LateNite: An Online Game to Help First-Years be Better Prepared for the Challenges of College Life

Team 0111

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April 28, 2020

Jr. Design Spring 2020

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Glossary

Playthrough - The completion of one part of a game from start to finish

Blind - Playing for the first time without prior knowledge of the game

Run - Synonym for playthrough

Libraries - Groups of programming tools that can be downloaded online

Node Based Programming - Use of graphs to organize what pieces of code lead to each other

Game Engine - Software made for the development and running of video games

Open-Source - Software that is documented and free to use

Gamification - The process of incorporating some aspects of games into serious matters such as work

Cronbach's Alpha - A statistical measure of reliability amongst items in a single questionnaire

Readme - a text file that describes how to install and use a downloaded product

Abstract

LateNite is a point and click college simulation game that improves awareness of time and money management. In American colleges, time management and financial problems are reported to be among the most common challenges for incoming first-years.[1] In fact, studies have shown a correlation between poor academic performance and financial difficulty among college students.[2] Although the average Georgia Tech student may already be aware of the importance of time and money management as the first year continuation rate is 97%,[3] our role playing game's objective is to provide insight to their new life at Georgia Tech before their first semester begins. *LateNite* is a game that simulates life at college, allowing players to explore time management and monetary decisions in a game environment. The game will feature four "chapters": Chapter 1 offers a blind playthrough where players are encouraged to make decisions naturally; Chapter 2 teaches managing personal expenses; Chapter 3 focuses on time management; Chapter 4 challenges players' workload and budget. *LateNite* will be an educational supplement for academic coaches and seminar instructors who want to help first-years successfully navigate Georgia Tech.

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[1] Wendy Burt-Thomas, "Roadblocks Most College Freshmen Will Face," *My College Guide*, November 10, 2019, https://mycollegeguide.org/articles/college-courses/college-freshmen-problems

[2] Jennifer Crocker and Riia K. Luhtanen, "Level of Self-Esteem and Contingencies of Self-Worth: Unique Effects on Academic, Social, and Financial Problems in College Students," *Personality and Social Psychology Bulletin* 29, no. 6 (2003): pp. 701-712, https://doi.org/10.1177/0146167203029006003, p.705-709)

[3] "Georgia Institute of Technology - Main Campus Outcomes." College Factual, April 20, 2020. https://www.collegefactual.com/colleges/georgia-institute-of-technology-main-campus/outcomes/.

Introduction

Recently, a number of researchers have compared the effectiveness of using educational games in teaching, and have concluded that educational games create a more motivating learning environment than traditional classroom instruction.[4] Although video games have been used in education dating back to the 1960s,[5] educational game developers have attributed recent interest in the use of educational games to increased access to computers and computer literacy of today's society.[6] These researchers recommend designing games that do not "feel" educational, but rather are enjoyable and interactive.[7] These games should allow players to explore different choices with unstructured play where players would learn by trial-and-error rather than by memorizing information.

Our project takes an educational game approach as a method to demonstrate how time and money management decisions might affect a player's financial and academic success at Georgia Tech. The game to be developed is named *LateNite* and uses a fun point-and-click approach where the player tries to avoid having their character study all night long without sleep. This game targets prospective students who are considering attending Georgia Tech, first-year students as part of the orientation process (summer orientation), academic coaches to improve perspective for struggling students, or CS 1101/GT 1000 seminar students.

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[4] Thomas M. Connolly, Elizabeth A. Boyle, Ewan Macarthur, Thomas Hainey, and James M. Boyle. "A Systematic Literature Review of Empirical Evidence on Computer Games and Serious Games." *Computers & Education* 59, no. 2 (2012): 661–86. https://doi.org/10.1016/j.compedu.2012.03.004.

[5] Bryan P. Bergeron. *Developing Serious Games*. Hingham, MA: Charles River Media, 2006.

[6] Schindler, Laura A., Gary J. Burkholder, Osama A. Morad, and Craig Marsh. "Computer-Based Technology and Student Engagement: a Critical Review of the Literature." *International Journal of Educational Technology in Higher Education* 14, no. 1 (February 2017). https://doi.org/10.1186/s41239-017-0063-0.

[7] Mitchell, Alice, and Carol Savill-Smith. *The Use of Computer and Video Games for Learning: a Review of the Literature*. London: Learning and Skills Development Agency, 2004.

Time and money management rank high among the common reasons that cause students to drop out of college, where the dropout rate is highest among first-years.[8][9] The average retention rate for first-years nationwide is 68%.[10] For Georgia colleges and universities, the average is 62%.[11] However, for Georgia Tech the first-year continuation rate is 97%,[12] which implies that incoming Georgia Tech first-years appear to sufficiently maneuver hurdles that challenge many college first-years nationwide. As such, these statistics beg the question of what Georgia Tech first-years might gain from a time and money management role-playing game.

We believe that a role-playing game can give Georgia Tech first-years a head start in thinking about how they might initiate tactics and planning needed for successful time and money management at a strongly competitive university. In addition, because the game strives to simulate a real college experience specific to Georgia Tech, the students not only gain perspective on time and budget costs that they can expect to encounter given certain living situations, but also a feel for campus topography and campus engagement. In addition to acclimating players to life at Tech, the game can give information about time and money sinks such as riding the Stinger, waiting in a lunch line at the student's commons, and options for eating off-campus. Foreknowledge of campus life can help ease anxiety in transitioning from

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[8] Terri Williams. "Freshmen Students Are The Most Likely to Drop Out of College." GoodCall.com. GoodCall, September 6, 2019.
https://www.goodcall.com/news/why-freshman-are-the-most-likely-to-drop-out-of-college-01421/.

[9] "New Report: Yearly Success and Progress Rates for Fall 2012 Cohort." *Clearinghouse Today Blog*. National Student Clearinghouse, April 2, 2019.
https://www.studentclearinghouse.org/nscblog/research-center-snapshot-report-showcases-yearly-success-and-progress-rates-for-fall-2012-freshman-class/?hilite='graduation','rates'.

[10] "United States University Graduation & Retention." College Factual. College Factual, April 20, 2020.
https://www.collegefactual.com/colleges/united-states-university/academic-life/graduation-and-retention/.

[11] "Georgia College & State University Graduation & Retention." College Factual, April 20, 2020.
https://www.collegefactual.com/colleges/georgia-college-and-state-university/academic-life/graduation-and-retention/.

[12] "Georgia Institute of Technology - Main Campus Outcomes." College Factual, April 20, 2020.
https://www.collegefactual.com/colleges/georgia-institute-of-technology-main-campus/outcomes/.

high school to Georgia Tech by providing insight into what their first year might entail. We also have the goal of creating a game that administrators could modify each semester to accommodate changes in campus resources. The game will be designed with multiple levels of difficulty so that players are engaged, but not annoyed with the educational objectives of the game. To engage the highly self-motivated Tech student, the game will provide abstract challenges and be fast-paced, incorporating short playtime divided into four chapters. In addition, the developers will create a contemporary facade using Anime design for game characters. According to WebsiteIQ, which tracks internet traffic, the most popular Anime streaming website receives 20 million page views a month.[13] For the educational game, *LateNite*, players will enjoy mastering time and money management priorities, not only in the game, but also during their college education.

[13] "Crunchyroll.com Traffic Estimate, History, Competition," Website Traffic Statistics, WebsiteIQ, Accessed April 2, 2020. https://www.websiteiq.com/domain/crunchyroll.com/.

Minimum Viable Product

Our goal is to create an easy to play game whose features mirror aspects of college. The primary function of the game is to give players perspective on time and money management during college. To accomplish this, players will be given 2 types of scenarios to simulate the use of time and money: constrained multiple choice events where players can make decisions in pop-up situations and open-ended gameplay where players can choose where to spend their in-game time. Of course, the game needs to promote realistic choices from the user without feeling like a traditional questionnaire to keep the game fun. We also want the game to be somewhat customizable so that administrators can fine-tune their students' experiences as each semester changes from the last one. We have chosen ten minimal marketable features that prioritize our main goals for the game to ensure players have an informative and enjoyable experience.

Feature 1 - Main Menu: Most of the features in our game's main menu will follow the traditional design of successful video games, containing buttons to start a new game, change the volume, exit to desktop, or view the credits. As our game is intended to be played through in a short single-sitting, we will not include a save and load functionality. To compromise on that front however, we will be including a chapters button that is password locked. The chapters work similarly to scene selection in movies; they represent different places in the game's sequence, so

a password will be given at the start of each chapter that allows players to skip to that chapter. This method allows users to keep progress over multiple devices and lets administrators play chapters freely so long as they have the passwords. The settings button is also password locked, which seems like a strange choice at face value. However, the only setting players need to edit is the volume, which will be separate from the settings menu. The settings menu itself is intended for administrator use and will be discussed in feature 2. Our stretch goals are to prepare a save functionality in case the length of the game increases at a later point, and additional animations/art to add polish to the game. Our future work is a login system for administrators that provides tighter security then a global password.

Feature 2 - Settings Menu: This menu is intended for administrators with the main function of changing the start and end dates for the semester that students will play through. To mirror the college experience as much as possible, students will experience one semester of in-game time across the four chapters, so we want administrators to be able to set those accurately. There needs to be a button that returns the user to the main menu from this one. A stretch goal we have is to separate the volume setting into music and sound effect settings, in case users want to play their own music over the game's sound effects. Note that the volume slider is not on the settings menu, but it is still a setting that players can change. In future work,

controller support could be implemented so that players who aren't as comfortable with mouse and keyboard can play the game with a controller.

Feature 3 - Map Screen: For the parts of the game where players make open-ended choices, we will give them a map of Georgia Tech's campus so players get a preview for how the campus is structured and have more context for their choices. The map's features will include a 3D representation and clickable locations that players can spend time at. After user testing of the paper and digital prototypes, we've decided to have locations show a pop-up menu when clicked, displaying the time and monetary costs of doing the selected activity[14]. This is to avoid clutter and only display what information the player needs. The player will then be able to confirm the activity, spending their time and money, or cancel which closes the detailed menu and lets the player choose another location. To ensure the player has all the information they need to make a choice, the UI will display the date and time, budget, exhaustion meter, and knowledge meter. The meters and budget are only present after chapter one of the game, so the UI will not display those in chapter one. One stretch goal is to make some activities appear only at certain dates and times to mirror how guest speakers or other events can't be attended whenever you want.

