

Prosperville Game Manual

Welcome to **Prosperville** -- a game about a town where everyone can live long and prosper because they all learn Better Money Habits. This is part of our **Better Money Habits Life planning and Financial health** simulation game!

This game will take you through 5 life stages (from graduating High school all the way through retirement) and along the way you will make critical life decisions. Ultimately these life decisions will influence how much you enjoy a happy and satisfying life based on the financial impact and influence of these decisions and choices. Now we have all heard that money does NOT equate to happiness. But we also know that having the financial resources to satisfy your basic needs and achieve your long term goals can certainly help you on the way to a happy and rewarding life.

Some of the life and financial choices you will be making along the way through your life stages:

- Choice of college/level of college or starting right into a job
- Buying a car (a luxury sports car or that Chevy Volt)
- Buying a house (at different size and cost levels)
- Starting and growing a family
- Making Investments and saving for life/emergency needs and ultimately for a sound and secure retirement

1. Objective of the game

The objective of the game is to make financial decisions that achieve the highest life-long average happiness. Each decision you make in the game may impact your immediate happiness. Should you take a short term pain for a long-term reward? Or should you live in the moment?

2. Game dynamics

Each player starts with a same amount of cash at age 18. The game progresses through 5 life stages: Post High School, Young Adult, Peak Career, Near Retirement and Retired. Except the last stage, which is not playable, each stage comes with a set of events and choices. Players take turns to make their choice decisions during the game.

- The default initial cash level is \$0 for all players. The initial cash level can be changed to a different amount.

Table 1 below lists all life stages and their corresponding turns.

Table 1 Turn Table

Turn	Life Stage	Age	Description
1	Post-High School	18 – 19	Players make life stage decisions
2	Post-High School	20 – 21	A random event takes place that affects all players the same way
3	Young Adult	22 – 28	Players make life stage decisions
4	Young Adult	29 – 36	A random event takes place that affects all players the same way

Turn	Life Stage	Age	Description
5	Peak Earning	37 – 26	Players make life stage decisions
6	Peak Earning	27 – 32	A random event takes place that affects all players the same way
7	Peak Earning	32 – 56	Another random event takes place that affects all players the same way
8	Near Retirement	57 – 61	Players make life stage decisions
9	Near Retirement	62 – 66	A random event takes place that affects all players the same way
10	Retired	67 – 87	Not playable. Simulation runs until age 87

2.1. Turn

A turn is a unit of game progression where all decisions within a turn must be made before the game moves to the next phase. A player can make changes to a previous decision as long as the decision is made within the same turn.

2.2. Multiplayer Mode

The game can be played with multiple players on the same computer. In multiplayer mode, the game lets one player make all their decisions, then moves to the next player. Once all players made their decisions within a turn, the game moves to the next turn.

3. Player Attributes

A player has the following direct attributes: happiness, equity / wealth and debt.

The game also tracks these derived attributes and displays them in the player stats area on the top part of the right side panel: income, spending, and four types of debts.

All players start with 100 happiness value no matter the initial cash level.

4. Events

There are two types of events: Life Stage events and random events. Life stage events have choices that players can make, while random events do not. Although life stage events may affect players differently through the choices players make, random events have the same effect on all players once the events are revealed.

4.1. Life Stage Events

Life stage events happen right after the game reaches the first age of a life stage. These events are deterministic. Players can make decisions on the options each event offers.

4.2. Random Events

Random events are only revealed when the game reaches the right turn. Based on the turn table (see Table 1), random events take place at turn 2,4,6,7, and 9. Note that there are two random event turns in Peak Earning stage.

- Random events always happen at equal distance to each other within a life stage. If there is only one event, its effect applies to the middle of the life stage.

5. Happiness and Score

Based on the impact of the player's life stage choices, the happiness value is given to the player on a bi-monthly basis. The score of a player is the average of a player's happiness up to the time of a game play. The happiness value can be influenced by a player's equity / wealth, and their leisure spending.

The more equity a player has, the happier they become. Similarly, the more a player spends, the happier they get. However, there is diminishing return of wealth and spending on happiness. Wealthy greater than \$1.5M generally produces no additional happiness. Spending exceeds \$4000/month also has negligible effect on happiness.

- Both spending and saving can increase happiness value. Given the limited resources a player has, no player can increase spending and wealth at the same time. Can you strike the balance between spending for today and saving for tomorrow?

