Diapetics

Core Design Document

By Jayson B Wenzoski

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Date	Updates	Version
10/19/07	- executive summary, market research - basic layout structure completed	0.1
10/20/07	- market research expanded, links added	0.2
10/28/07	- gameplay and logbook basics finished -header and footer formatting	0.3

1.0 Game Overview

1.1 Executive Summary

1.1.a Genre: virtual pet
1.1.b Target Platform(s): Nintendo DS
1.1.c Target Audience: Type 1 diabetics

1.1.d Key Statement:
Managing diabetes for the first time can be a hard thing to do, especially for people without easy access to diabetes education centers. The goal of Diapetics is to show children, in a fun and interesting way, how to manage their diabetes through practice.

1.1.e Game Overview:
Players begin with a small blob creature. This creature will become the player's diabetic counterpart through meal planning, exercise, blood glucose monitoring and insulin administration.
The main goal is to keep blood sugars regulated and within a targeted range. The player is encouraged to do so through their creature's evolutionary steps. If the pet's diabetes is well maintained and blood sugars are kept within the targeted range the players' pet will take evolutionary steps sooner. With each step the player may upgrade their pet with parts and stats.

1.1.f Key Features:
Real-Life Reference:
- food quantities, meal plans, medication and blood glucose levels are portioned according to real-life quantities for useful reference

Fun Exercise Mini-Games and Battles:
- fun, simple games to give the diapet exercise and to keep the player motivated
- battle other diapetics, this is where pet stats are crucial, so the player will be motivated to keep good control of their diapetic

Logbook Application:
- not only is this a game to help newly diagnosed diabetics learn to manage their diabetes, it is a mobile application to log their blood sugar levels, insulin intake, exercise and meal planning

1.2 Market Research

1.2.a Competitive Analysis:

There have been several attempts to create an education diabetes game in the past, however each attempt has been unsuccessful due to poor gameplay/diabetes relevance. Either the gameplay had no relevance to diabetes regulation or there was a lack of enjoyable gameplay with overabundance of information.

Virtual Patients are used within the medical field to help train doctors and nurses to deal with medical emergencies and cases. There currently are no fun alternatives for patients themselves to learn about the conditions they have while using factual medical information within the gameplay itself.
http://en.wikipedia.org/wiki/Virtual_patient

There are several simulation games and a many virtual pets on the market, however there are no hybrids between the two. Also available are two medical based video games with linear storylines for the Nintendo DS: Atlus' "Trauma Center" series and Dreamcatcher Interactive's "LifeSigns: Surgical Unit"
http://en.wikipedia.org/wiki/Sim_games

1.2.b Market Information:

Currently more than 230 million people worldwide are affected by diabetes. This number is expected to rise to 350 million by 2025. Worldwide 70,000 children develop Type 1 diabetes annually. Type 1 diabetes occurrence rate is rising 3-5% per year; the greatest rise occurs in 5-9 year olds.
Source:
http://www.jdrf.ca/files/File_Repository/Marketing_and_Communications/Fact_Sheets_07/Type_1_Diabetes_Facts_07_Eng.pdf

With the coupling of the projected growth of the entire video game market, increasing casual game use and access to broadband wireless networks the global market share of this type of game is not limited to diabetics alone. Fans of this sub-genre of simulation games will find that there is still enough fun gameplay and interaction that the diabetic simulation aspect is just another challenge within the game.

In game advertising may also be an option to generate more revenue. There are several pharmaceutical companies involved in the production of diabetic supplies and interest in advertising using Diapetics could be generated. In game advertising need not be obtrusive, simply using company branding in subtle ways would be much more effective.

1.2.c What does this mean?

This means that there is a definite market for newly diagnosed Type 1 diabetics as well as current Type 1 diabetics that need more information and training to regulate their diabetes. Currently there are community programs and online resources to help educate newly diagnosed diabetics; however there are no persistent methods of diabetes education that diabetics may rely upon other than trial and error with their own health. This poses a risk to many people due to complications that arise due to poor control of diabetes.