Feature 4 - Calendar Screen: One of this project's main objectives is to teach time management skills. Having a calendar will function both as a tool for players to keep track of

[14] User Test by Matthew Lipscomb, Daniel Keehn, and Sameh Hamadeh, March 9, 2020

their progression and as an example of how they can plan out their days in college. Instead of displaying a single month, the calendar will display a set of days corresponding to the current chapter. As the player progresses, days will be marked with an X to show their progress. Each day will be color coded to show if it will feature a constrained event, open-ended gameplay, or be skipped with no gameplay. The main button on this screen is the "begin day button" which will take the player to either the map or event screen based on the type of day. To mirror real life, some but not all upcoming events will be shown on the calendar, like exams. Players can hover their mouse over these to see more detailed descriptions. Our stretch goal is to have animated cutscenes during break days to promote player immersion, and some future work involves letting administrators fine-tune each day to match their semester schedule.

Feature 5 - Event System: In Feature 3, we discussed the open ended events. The event system is for more constrained choices, like choosing whether or not to attend a party, or deciding between cooked food and takeout. The events themselves will function as pop-ups that include a written prompt and a list of clickable options. The monetary cost of each option will be shown, and when the player chooses one they will be returned to the calendar screen. The underlying algorithm takes the choices a player makes as data to determine their predicted expenses in the categories of education, entertainment, food, housing, and transportation. This system was loosely inspired by the Yee player model of motivation, which is not the same as the

category costs, but we felt that the separation into categories would be helpful for players just the same.[15] To ensure sufficient internal consistency of that data, we will have 25-50 distinct events, which provides at least 5 items per cost-category. The order of events will be shuffled each chapter so the game is not too repetitive. Stretch goals for events are to include pictures and voice acting to be more aesthetic, and to display additional text for each possible choice when the player makes a decision that explains the significance of that choice. Future work would be to let administrators create custom events to put in the game.

Feature 6 - End of Chapter Screen: The game needs to inform players about time and money management to accomplish its purpose, and this will primarily be done with a screen shown at the end of each chapter that is tuned based on the player's choices during that chapter. The most visually emphasized pieces of information are the total simulated expenses and class grade that display the player's score in money and time management respectively. The five category costs will also be shown in a radar chart, and players will be able to edit the category costs to see what impact a lifestyle change will have on their overall expenses. The last pieces of information on this screen will be various facts and statistics about time and money management to help the player with categories they struggled in. To leave this screen, players can use the "next chapter" button or a "return to menu" button. The layout of the screen will be colorful and

[15]Nick Yee, "Motivations for Play in Online Games," *CyberPsychology & Behavior* 9, no. 6 (2006): pp. 772-775, https://doi.org/10.1089/cpb.2006.9.772, 773.

have different sizes for each piece of information so that the more important ones jump out to the player. Our stretch goals are to provide artwork for this screen and give more detailed descriptions of information when the player hovers their mouse over it.

Feature 7 - Chapters: Discussed briefly earlier, the chapters of the game act as repeated playthroughs of variable difficulty. The first chapter of the game will have no budget or grade requirement, so players are encouraged to make whatever choices they would in reality. After chapter 1, the game will take players to either chapter 2 or chapter 3 based on their relative scores at time and money management. Players who struggle more on money management will play chapter 2, which has a budget players must stay under. Players who need more help with time management will play chapter 3, which puts emphasis on a set of exams that will be taken at the end of the chapter. The grades players get will depend on how much time they allocate for studying. After completing one of chapter 2 or 3, players will play chapter 4, the most difficult challenge that features a budget, exams, and an exhaustion meter which will show if players are overexerting themselves with work. Stretch goals include setting custom events for each chapter, and allowing players to play both chapters 2 and 3 if they wish to. More chapters could be added in the future as well.

Feature 8 - Tutorial: Most games need some way to guide players through the controls and objectives; a tutorial is one of the most common methods of doing so. To feel friendlier than

plain text, a non-playable character will give the tutorial through dialogue during the first chapter. We will have the tutorial character speak the first time the player uses the calendar screen, map screen, events, and end of chapter screen. The tutorial can be disabled in the settings menu with a password, so first time players have to use the tutorial. Stretch goals include a survey accompanying the tutorial that gets the players' socioeconomic status among other questions like if they are attending college in-state/out-of-state. That would let the AI factor in socioeconomic status and other information into the end of chapter reports. Future work for the tutorial would be to use an animated character instead of a static character showing text dialogue.

Feature 9 - Help and Documentation: We will provide documentation for both players in game and for administrators wondering how to use this tool. There will be a glossary that can be accessed from the main menu or pause menu which defines various terms used in the game and lets the players view the tutorial once more if they need to. They can also access an icon in the top right of each screen that shows the main functions of that screen when clicked. For administrators, installation instructions and a description of the product will be provided in a separate readme file. Stretch goals would be to include frequently asked questions in the documentation, and as future work a website could be created to replace the readme file. We hope that by adding these explanatory features that user confusion will be kept to a minimum.

Feature 10 - Pause Menu: While there aren't any moving parts in the game that require pausing, a pause menu is still helpful for including options that would clutter the main game screens.[16] A button in the bottom left corner of any screen will access the pause menu that includes a return to game button, an exit to main menu button, a glossary button, and the volume slider. A stretch goal is to display helpful gameplay tips while the game is paused.

Table 1 - MVP Map

	Main Menus, Sprint 1		Start of Game Process, Sprint 2	Player Interactions, Sprint 3	
In Scope	**Main Menu**	**Settings Menu**	**Tutorial**	**Calendar Screen**	**Map Screen**
	New Game Button	Return to Main Menu	character with dialog explains game mechanics	Monthly View	Map Artwork
	Chapters Button - password locked	View and bind controls	Explain calendar	color code: free days, single-choice days, or breaks	Location selection costs showing
	Volume Slider	Enable/Disable Tutorial	Explain events	implement clickable buttons & popups	Confirming location
	View Credits	Set start and End Dates	Explain choices	view details of upcoming events on mouse over	Cancel location
	Open settings		Explain budget	mark days with an "x" as they are completed	View date and time
	Settings Button - password locked		Explain grades		View budget
			Disable tutorial (settings menu)		View stress, kownledge, and diet
Stretch Goals	Continue Game Button	Distinct Music and sfx Settings	Survey with tutorial to have a more custom playthrough	cutscenes during break weeks	Some locations appear ocassionally
	Title screen Artwork				
Future Work	Login System for administrators	Controller and Keyboard movement options	Animations, voice over, or video	adniminstrators can edit when events occur in the calendar	Different colleges can have different locations

[16] Jakob Nielson, "10 Heuristics for User Interface Design: Article by Jakob Nielsen," Nielsen Norman Group, April 24, 1994, https://www.nngroup.com/articles/ten-usability-heuristics/.

Time and Money Management, Sprint 4		In Game Menus, Sprint 5		
Event System	**End of Chapter Screen**	**Chapters**	**Help and Documentation**	**Pause Menu**
pop-up appears with a prompt and discrete options	Display calculated monthly expenses and category costs based on the student's choices during that	4 Chapters	A manual separate from the game explains installation and running instructions, as well as	A button to pause the game from any screen
return to calendar screen when option is selected	Display the student's grade on their exams based on their level of studying	Chapter 1 features no budget or exams so students can make choices without seeing their immediate impact	A glossary can be accessed through the main menu or pause menu that explains various terms and mechanics	Return to game button
costs of each option are displayed	Next chapter button	Chapter 2 has a budget but no exams and is played if the student makes poor monetary choices in chapter 1	The glossary features a search bar	Settings button - password locked
25-50 distinct events	Display facts about time and money management relevant to the student.	Chapter 3 has exams but no budget and is played if the student makes poor studying choices in chapter 1	In each of the screens there is a question mark up at the top right which when clicked provides a	Exit to main menu button
event order shuffled each game	Return to menu button	Chapter 4 has a budget and exams and is played after chapter 2 or 3	gray semi transparent overlay that indicates the pause of the game and includes text pointing to certain areas to explain their	Glossary button
choices carry weights for 5 cagetgories of cost" education, entertainment, food, housing, or transportation	Category costs can be modified manually so students can see how lifestyle changes will affect their expenses	The chapters menu lets a player choose any of the 4 chapters to play after completing the chapter once or using a password	functionality	The game freezes while it is paused
	Display facts about time and money management relevant to the student.	Return to main menu button on chapters menu		Volume slider
event dialogue is voice acted	Artwork	After completing chapter 2 or 3, students can choose to play the other one too	Frequently asked questions are included in the documentation	Helpful tips are displayed when the game is paused
pictures for events	Details of each part of the screen shown on mouse hover	Based on the chapter, one or more of the stress, money, and studying meters are disabled		
after making a choice, the likely outome of that choice is explained to the player				
administrators can create custom events	Use real statistics from the college the game is being played for to see averages for student expenses	Unique events for each chapter	A documentation website can be used as an alternative	

Ethical Considerations

The creation of any digital tool inherently bears several ethical considerations. Designs should be accessible and considerate to different groups of people while keeping the main functionality in mind. Team 0111 has identified four main ethical considerations for this project: being unbiased, avoiding player manipulation, having strong morals, and promoting diversity.

