abandoned by Beta. Anything on the third list will only be worked on as time permits.
- The AI is the most complex and daunting technical challenge we will face. With a game design heavily based upon player-computer interaction the AI needs to be realistic in behavior in order to maintain the player's interest. Work on the AI will take a priority from the start with the goal of a working (albeit simplified) model of the AI engine demonstrated by engine proof.
- The implementation of a stable and versatile particle engine that will handle many aspects of the rendering, from explosions to projectiles to engine smoke. The relative independence of the particle system from the actual mechanics of gameplay means that any setbacks will not slow development and the system itself can be radically reworked without having to change too much code.
- The physics engine which will have to offer a compromise between reality and arcade style fun, involving certain elements of realism in attributes such as acceleration / deceleration and collisions. Every object in the game will contain a "physics" packet that will store necessary information on acceleration/deceleration/mass etc. that the physics engine will have ready access to when it needs to implement any collisions as well as allowing objects to monitor their own accelerations freeing up some of the workload.

7.2.Development

- The development team is generally skilled. The team should therefore be careful of overconfidence; trying to do too much without a proper plan or design could easily turn the project into a disastrous mess. To identify this problem, the team's

goal lists will be evaluated at every major milestone (engine proof, alpha, beta) to ensure that tasks are finished on time. Weekly production meetings will identify what people are working on and serve to refocus their efforts into areas most needing attention.

7.3.Team

- The team will only be meeting for a few hours every week to make sure their code comes together cleanly and talk about development issues in general. It remains to be seen if this will be enough time to perform integration tests and code reviews. If not, it may be necessary for team members to meet together for longer periods of time or more frequently. By Engine Proof, the team should evaluate this issue and make a decision to keep it from becoming a bigger problem.

7.4.Equipment

- Equipment is generally being provided by DigiPen, and is thus not an issue. The team should resolve to test the game on as many different systems as possible at each major milestone.

7.5.Competitors

- *The Exiled* is not in direct competition with any external commercial game. (JEN – the point of this section is for you, as game developers, to know what your competition would be. Perhaps a better title would be "Market Comparison." You need to know the market, what gamers look for, what games sell, what games don't.)

7.6.Cost:

- The major cost associated with production of *The Exiled* will be in the team's time. Schedule risks are noted below.

7.7.Schedule

- The schedule for production is tight. The producer of the project will have to keep close track of the goals set out for the team, and note any slip on the schedule

carefully. In order to avoid late-season crunches, slips in the schedule should be dealt with immediately with the full effort of the team. Slips in schedule could come at any time, so the team as a whole will have to remain vigilant. Major reviews of task completion will be done at every major milestone, with bi-weekly schedule updates after production meetings.

8. Team Information

8.1.The Studio

Falling Down Stairs Studios was formed in September of 2005, as several Masters' students at DigiPen Institute of Technology came together to work on their first game, *The Exiled.* A racing combat game with an exciting bounty hunting twist, *The Exiled* is scheduled for release in the spring of 2006.

8.2.Team Members

Michael Dawe is the Game Designer for Falling Down Stairs. Originally from New York, Michael graduated with Bachelor Degrees in Computer Science and Philosophy from Rensselaer Polytechnic Institute in 2002. After spending three years programming professionally, he moved to Washington to pursue a career in video games. When not working on design documents, he throws himself at the planet from two miles up in the air, ostensibly for fun.

Brian Trevethan hails from Denver, CO, and acts as Producer at Falling Down Stairs. He attended Colorado State University where he graduated in May of 2004 as an Honors Scholar with a Bachelor of Science in Computer Science. He became a conditional Master's student at the Digipen Institute of Technology in September of 2005. His development interests include computer graphics in the context of modern computer and video games and realistic physics simulations.

Amit Karim is the technical director for Falling Down Stairs. Amit earned a Bachelor of Science in Computer Science from Drake University in 2004, with minors in Physics and Mathematics. His interests include computer graphics with an emphasis in virtual reality, operating systems, and the open source movement.

Alex Pecoraro serves as Product Manager and programmer for Falling Down Stairs Studios, with over six years professional programming experience and over one year 3D modeling experience. Alex is originally from Evergreen, Colorado having come to Washington to attend college at the University of Puget Sound where he earned a Bachelor of Science in Computer Science. Since graduating, he has worked at five different companies in four different technological industries. Currently he is employed in Lockheed Martin's Simulation, Training, and Support Division on the 3D graphics engine of their military combat simulator.

JEN'S NOTES

A very good first GDD. Well formatted, you all have the knowledge of what makes a professional document. Things that you are missing are:

a. AI details. You need to fully design what you want the AIs to be able to do.

b. Art and SFX details. You need to write complete lists that make it easy for an external art team (for example) to make all the art for use in your game. You also need to know the size of objects, information on the textures, etc.

GDD = 80/100 good, but you want to get more information and fully design the AIs, art and sound

Presentation = 95/100, probably the only thing I'd do is make your images smaller :D

Achievability – 8/10. This is hard to say, as it's hard to know all your skills yet. But I feel this is a good game and is easy to modify as you progress.