Diapetics aims to help educate Type 1 Diabetics and essentially lower the occurance of complications through knowledge and practice in a safe and fun virtual environment.

This also means that this game is not limited to diabetics alone. Diapetics can be marketed to non-diabetics as a fun and challenging virtual pet with mini-games, PvP and avatar customization.

2.0 Gameplay

2.1 UI Elements

2.1.a Opening Menu

The opening sequence upon start up with no previous data consists of:

a. Entering player's name and date of birth
b. Selection of base pet
c. Naming of pet with on-screen qwerty keyboard
d. Introduction to basics of gameplay through tutorials

Opening Menu upon start up with previous data consists of:

a. View of current pet
b. Main User Interface
c. Greeting

Greetings vary depending on how long the player has gone without playing and the current status of their pet.

2.1.b Main User Interface

Main User Interface has seven (7) options that appear on the touch screen of the DS. These options are:

a. Check Blood Glucose (blood drop icon)
b. Administer Insulin (syringe icon)
c. Feed Pet (apple icon)
d. Play Mini-Games (basketball icon)
e. Access Logbook (book icon)
f. Connect for PvP (two swords Icon)
g. Options Menu (question mark icon)

2.1.c Secondary Navigation Menus

These menus appear once the player has selected an option from the main user interface.

2.2 Progression Overview

2.2.a How does the player progress?

Player progression is tracked through proper blood glucose target levels. If the player is within the targeted range they are awarded points over time. These points are not shown to the player but are used to determine when the pet will "evolve".

The player's pet takes an evolutionary step as a reward for good control of blood sugars. Evolutionary steps come in the form of customizing and advancing the player's pet.

Pet Customization:

The pet begins as an amorphous blob with no discerning parts. Each evolutionary step awards the player with the option to add new parts to the pet such as overall body shape, head, eyes, arms, legs, wings and tails.

Pet Advancement:

Pets begin with a base of one (1) for each attribute. Each evolutionary step awards the player ten (10) points to distribute among the attributes.

note: full list of parts and what customizations can be done is outlined in 2.5.a

The player may not customize the pet in any way between evolutionary steps.

Once the player has customized their pet to their liking and they reach an evolutionary step, they may choose not to change parts or customize, however they will still receive points to distribute among pet attributes.

2.2.b What is regression?

Regression is what happens when the pet's blood glucose values are too high or too low. This teaches the player that poor control of diabetes will lead to consequences and complications.

Regression comes in two forms that are chosen based on whether or not the low/high is prolonged or if it is sudden:

If the low/high is sudden and extreme, the pet will suffer major damage and the chance of illness will increase.

If the low/high is prolonged the pet will slowly take damage, the chance of illness will increase and the pet may even begin to lose attribute points and undergo random mutations of parts and customization.

2.3 Diabetic Gameplay Elements

2.3.a Diabetic Gameplay Elements Overview

Diabetic gameplay elements consist of: blood glucose monitoring, insulin administration, feeding the pet, sick days and exercise.

These gameplay elements are here to give the player practice controlling diabetes and to simulate the experience of being diabetic. These elements should be as accurate and relevant as they can.

2.3.b Blood Glucose Monitoring

Blood glucose monitoring is done by selecting the option from the Main User Interface. When the player selects to view the monitor they are given two choices:

a. test blood sugars
b. view graph of past monitoring

If the player chooses to test blood sugars there is a sequence and animation of pricking the pet with the tester pen, touching the blood to the monitor strip, then a graphic showing the result. This effectively shows and reminds the player how to test their own sugars.

If the player chooses to view the graph of past monitoring they will be taken to a screen that shows past results. There are three settings in this area that the player may view: past twenty-four (24) hours, one (1) week and one (1) month.

The targeted range for blood glucose levels depends on the type of monitoring selected. In real-life there are two different scales used. The player can choose the type used in-game through the options menu or by hitting a toggle switch on the blood glucose monitor.