The first playthrough of *LateNite* is at its core a gamified questionnaire, as players make discrete choices that are scored into a report on their predicted expenses. While players' results won't be used for research or data collection, it is nonetheless essential to avoid bias when constructing the items of the game. There are many ways to introduce bias to a questionnaire, and we have identified a few pitfalls that we will be taking special care to avoid. There should be no double-barreled questions, which are items that ask two different things but permit only one answer. This constraint ensures that any choices the player makes involves only a single consequence, which eliminates any ambiguity. For example, if there was an option in the game to "eat food and study," players may have different habits for if they eat while studying or take those activities separately, inducing bias due to the binary nature of the choice. Secondly, text should not use any jargon or words that might be unfamiliar to a typical high school senior. As college students writing the items, we must dial back our vocabulary to make sure lack of knowledge does not bias any responses. The last and most dangerous pitfall we will be avoiding is the leading question, one that alludes that a specific response is better than the others. It is crucial that we do not deter players from their chosen college lifestyle just because it is different from ours. Our goal is to educate players about the average costs and typical amount of studying for success in college, but we acknowledge that each individual will have different needs. If our

items imply that more expensive options are bad, then we are implicitly judging players who would choose those options when in reality the vast differences in socioeconomic status among players demands that our questionnaire accept vast differences in the amount of money that can be spent without judging anyone for it.[17]

Going off of leading questions, the idea of gamification has been criticized for being manipulative, motivating people to work harder for less tangible rewards. This criticism is targeted foremost at the use of gamification on employees or in a classroom, settings where people are pressured to succeed, but the points made are still relevant to this project. Gamifying by nature removes some realism from whatever is being simulated, but our goal is for players to make realistic choices. To ensure this, we must take care to explain in some form of tutorial that the primary motivation should not be to outsmart the game, but to learn tools from the scenarios it provides. This is the principle of disclosure that ensures the players know what the gamified system is being used for. Another product of gamification to watch out for is distraction. Real games feature immersive environments that a player can easily get lost in, and while gamified simulations are much toned down from that, it is important that any nonessential polish does not get in the way of players gaining perspective on time and money management.[18]

Beyond the issue of manipulation in gamification is a concern that is less concrete; the act of making a serious process more fun or adding a rewards system raises a moral question about the process. Video games have been commonly accused of sparking moral indifferences towards violence or other serious matters, and while *LateNite* will not feature such extreme

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[17] Bernard C K Choi and Anita W P Pak. "A catalog of biases in questionnaires." *Preventing chronic disease*, vol. 2,1 (2005), A13. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1323316/

[18] Tae Wan Kim and Kevin Werbach, "More than Just a Game: Ethical Issues in Gamification," *Ethics and Information Technology* 18, no. 2 (December 2016): pp. 157-173, https://doi.org/10.1007/s10676-016-9401-5, p.16-23)

action, there is a more subtle indifference issue that needs to be addressed. Specifically, because the goal of this game is to teach good time and money management practices by rewarding the player with simulated scores or ratings, players might be motivated to minimize spending for the sake of winning and points. When they reach college they might obsess over underspending and studying as a result. Although it is challenging to guard against misinterpretation of the game's learning objective, we will be using an exhaustion meter as a way to deter players from focusing only on optimizing their costs and grades and instead promote a healthy lifestyle.[19]

We will conclude this discussion with one of the most common and important ethical considerations in any fictional product, diversity. *LateNite* is based on a college campus and as such should reflect the high level of diversity including racial, gender, and socioeconomic. Video games as a whole do not have the best track record on this front, with triple-A games tending to portray hero characters as white and victims as black. There is also a prominent male bias in video games where males overall outnumber females by more than 3 to 1.[20] As our team is aware of these tendencies, we will take care not to blindly use existing games as templates for our project, and instead consider the demographics of Georgia Tech's campus. The art style chosen for this project is also one that has a history of lacking diversity. Anime is known for featuring a greatly disproportionate number of white and asian characters compared to those of other races, and often exhibits stereotypic patterns when it does include them such as having defining character traits mirror real life stereotypes of their ethnicity.[21] Our team is fully capable of

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[19] Tae Wan Kim and Kevin Werbach, "More than Just a Game: Ethical Issues in Gamification," *Ethics and Information Technology* 18, no. 2 (December 2016): pp. 157-173, https://doi.org/10.1007/s10676-016-9401-5 p.28-32)

[20] Christina R Glaubke, Patti Miller, McCrae A. Parker, and Eileen Espejo. "Fair Play? Violence, Gender and Race in Video Games." (2001). https://files.eric.ed.gov/fulltext/ED463092.pdf p. 13-15

[21] Anne Lei. *Constructing Race In Anime.* : Oregon State University. https://ir.library.oregonstate.edu/concern/honors_college_theses/fq978104g, p. 7-9

separating the pure art style of Anime from the common tendencies of the medium, and will present a diverse cast for *LateNite* in a style that is highly popular among traditional college-aged people.

We chose to focus on these ethical considerations because we can successfully implement them within the scope of this project. Ensuring proper survey design and diversity is more concrete than the gamification issues, but we believe the measures we are taking for those will be a solid step. We acknowledge that there are other ethical guidelines to consider while developing this project, some that we will be able to implement and some that will have to be saved for future work. Team 0111 is ready to assess those on a case by case basis to ensure *LateNite* is mindful to all prospective first-years playing it.

Prototype

Paper Prototype

Our game seeks to encourage first years to be aware of time and money management, and also be a fun and interactive story. Because a college-life simulation game given by staff may seem daunting to first year students, our goal was to design the game to be as approachable as possible by giving students the ability to make choices while displaying that certain choices can have positive or negative outcomes. Our first game prototype was a paper prototype with five main screens: the main/title screen, a settings screen, a monthly calendar screen, a campus map screen, and a budget results screen.

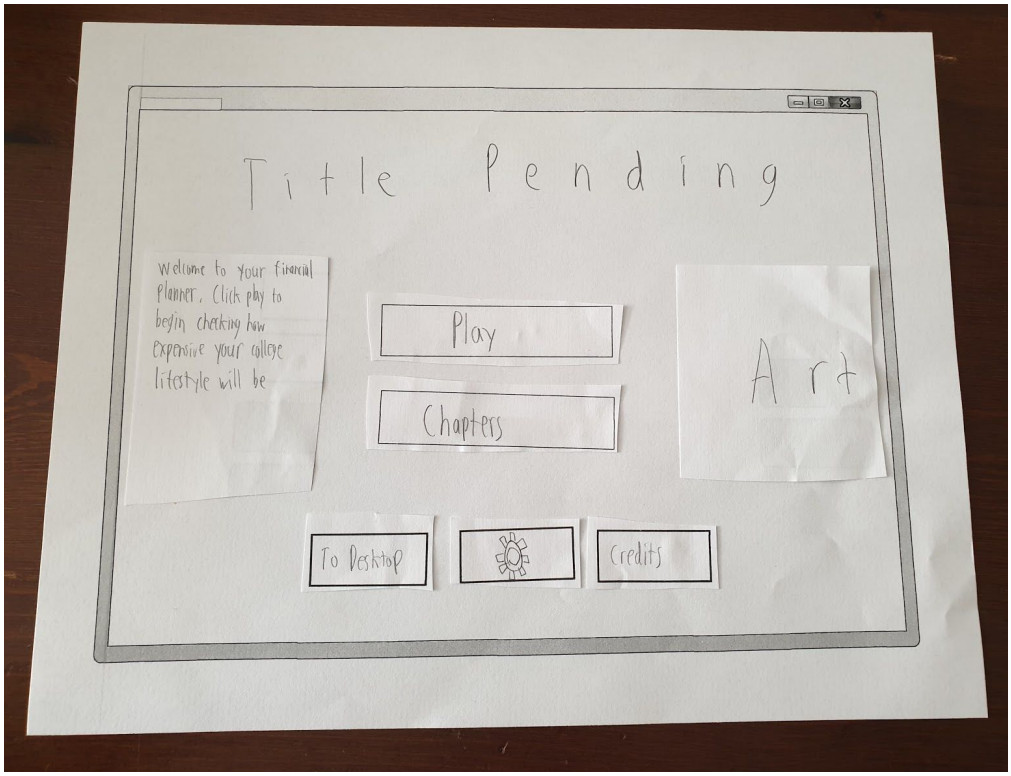
Design decisions were made for the initial prototype to meet the needs of new Georgia Tech students such as including a scheduling calendar, a campus map, and budget results screen. A calendar was included to reflect real life use of calendar or similar scheduling applications that many students use to organize events and assignments throughout the months.[22] By having the calendar, players can track passing time within the game and easily see and prepare for any upcoming in-game events. A map screen was also added to the prototype to encourage immersion in university campus life. This map also allows players to feel like they are traveling across campus to complete activities and not simply clicking daily activities off of a list. Lastly, a dedicated budget results screen was created to organize the final totals of gameplay for the chapter completed. A screen with organized budget analyses and explanations of how the player performed may help players understand their spending habits, their potential budgets, and how they can improve their budgeting, if applicable. A radar chart was also added to help players

[22] Hanski, Mike. "20 Expert Tips on Time Management for College Students." On College Life and Writing | Bid4papers Blog, February 18, 2020. https://bid4papers.com/blog/time-management-for-college-students/.

quickly visualize on which categories they spent the most money, which is directly related to their performance evaluation on this screen.

The design philosophy for the initial prototype was to cover the main gameplay elements and provide plenty of information to the player without worrying about aesthetics. The paper prototype mainly focused on in-game functions rather than the story-driven aspect of the game. For this phase of the project, testing the core gameplay to ensure that the game was intuitive, was of more importance than fleshing out the story of the game. Beyond specific issues found for each screen of the prototype, some of the prototype's overall shortcomings included the lack of tutorial, the lack of a final goal for the player, and the lack of stylistic consistency, all of which were addressed in the second iteration of the prototype.

Figure 1 - Paper Prototype Title Screen

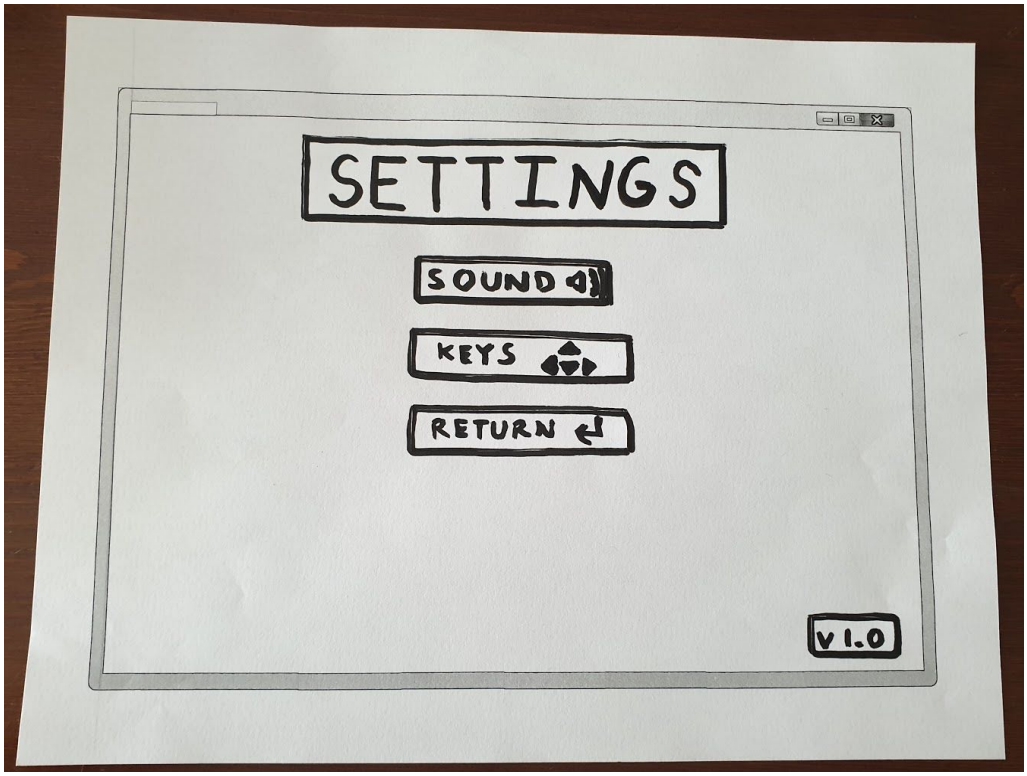


The prototype title screen was made to be simplistic to not overwhelm the player, as this is the first screen. Text on the side is used to help guide players who are unfamiliar with the game, and there are "Play" and "Chapters" buttons, which allow the player to begin the game at the tutorial or go to the chapter selection page, respectively. There are also sub buttons underneath that allow players to exit the application ("To Desktop"), alter settings ("Settings"), and see the credits of the game ("Credits").