6. Bankruptcy

A player is bankrupt if their equity excluding student debt is below $-2 \times$ annual salary amount at any time. Once a player is bankrupt, they can no longer play the game.

7. Optimal Choice

The game is equipped with an AI that is designed to make choices that maximize the score at the end of each stage. Because the AI does not take into account impacts of current choices on later stages, nor does it forecast impacts from future events, it is not able to make life-time optimal decisions.

With that in mind, can you come up with an optimal set of decisions that maximizes the life time happiness?

8. How to Play

The screens will look like what you see in Figure 1 below (just an example from start of the game). By default, two players can play at once and you will each be making decisions independent of each other as you go through each life stage. As you progress through the game you will find the information on your decision items on the left side of the screen in separate boxes for each decision/choice (post HS choices below for the "post high school" life stage). You will also note that in the post high school life stage each participant will have to go through 4 life choices...then the next participant will enter their life choices (and you always progress through the game by hitting the green "next" button at the bottom of your selection choices.....please note that when it is time for the next player to enter their choices for each life stage the header of the game will change color.

To "start" the game (which from a life stage perspective begins as you graduate High School and is called "post high school") you will need to:

- First enter our Prosperville environment (prosperville.ipynb)
- Then hit the fast forward button (>>) at the top of the screen
- Then hit the red "restart" button that will bring you to the game starting point (see screen shot below)



Life Stage: 1/5 Post High School		Turn: 1/10	Player: player 1								
<h3>Post High School</h3> <p>Life Stage Choices 1/4</p> <p>This is the first stage of the game. This stage goes from age 18 to 21.</p> <p>What is your plan after high school?</p> <p>Selected Choice: First job full time</p>		<h4>Player 1 Attributes</h4> <p>Happiness: 100 Income: 0 Spending: 0</p> <p><u>Debt</u></p> <p>Student: 0 Car: 0 Mortgage: 0 Other: 0</p>									
 <h4>First job full time</h4> <p>Annual income: \$20,000. Paid bi-weekly at \$1,666.67.</p> <p>Select</p>	 <h4>In-State Public University</h4> <p>Student loan amount: 25,000. Monthly payment: \$277.56. Total interest: \$8,305.86.</p> <p>You receive \$400 monthly allowance.</p> <p>Select</p>	<h4>Player Ranking</h4> <table border="1"> <thead> <tr> <th>#</th> <th>Score</th> <th>Equity</th> <th>Debt</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>0</td> <td>0</td> <td>0</td> </tr> </tbody> </table>		#	Score	Equity	Debt	1	0	0	0
#	Score	Equity	Debt								
1	0	0	0								
<< Back Next >> Learning Tips Dashboard											

Figure 1 Game Starting Screen

As you make these choices and progress through the game (**by hitting the “next” Button at the bottom of the choices box**) you will see your scores and key financial metrics change.

The following metrics show values as of the end of the previous life stage:

- Happiness (Based on our financial impact/health to happiness algorithm)
- Monthly Income
- Monthly spending
- Debt sources:
 - Student
 - Car
 - Home mortgage
 - Other

Then below this data on the right side of your screen you will see your player ranking (if playing the multi-player game, if solo you will only see yourself):

- Game score for that segment/life stage
- Equity you have built up
- Debt you have acquired

These metrics allow you to do a rough estimate of your net worth.

Also note the **“Learning tips”** right next to the “next” button at the bottom of your screen. This allows you to **toggle back and forth between the game and Better Money Habits critical learning tips....**like learning about the time value of money or buying a cheap vs expensive car or the risks of taking on too much debt. You can kind of view this material as getting good advice from a trusted friend or financial advisor and can help you with your life choices as you move through the game...so better to check those out early in the game (kind of like getting good advice “early” in life 😊)

You will also note that we have included some “random” events in the game and these may pop up at a good time (and make a good time better...like getting a raise) or could be financially negative impacts that hopefully you have prepared for financially (like an unforeseen medical event or a spontaneous family vacation).

At the end of the game (when all participants hit retirement) you will receive a game summary that will allow each participant to look at all of their life choices and how they compare to each other and to our AI algorithm. **The summary view will also designate the winner!!!!... based on who ends the game with the highest happiness score.** Then you can scroll down through your life (by age/month) to see how your overall financial scores and your happiness scores changed based on life stage and your financial decisions...this allows you to learn what decisions you may want to choose differently as you play the game again....yes in Prosperville it is a little like ground hog day....”do overs” are allowed.