2.3.c Insulin Administration

In reality there are many, many different types of insulin on the market today, however there are basically two types of insulin: short acting and long acting.

Short acting insulin provides a quick drop in blood glucose and is administered before meals. Long acting insulin is administered either once a day or twice a day depending on the need. Long acting insulin has a slow and gradual rise and slow and gradual decrease in its effect on blood sugars.

The way the player administers insulin is by first selecting the syringe icon on the main user interface. Two types of insulin appear on screen and the player touches one to select it. When the player selects the type of insulin a syringe is put into the bottle. Then the player must draw an upward line to fill the syringe to the desired amount. Once the proper amount has been drawn up the player touches the pet in the background and then draws a line down to inject.

2.3.d Feeding the Pet

The player chooses to feed their pet by selecting the Feed Pet icon in the main user interface.

Once the player has selected the Feed Pet icon they are taken to a menu showing several different food items. The player selects the food item and they are taken to that food item`s information page which displays the different quantity choices and the corresponding carbohydrate and sugar amounts. Some foods have special properties such as slower release of sugars or foods that augment the absorption of sugars/carbs of other foods.

Once the player selects the food there is a short animation showing the pet eating.

If the pet is ill or has already eaten, it will refuse food.

Some foods can be used to quickly recover from low blood sugars.

2.4.e Sick Days

Sometimes a pet will become ill. During these times blood sugars are harder to control and extra insulin may be needed. Blood sugars will rise automatically without feeding.

Pets during this time will refuse food.

Extra water must be given to the pet during this time to ensure that the pet doesn’t become dehydrated.

2.5.f Exercise

Exercise is another key ingredient to controlling blood sugar levels. If the player plays either the race game or H.O.R.S.E. with their pet, the pet's blood sugars will slightly decrease.

2.4 Exercise Mini-games

2.4.a Race

The player enters into a race against other pets (CPU or other players) to get to the finish line. Players race along a track filled with obstacles they need to avoid and there are speed boosts to give them a short burst of speed.

2.4.b H.O.R.S.E.

This game is based on a basketball game called H.O.R.S.E.
The object of this game is to get 5 points before your pet, or an opponent player (CPU or another player).
Points are earned by making a basketball shot from the three point line. The player(s) are at a stationary viewpoint from the three point line looking at the basketball net. (a first-person perspective)
The player uses the stylus to grab the ball and then using an upward motion and lifting the stylus they throw the ball. The throw is determined by the line of motion, speed of movement and time of release.

2.4.c Quiz

The quiz is a mix of multiple choice questions and some questions answered by typing them in.
Questions are based on diabetes education and all answers should be somewhere within the game. Places where answers can be found: loading screens, food information, diabetes gameplay (such as insulin/blood sugar interaction)

Some questions asked may be scenario questions, like what to feed your pet if their blood sugars are extremely low on a sick day.

The quiz has two different modes: single player and multi-player

Multi-player questions are asked at the same time to both players and the first to answer correctly wins that round.

2.5 Pet Attributes

2.5.a Parts

The player's pet begins as an amorphous blob and progresses by taking shape and adding different parts. As this is the main form of progression within the game there must be enough variety and uniqueness to satisfy the player.
Here is a list of different things the player may choose from to add to their pet:
- quadruped/bipedal
- legs
- arms/tentacles
- torso
- head
- eyes/eye
- mouth
- nose
- ears
- hands/feet/paws/claws
- tail
- wings
- fur tufts/hair

In addition to adding parts the player can customize what surface texture their pet has. This can be chosen part by part or as an overall whole. The colour and type can be customized. Different types are:
- scales: large, medium small
- skin: bumpy, smooth, wrinkly, slimy
- fur: course, long, short

2.5.b Stats

Pet stats are mostly just for PvP battle.
All battle pet stats begin at a value of one (1).
Here is a list of the battle pet stats:
- strength: determines how hard the pet hits during battle
- speed: effects how quick the cool down to attack during battle is
- intelligence: effects the chance of the pet following what order the player gives it is

Other stats are:
- health: health begins at 100 and each point added increase the total health by 5

2.6 PvP Interaction

2.6.a Doing Battle

If two players have Diapetics and their pets have progressed at least three evolutionary steps they may choose to battle.