During the heuristic evaluation, one of the main problems with the title screen was the lack of a corresponding chapter selection screen; the chapters button did not lead to any existing page. This page was later added to the second prototype. Some wording on the screen was confusing, so it was necessary to rewrite some text on the screen to make it clearer.[23]

[23] User Test by Matthew Lipscomb, Daniel Keehn, and Sameh Hamadeh, February 29, 202

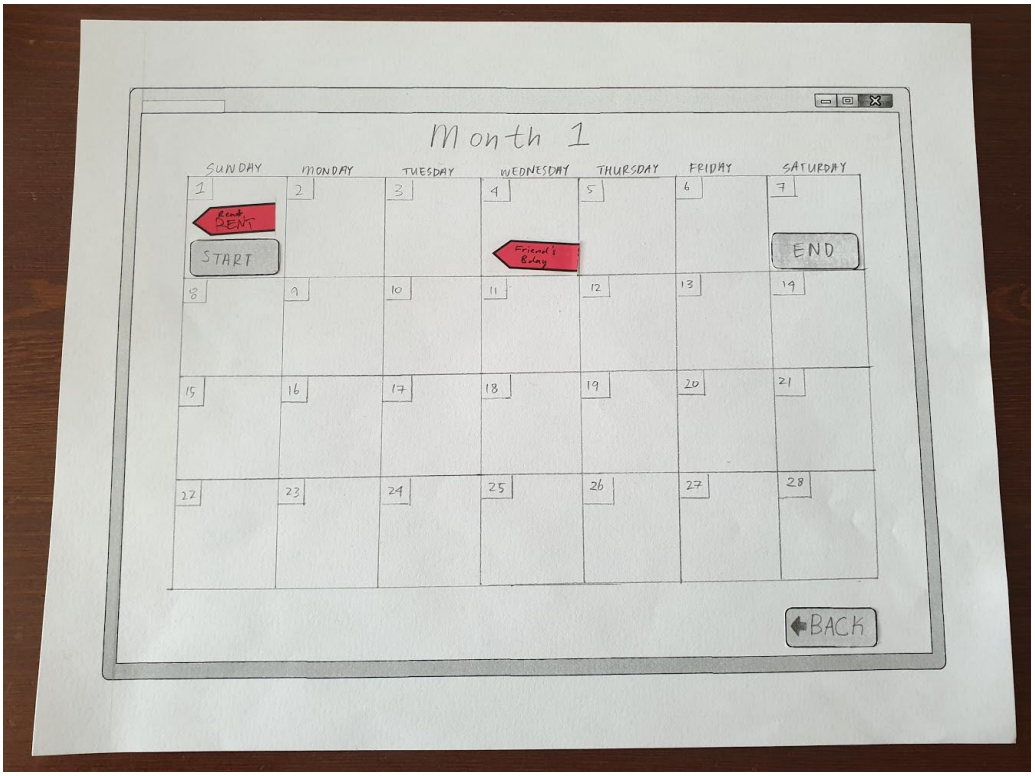
Figure 2 - Paper Prototype Settings Screen



The settings screen of the game is simple, having only the title of the page and three main buttons that allow the player to alter some settings within the game. There are again simple buttons that allow the player to change the volume ("SOUND"), alter hotkey settings ("KEYS"), and return to the title screen ("RETURN").

Major problems that arose during user testing were that the setting screen was only accessible from the title screen and not during gameplay and that the KEYS button was not necessary for our game as it was primarily designed to utilize the mouse for navigation. The settings screen was reworked in the next prototype to address these problems, and a sound slider was added to the page to more easily control the volume of the game.

Figure 3 - Paper Prototype Calendar Screen

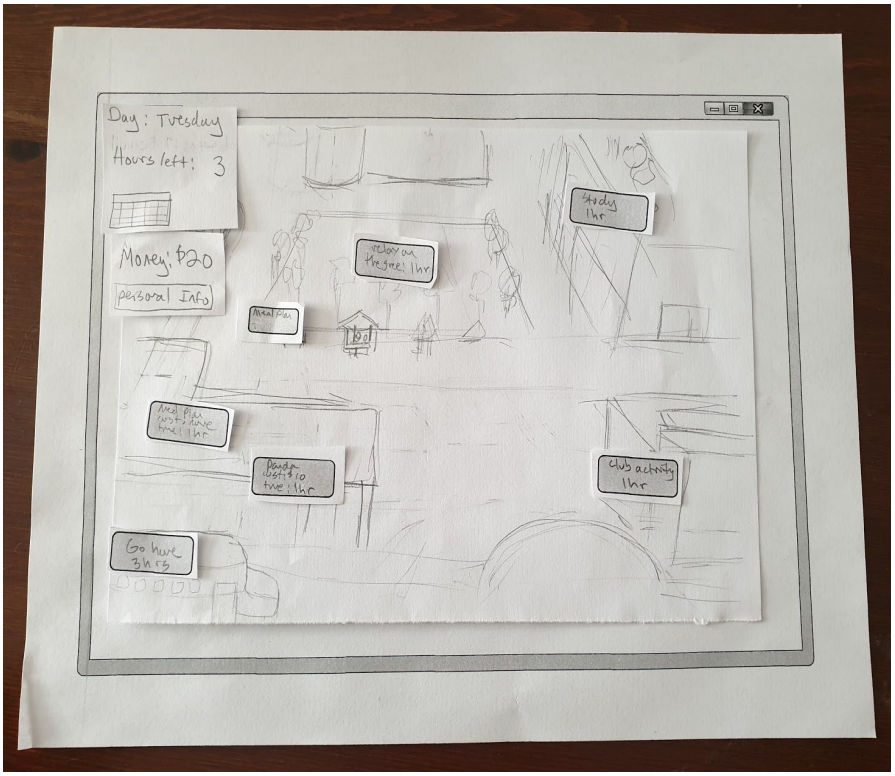


The calendar screen shows the current month taking place in the game and any major events that are set to take place during that month. Each calendar month was split into four weeks for a total of 28 days to keep calculations for each month consistent, and important calendar events are marked red to show their importance. They are shaped like tabs to signify that they can be clicked, which will open up a small pop-up box that displays some details of the event. The calendar also shows the current week by marking the "START" and "END" days of the game-week. The "BACK" button allows the player to return to the previous screen.

Some minor problems found during testing were the lack of events compared to a realistic schedule and a lack of event descriptions. Testers found it difficult to gauge what the events entailed simply by looking at the title of the event and the event descriptions from the tabs

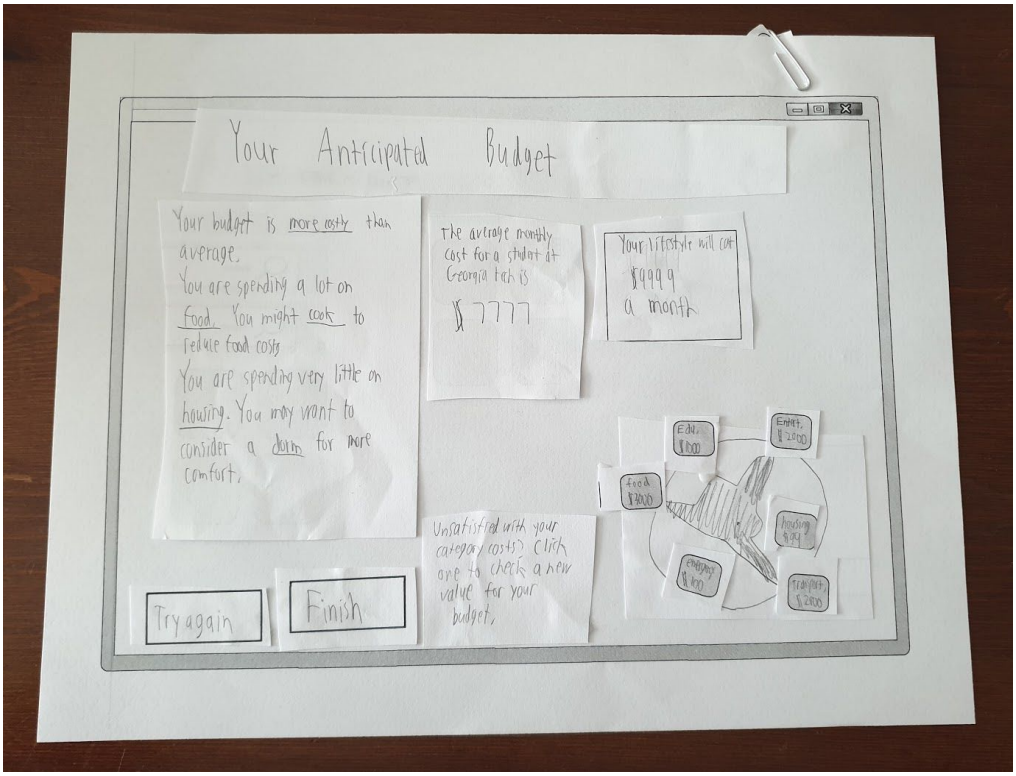
were too vague. In the next prototype, detailed event descriptions were added.

Figure 4 - Paper Prototype Map Screen



The map screen is where players will spend the most amount of time playing the game. The screen shows a picture of the Georgia Tech campus. To avoid distracting the player, the menu UI is located in the top left of the screen, showing the current day, the hours left for activities, a button to check the calendar, the cumulative amount of money spent in the month, and a button to open a new personal information page where the player can see how they are currently performing in the game. Important buildings and fields are marked with common activities that take place in them, along with an associated time taken to complete the activity. Players will choose the activities they want to do for the day using the allotted "hours left," as shown in the top left of the screen.

Figure 5 - Paper Prototype Results Screen



The results screen shows how the player performed in the game along with a radar chart analysis of how money was spent. The radar chart has six different categories, each representing important spending habits that an average university student might be spending money on: Education, Entertainment, Housing, Transportation, Emergency, and Food. A button to alter different category costs for what-if scenarios is also next to the radar chart so that the player can test out different spending decisions. The screen displays the current spending for the month, how that spending compares to the average student's monthly spending, and advice on how to balance out spending on different categories to maintain a healthy budget. A button to "Try Again" is available to run the simulation again, and a "Finish" button allows players to finish the

game if they were satisfied with their play session.

The main problem with this prototype's results screen is that the information is cluttered, which makes it difficult for the player to read and accurately process all of the information on the page. The information presented was also not very consistent or research-based for this iteration of the prototype. To address these issues, the results screen was reworked for the digital prototype to condense, rearrange, and rework the information that would be presented on this screen.

Digital Prototype

Compared to the paper prototype that was focused on mainly gameplay elements, the digital prototype was designed to be more visually appealing to incoming university students. As the prototype required many repeating variations of screens, especially the tutorial section, we decided to utilize PowerPoint, which would allow for an easily navigable experience while also being interactive by placing buttons that led to different slides on the powerpoint. Our digital prototype confirmed to us that a visually appealing character presenting the tutorial increases the likelihood of player engagement and interest.

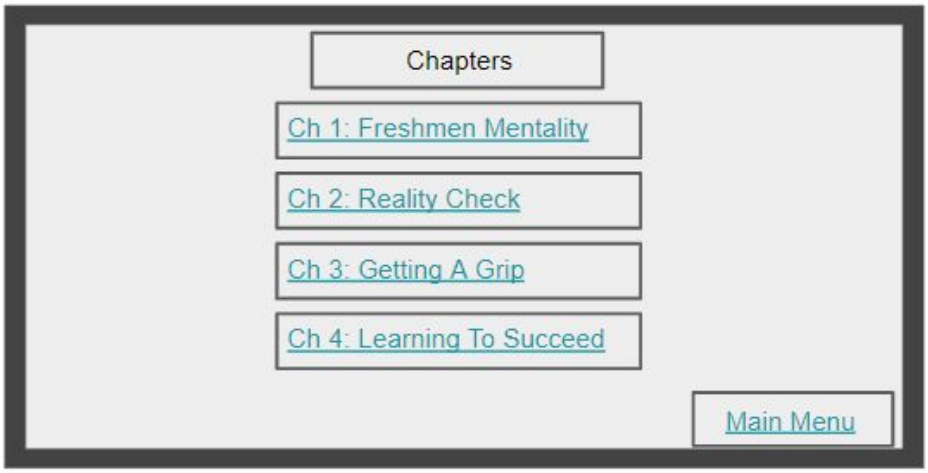
An important feature added to this digital prototype was a tutorial at the beginning of the game. In the case that players are unfamiliar with playing video games, they may find it difficult to navigate through the menus and to know which buttons to click for which functions. The tutorial aims to help players get started with the game so that they are not overwhelmed by all of the elements of the game at first glance. Another feature added to the digital prototype was the addition of a chapter selection screen, which would allow players to quickly navigate from one chapter to another. Since the chapters each focus on a different aspect of the game (focusing on

spending habits, spending within a budget, etc.), giving players the ability to move between chapters allows them to play the game with a focus on the topic they want instead of sitting through the entire game and finding themselves stretched for time.

Figure 6 - Digital Prototype Title Screen

The title screen for the digital prototype has been simplified even further to avoid confusing the player on the first screen. The "Play" button has been changed to "New Game," since the game does not feature a saving function and a new game must be started for every playthrough. The “Chapters” button remains the same as before, and the sound button has been moved out of the settings screen and onto the title screen for easy access so that players can adjust sound settings before beginning the game. A major issue found during heuristic testing was the lack of an "Exit Game" button that would allow the player to end the game and return to the desktop.

Figure 7 - Digital Prototype Chapter Selection Screen

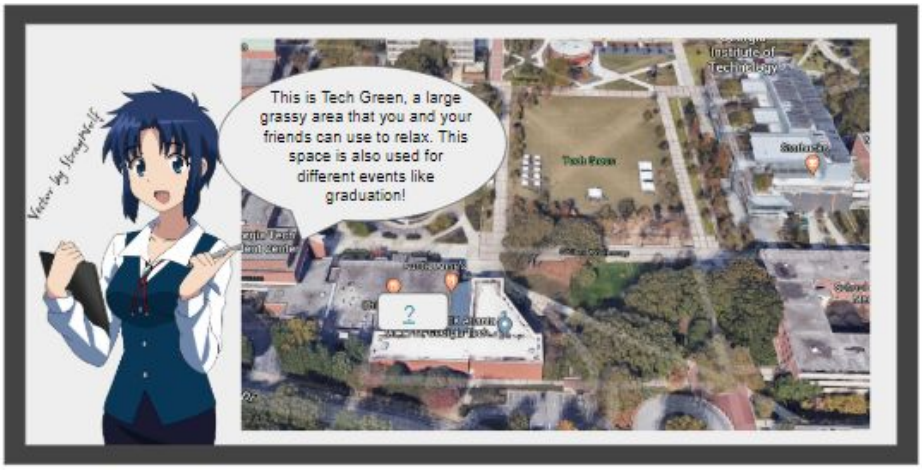


A chapter selection screen was added to allow players to instantly jump through the game by accessing the different chapters. Chapters are listed in order with their titles to give the player a general idea of what topics each chapter focuses. There is also a Main Menu button to return to the title screen. Testing showed that a lack of explanation of the page confused players as to what the different chapter buttons would do. General confusion on the chapter selection screen led us to prevent students from playing chapters out of order, but keeping this function for administrators who would be more familiar with the game and students who have played the game before. The game features four “chapters”: Chapter 1 offers a blind playthrough where players receive immediate feedback, Chapter 2 teaches managing personal expenses, Chapter 3 focuses on time management, Chapter 4 challenges players workload and budget.

Figure 8 - Digital Prototype Chapter Title Screen

A brief chapter title screen has been added before the beginning of each chapter of the game. This page is used as a landing page for when players access the chapter through the chapter selection screen or when players reach the chapter while playing through the game.

Figure 9 - Digital Prototype Tutorial Screen



The Tutorial screen appears at the beginning of each New Game playthrough and uses a virtual assistant to go through the main functions of the game and how to play. The tutorial

functions as an interactive slideshow going through all different aspects of the main story of the game. The virtual assistant instructs the player on which buttons to click for certain functions and also provides information on the expected flow of the gameplay. An issue brought up was the inability to skip the tutorial for returning players, who may be playing the game again to test how different choices made during the game would change their spending evaluation[24].

Figure 10 - Digital Prototype Calendar Screen

The calendar screen remains largely unchanged from the paper prototype iteration. However, different interactable upcoming events with more detailed descriptions were added as well as an overall more appealing design change for the entire screen.

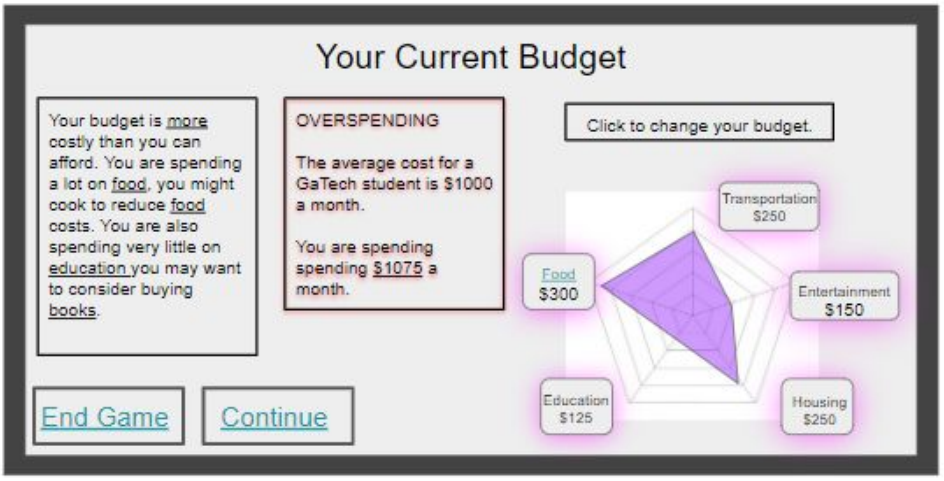
[24] User Test by Matthew Lipscomb, Daniel Keehn, and Sameh Hamadeh, March 9, 2020

Figure 11 - Digital Prototype Map Screen

The map screen also remains largely unchanged, but a photo of the campus has been used as the background of the map screen to accurately represent the buildings and layout of the Georgia Tech campus. The menu on the left has also been simplified to avoid confusion, giving only essential information needed for this screen and access to the calendar, the button for which has been changed from a symbol to words. While the page looked more appealing and the UI was simplified, testers found that the lack of a help screen made playing the game difficult if players forgot certain functions of the game and wished to review a help page or redo the tutorial. The lack of details on the various activities also made it difficult for players to decide in which activities to participate, as the advantages were not clear.[25]

[25] User Test by Matthew Lipscomb, Daniel Keehn, and Sameh Hamadeh, March 9, 2020

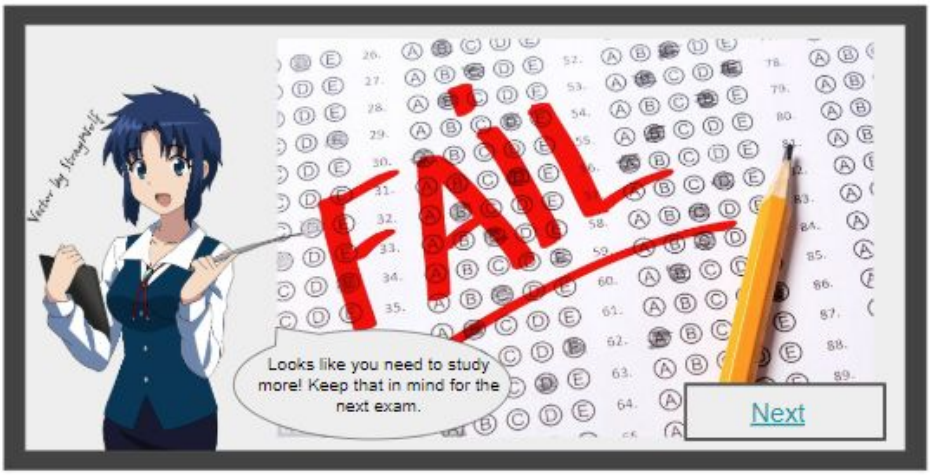
Figure 12 - Digital Prototype Budget Results Screen