Player`s are ranked by number of wins. Each rank coincides with the trophies given for number of wins (see 2.6.b) :

- 0-10 wins = Rank E
- 10-25 wins = Rank D
- 25-50 wins = Rank C
- 50-100 wins = Rank B
- 100+ wins = Rank A

Battle is chosen by selecting the battle icon on the main user interface.
If there are more than two players present a list of opponents will appear and the player will select which player/pet to battle.

Battles are fought through a menu system and are real-time.

There are three options within a battle:

1. Attack
2. Defend
3. Item

The base attack of any pet will do damage of 10-20 health points.
There is a 10% chance of a critical hit of 30.
Each point in a pet's strength attribute is equal to an increase of equal percentage.
Eg. 20 Strength = 20% Increase of damage = 10-20 hp damage + 2-4 extra damage

If the player chooses to Defend, then the pet will receive 80% less damage than usual.

The player may choose to use an item. Items vary in use and strength: some regain health, increase attack power, increase defence, slow opponents and weaken attack or defence of opponents.

Note: see list of items for specific attributes and uses of each

2.6.b Receiving Trophies and Awards

As a reward for battling other pets players receive trophies and credit awards. Trophies are given based on various criteria:

- battles are timed and there is a trophy for quickest victory (30 credit award)
- if a player uses certain items a number of times (10 credit award)
- if a player`s pet is victorious with most of its health intact (20 credit award)
- if the player has won several battles: trophies given at 10, 25, 50, 100 wins (player receives 100 credits for each of these trophies)

Credit awards are given based on rank of losing pet in battle. Extra credit awards are given with each type of trophy as well.

Rank E = 20 credits
Rank D = 30 credits
Rank C = 50 credits
Rank B = 75 credits
Rank A = 100 credits

In addition to winning credits each player may wager credits before battle. Wagers much match and the winning player receives all of the wagered credits.

3.0 Logbook Application

3.1 UI Elements

3.1.a Opening the Logbook

The player accesses the logbook through the main user interface by selecting the book icon.

If the player is opening the log book for the first time they will be asked to confirm the current date and time. If the player needs to change the current date and time they will be asked to change the date and time.
Once the player has the correct date and time they will be asked if they would like to enter in older data or continue on to enter in current data.

3.1.b Menu System

The basic menu consists of a chart of blood glucose results, insulin amounts and any notes.

Data is entered in by first selecting the proper box for the date, time and type of data. Then the player uses the on screen keyboard to type in blood glucose amounts, insulin amounts or short notes.

3.2 Data

3.2.a Blood Glucose Reports

Tracking blood glucose levels is important to diabetics because it helps them regulate their insulin and food intake.

Blood glucose levels have two different types of settings and are interchangeable.

3.2.b Insulin Tracking

There are several different types of insulin available to diabetics and they may want to enter in their own designation of which type.
This can be done by going to the options section from the main user interface.

3.2.c Notes

Notes are for anything from tracking illness to any abnormal occurrences or food eaten that day.

3.2.d Graphing Results

The graph is accessed by clicking on the graph icon in the logbook.
Using the same style of graph used by the Diapetic pet a user may see three levels of results based on the data they entered in the logbook.

3.3 Updates

3.3.a Uploading Data

Data from the logbook can be uploaded to computer through Wi-Fi connection if available.
This data can then be sent or taken to a diabetics` endocrinologist for their reviews.

3.3.b Downloading Data

If the player wants to and has the proper Wi-Fi connection they may use a program on computer to enter in data for the logbook and download that data to Diapetic`s logbook application.

4.0 Art Style

4.1 Overview

4.2 Character

4.3 Backgrounds

4.4 Effects

4.5 UI Graphics

5.0 Audio

5.1 Overview

5.2 Music

5.3 SFX

6.0 Index