The results screen has several minor changes, one being more visually appealing colorful UI elements. A label for the player's current monthly spending has been added to indicate whether the player is spending more or less than the average Georgia Tech student. The radar chart has become slightly larger, as it is one of the more important features of this screen. The button to change the monthly budget is now placed above the radar chart to reduce clutter at the bottom, where the two main buttons are located. The "Try Again" button, which was difficult to understand, was changed to the "End Game" button to return the player to the title screen, and the "Finish" button has been changed to the "Continue" button to allow the player to continue playing through to the following chapter/month. Although this screen is a large improvement from the first prototype's screen, users found it difficult to change the budget and would have preferred alternate ways to change values such as sliders or extra buttons.[26]

[26] User Test by Matthew Lipscomb, Daniel Keehn, and Sameh Hamadeh, March 9, 2020

Figure 13 - Digital Prototype Academic Results Screen



The academic results screen is a quick screen that displays the results of important calendar events, specially marked on the calendar. Depending on how much studying was done prior to the exam, the player may or may not pass exams that come up during the school semester.

Wireframe

Figure 1 - Student Playthrough

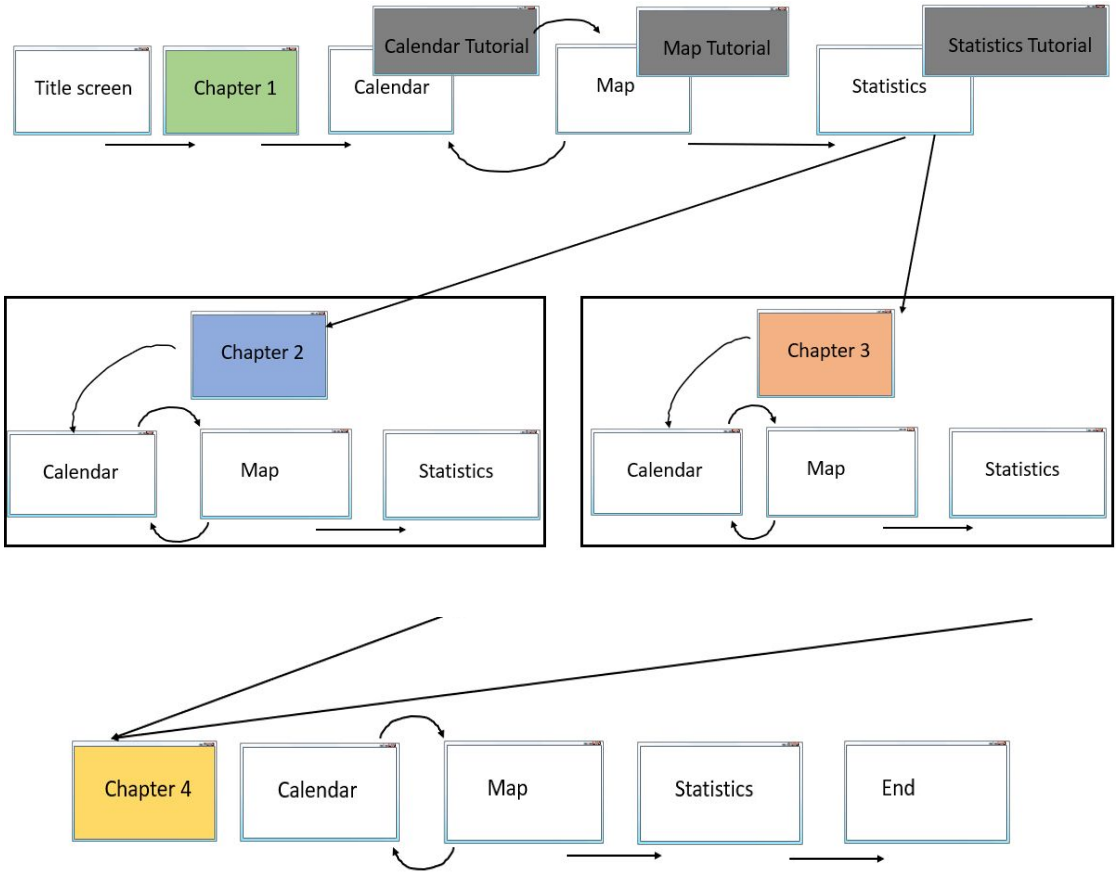


Figure 2 - Instructor Playthrough

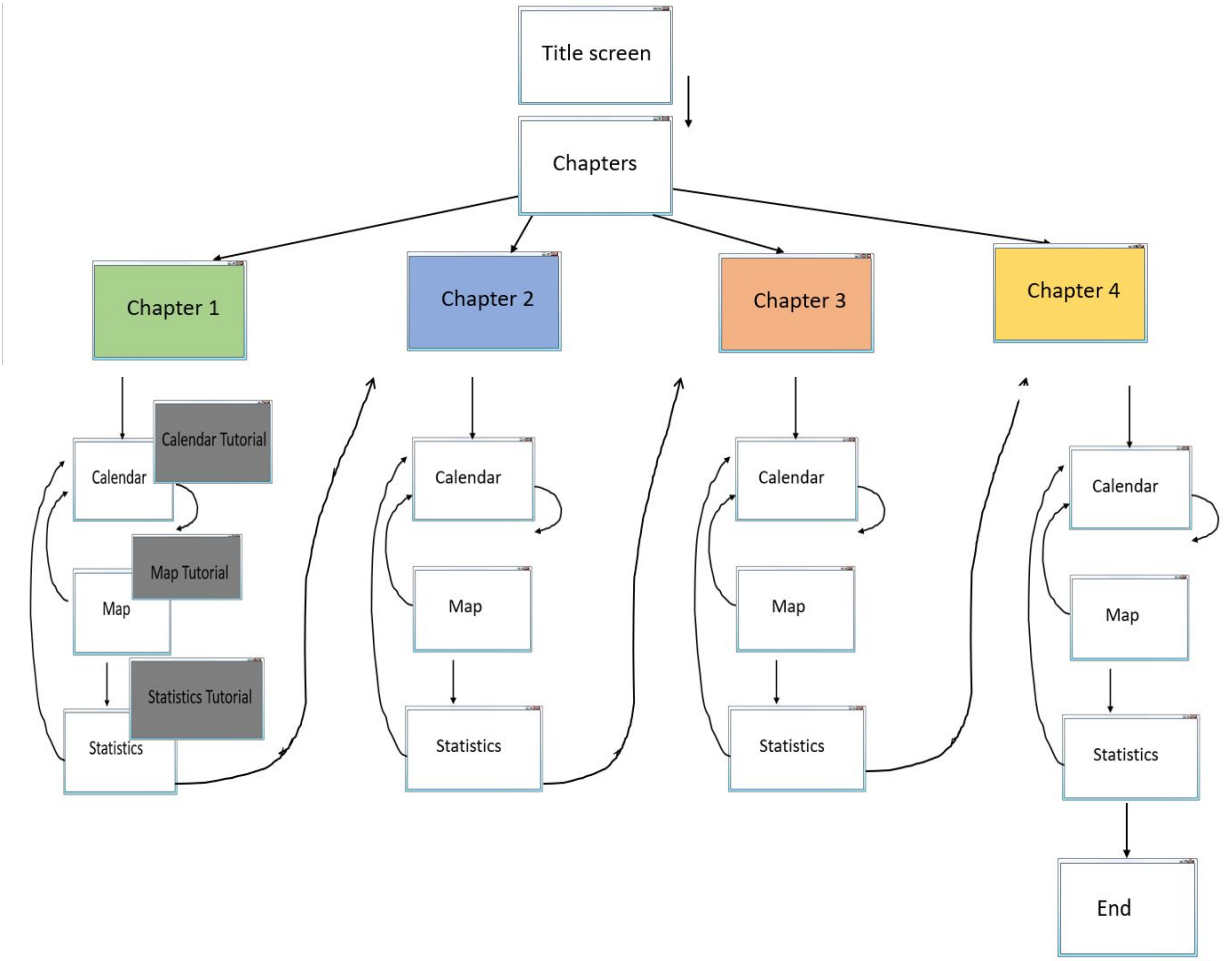
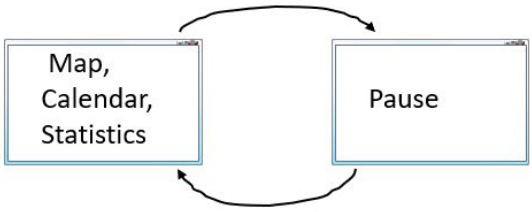


Figure 3 - Pause Menu Function



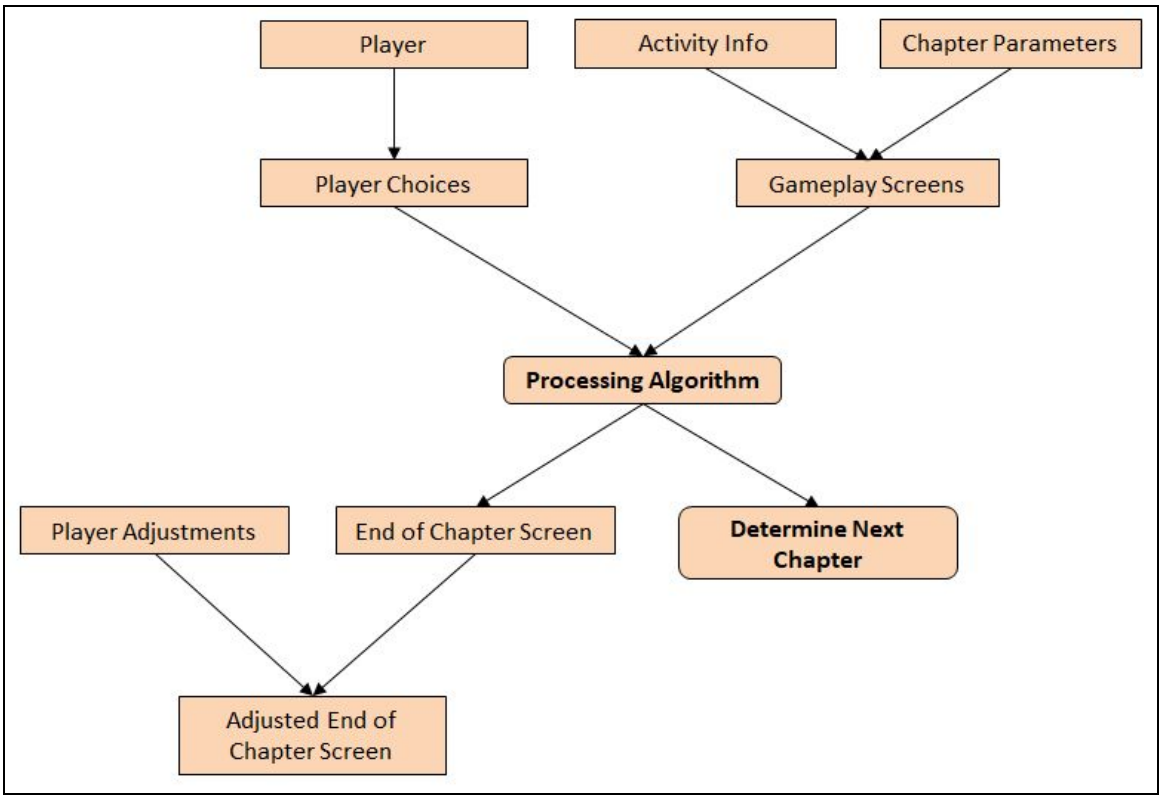
Data Flow

The choices the player makes, both constrained and open-ended, become inputs that measure the player's academic and monetary habits. Twenty-five to fifty choices will be made per chapter to establish a sample of high reliability using Cronbach's Alpha. The results of the player's choices will determine which chapter the player progresses and these results are presented for the player's education in the "End of Chapter" Screen. This data flow cycle is repeated for each chapter, under the different conditions that characterize each of them. The repeated exposure to financial feedback is designed to help the player actively think about their financial decisions and improve their financial literacy.[27]

As shown in Figure 4, there is one primary path which data will follow. Data regarding the various choices that players can make ("Activity Info") and the functionality of each particular chapter ("Chapter Parameters") is funneled into the interactable gameplay. Player choices are stored and aggregated during the course of each chapter. At the end of a chapter, the processing algorithm will determine the player's likely cost distribution for a particular unit of time – e.g., expected costs for a semester – and display this information to the player ("End of Chapter Screen"). After this, the player can make adjustments to their activities and see the impact on costs ("Adjusted End of Chapter Screen"). The processing algorithm also sends information to the Cronbach's Alpha algorithm that determines which chapter the player will proceed to next ("Determine Next Chapter"). Each chapter flows in much the same way.

[27] Paul Gerrans and Richard A. Heaney, "The Role of Undergraduate Personal Finance Education in Financial Literacy, Financial Attitudes and Financial Behaviours," *SSRN Electronic Journal*, December 2014. https://doi.org/10.2139/ssrn.2537344.

Figure 4 - Data Flow for a Single Chapter



Technology

We intend to utilize Unreal Engine, which is a game engine developed by Epic Games. Unreal Engine has been successfully used in a variety of genres including our own RPG style point and click game (some examples being Octopath Traveler and ASYLUM), we chose Unreal Engine to create a desktop version of the game, with a stretch goal of also creating a browser version. Unreal Engine is an industry leader in game development.[28] In order to use Unreal Engine, we will all learn how to effectively code in C++ during Summer 2020. Unreal Engine also offers plenty of advantages over other game engines such as being a free, open-source resource. Being open source signifies that documentation for Unreal is readily available to our team and we can use libraries to customize different aspects of our project much more easily than if it was not open-source. In addition, prototyping and tweaking basic game functionality in Unreal is streamlined by using node-based programming, allowing our team to focus more on game design rather than programming algorithms that already exist. Unreal Engine overall is a trusted and widely used tool for creating all kinds of games, making it the clear choice for the *LateNite* game project. Since all player data is local to the player's downloaded game, protection of game data including framework, models, and the choices algorithm will be protected by Unreal Engine's data encryption software.[29]

We will be using Photoshop and Blender for the visual aspects of the game. We will use Photoshop for digitally designing the characters and some props in the game. Another option for character design was Krita, an open source animation software. Photoshop, however, is more

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[28] "5 Years of Unity vs. Unreal: Who Is Leading the War of Giants: Program-Ace." Program-Ace, August 9, 2019. https://program-ace.com/blog/5-years-of-unity-vs-unreal/

[29] "Packaging Projects," Unreal Engine Documentation, accessed April 26, 2020, https://docs.unrealengine.com/en-US/Engine/Basics/Projects/Packaging/index.html)

beneficial for our purposes because one of our group members already owns and has prior experience with it, and the learning curve for Photoshop is not too high, which will enable other group members to assist more easily. Blender, a free and open-source 3D computer graphics software toolset, will be used for the games UI and map because constructing hard-surface models such as buildings is more efficient than drawing by hand. Another option for 3D graphic design is 3D Studio Max. We chose to use Blender because while 3D Studio Max is an extremely versatile software, Blender is a free-to-use software and has all the capabilities we need and more to achieve all of our 3D design needs.

Fall Plan

The objective of the fall plan is to execute a communication strategy and management plan to achieve completion and delivery of the MVP by December 2020.

Communication Strategy

The Team 0111 team members have been and will plan to communicate with each other through the free VoIP application Discord, which specializes in text, image, video and audio communication between users on a chat channel. If this method of communication fails to work, we will default to SMS and phone calls throughout the remainder of this project

Team 0111 will communicate with our primary client Mr. Stallworth by face-to-face contact as possible, scheduled by requesting a meeting via email. If this method of contact does not work we will email one of the other contacts recommended by Mr. Stallworth being the following: Troy Peace, Jennifer Whitlow, and Alyshia Jackson. Josh George will email our client as a representative of Team 0111. Team 0111 will be responsible for initiating communications for scheduling meetings, providing updates on sprints, and notifying the client of difficulties during the implementation. Our client will initiate communication if he/she has requests or concerns regarding the project implementation.

Management Plan

The preparation for this project shall occur over the summer. Each team member will learn the C++ language and familiarize themselves with relevant aspects of Unreal Engine. The

team will familiarize themselves with C++ during the summer through YouTube tutorials and Discord interactions as we work on independent Unreal projects. C++ shares attributes from both Java and C, both of which we have been formally trailed. Prior to the semester's start, the team will establish a version control system for the project so that work can commence as soon as the semester begins. Team members will work on their assigned tasks for each sprint independently, however they will consult with other team members if they need help or feel unable to complete their tasks on time. If a sprint is not completed by the deadline, the work will be temporarily pushed back until the team member finishes work on their current sprint, at that point the late work will be completed. The team will hold weekly meetings over Discord at a time determined after team members' schedules have been confirmed. During these meetings, the team can decide if the tasks need to be altered or rearranged, as well as a check on everyone's progress. In addition, there will be an in-person meeting in the middle of each sprint to address questions about individual work and to collaborate on aspects of the project that require more than one person. We will keep our client updated after each sprint and if any issues come up during the project.

Sprint Schedule

Sprint 1: Main Menu, Calendar Screen, Import Data, & Art Assets

- Araneesh - Allow for default semester data in the even that the player does not choose to import
- Jacqueline - Begin creating main game and UI assets to be used in the game
    - NPC characters
    - Activities
    - Calendar
    - Main game screens
- Josh - Set up the Main Menu to allow user to start the game
- Kacey - Create a functioning calendar system for school semester
- Tristan - Allow importation of data (via CSV) file to set important semester dates and create method to calculate and apply imported data to the in-game calendar

Sprint 2: Event System, Player Stats & Art Assets continued

- Araneesh - Design an algorithm that shuffles events and gives them to the player in a random order
- Jacqueline - Create method to sort through player stats and formulate results in the form of a budget and what type of spender he/she is (five different categories)
- Josh - Implement a character stats system where player choices (implemented later) will affect the player's stats
- Kacey - Continue creating art assets for the game as needed
- Tristan - Create weekday pop-up events and allow player to choose options that affect stats

Sprint 3: Map Screen & End of Chapter Screen

- Araneesh - Allow player to select activities until they are out of "hours" for the day
- Jacqueline - Create the UI that displays time, meters and budget

- Josh - Add activities throughout map screen
- Kacey - Create the Map screen to be used on weekends
- Tristan - Give all activities certain required "hours" and/or money to complete

Sprint 4: Chapters & Cutscenes

- Araneesh - Transition the four chapters into each other during gameplay
- Jacqueline - Implement cutscenes of dialogue at certain times in the semester
- Josh - Add a password-locked “Chapters” screen to the main menu
- Kacey - Use calendar data to set up four different chapters of the game
- Tristan - Design the constraints of each chapter to differentiate them from each other

Sprint 5: Tutorial, Pause Menu, Help & Documentation

- Araneesh - Allow tutorial to be disabled in settings menu
- Jacqueline - Write tutorial lines and associate them with different parts of the game
- Josh - Create pause menu and all necessary components of it
- Kacey - Create art assets for the tutorial giving character
- Tristan - Create the in-game glossary and documentation provided alongside the game

Appendix

MVP Map

	Main Menus, Sprint 1		Start of Game Process, Sprint 2	Player Interactions, Sprint 3	
In Scope	**Main Menu**	**Settings Menu**	**Tutorial**	**Calendar Screen**	**Map Screen**
	New Game Button	Return to Main Menu	character with dialog explains game mechanics	Monthly View	Map Artwork
	Chapters Button - password locked	View and bind controls	Explain calendar	color code: free days, single-choice days, or breaks	Location selection costs showing
	Volume Slider	Enable/Disable Tutorial	Explain events	implement clickable buttons & popups	Confirming location
	View Credits	Set start and End Dates	Explain choices	view details of upcoming events on mouse over	Cancel location
	Open settings		Explain budget	mark days with an "x" as they are completed	View date and time
	Settings Button - password locked		Explain grades		View budget
			Disable tutorial (settings menu)		View stress, kownledge, and diet
Stretch Goals	Continue Game Button	Distinct Music and sfx Settings	Survey with tutorial to have a more custom playthrough	cutscenes during break weeks	Some locations appear ocassionally
	Title screen Artwork				
Future Work	Login System for administrators	Controller and Keyboard movement options	Animations, voice over, or video	adminstrators can edit when events occur in the calendar	Different colleges can have different locations

Time and Money Management, Sprint 4		In Game Menus, Sprint 5		
Event System	**End of Chapter Screen**	**Chapters**	**Help and Documentation**	**Pause Menu**
pop-up appears with a prompt and discrete options	Display calculated monthly expenses and category costs based on the student's choices during that	4 Chapters	A manual separate from the game explains installation and running instructions, as well as	A button to pause the game from any screen
return to calendar screen when option is selected	Display the student's grade on their exams based on their level of studying	Chapter 1 features no budget or exams so students can make choices without seeing their immediate impact	A glossary can be accessed through the main menu or pause menu that explains various terms and mechanics	Return to game button
costs of each option are displayed	Next chapter button	Chapter 2 has a budget but no exams and is played if the student makes poor monetary choices in chapter 1	The glossary features a search bar	Settings button - password locked
25-50 distinct events	Display facts about time and money management relevant to the student.	Chapter 3 has exams but no budget and is played if the student makes poor studying choices in chapter 1	In each of the screens there is a question mark up at the top right which when clicked provides a	Exit to main menu button
event order shuffled each game	Return to menu button	Chapter 4 has a budget and exams and is played after chapter 2 or 3	gray semi transparent overlay that indicates the pause of the game and includes text pointing to certain areas to explain their	Glossary button
choices carry weights for 5 cagetgories of cost" education, entertainment, food, housing, or transportation	Category costs can be modified manually so students can see how lifestyle changes will affect their expenses	The chapters menu lets a player choose any of the 4 chapters to play after completing the chapter once or using a password	functionality	The game freezes while it is paused
	Display facts about time and money management relevant to the student.	Return to main menu button on chapters menu		Volume slider
event dialogue is voice acted	Artwork	After completing chapter 2 or 3, students can choose to play the other one too	Frequently asked questions are included in the documentation	Helpful tips are displayed when the game is paused
pictures for events	Details of each part of the screen shown on mouse hover	Based on the chapter, one or more of the stress, money, and studying meters are disabled		
after making a choice, the likely outome of that choice is explained to the player				
administrators can create custom events	Use real statistics from the college the game is being played for to see averages for student expenses	Unique events for each chapter	A documentation website can be used as an alternative	

User Stories and Acceptance Criteria

User Stories - Due to the change in project from Mall Money, some user stories have been removed or modified, as they no longer fully applied to the new project.

Main Menu

Category	User Story	Acceptance Criteria	
Main Menu	***As a player, I want to navigate the main menu to start a new game so I can begin learning about time and money management***	***Scenario 1:***	***Scenario 2:***
		A new player wants to start a new game. ***Given*** *the player wants to start a brand new game;* ***When*** *they start up the name and are presented with the main menu;* ***Then*** *they can click on the new game option to start a new game.*	*A returning player wants to play a chapter they have completed already* ***Given*** *the player is on the main menu and has received a completion password for a chapter;* ***When*** *they click on the chapters button and enter the password;* ***Then*** *they are taken to the chapters menu and the chapter in question is selectable.*
		Scenario 3	
		A player wishes to exit the application ***Given*** *the user is on the main menu;* ***When*** *they click the exit to desktop button;* ***Then*** *the game application closes.*	

Map Screen

Category	User Story	Acceptance Criteria	
Spend Time	***As a player I want to spend time at certain locations so I can study, eat, or relax.***	***Scenario 1:***	***Scenario 2:***
		A player gets lunch. ***Given*** *the player wants to go eat* ***When*** *they select on a building that has food options* ***Then*** *a player would then select a "food event" they would like to spend time and money on, reducing their money and hours remaining.*	*A player studies.* ***Given*** *the player wants to study* ***When*** *they select a building that has a study option* ***Then*** *they can select to spend time studying and a number of hours is reduced from their hours remaining.*
		Scenario 3	***Scenario 4***
		A player tries to overspend on hours. ***Given*** *the player wants to spend more hours than they have left* ***When*** *select an event to attend* ***Then*** *the player is told they have too few hours to attend that event.*	*A player relaxes.* ***Given*** *user wants to relax* ***When*** *they select an area they can relax in* ***Then*** *they have spent hours relaxing in an area.*

Main Menu

Category	User Story	Acceptance Criteria	
Main Menu	***As a player, I want to navigate to different chapters so I can see what the game has to offer.***	***Scenario 1***	***Scenario 2***
		An instructor that has newly downloaded the game wants to access different chapters. ***Given*** *the instructor just downloaded the game* ***When*** *they click on the chapters button* ***Then*** *they enter in the password given to instructors only.*	*A student tries to access the chapters menu.* ***Given*** *a student that has recently downloaded the game* ***When*** *they click on the chapters menu* ***Then*** *they are unable to enter the necessary password to view all chapters.*
		Scenario 3	***Scenario 4***
		An instructor is presenting to the class the features of the game. ***Given*** *the instructor has unlocked the chapters menu* ***When*** *they click on the chapters menu* ***Then*** *they can show the different chapters that the student might experience while playing.*	

Start of Game Process

Category	User Story	Acceptance Criteria	
Start of Game Process	***As a player, I want to play through the tutorial so I can avoid having to read documentation to learn.***	***Scenario 1***	***Scenario 2***
		A new player makes use of the tutorial ***Given*** *the player is at the start of the game* ***When*** *they see a character presenting to them the different aspects of the game* ***Then*** *they read what the character has to say until they click next.*	*A new player completes the tutorial* ***Given*** *the player is on the last part of the tutorial* ***When*** *they complete the condition for the tutorial* ***Then*** *a pop up appears that notifies the player that the tutorial has ended.*
		Scenario 3	***Scenario 4***
		A player wants to revisit the tutorial ***Given*** *the player is playing the game* ***When*** *they are confused about a certain aspect of the game* ***Then*** *they can click the top right of the screen for a refresher of the screen they are playing.*	

Pause menu

Category	User Story	Acceptance Criteria	
Pause Menu	***As a player, I want to use the pause menu to save and quit the game so I can stop playing at any time.***	***Scenario 1***	***Scenario 2:***
		A player pauses the game. ***Given*** *the player is in the game* ***When*** *they press the pause button* ***Then*** *the pause menu in opened and time freezes in the game until it is closed*	*A player saves the game* ***Given*** *the player is in the pause menu* ***When*** *they press the save button and select a file slot* ***Then*** *the game saves and the display updates to show the new save data.*
		Scenario 3	***Scenario 4***
		A player quits to the main menu ***Given*** *the player is in the pause menu* ***When*** *they press the quit button and confirm in the pop up menu* ***Then*** *the game exits to the main menu without saving.*	*A player opens the settings from the pause menu* ***Given*** *the player is in the pause menu* ***When*** *they click the settings button* ***Then*** *the settings menu is opened.*

Player movement

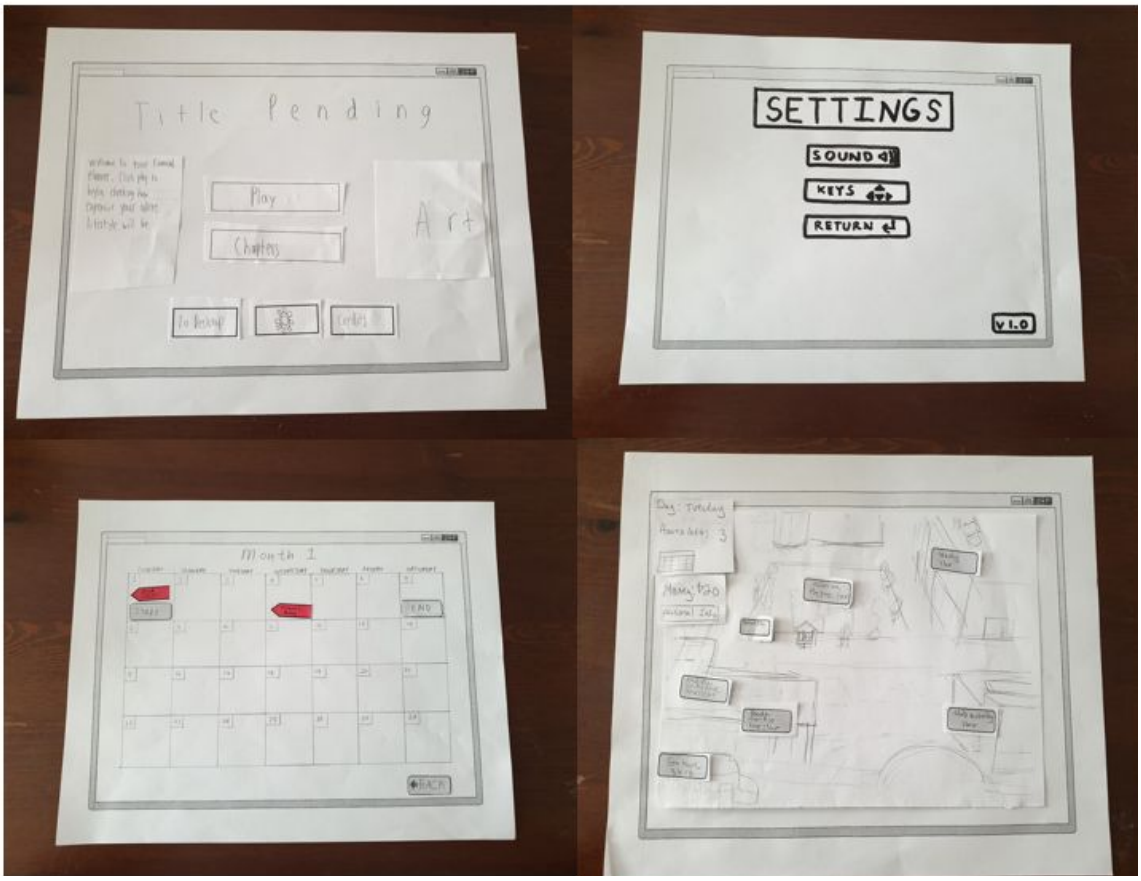
Category	User Story	Acceptance Criteria	
Player Movement	***As a player, I want to interact with the map so I can choose how to spend my time and money.***	***Scenario 1***	***Scenario 2***
		A player clicks on a building and sees choices presented ***Given*** *the player is shown a map* ***When*** *they click on a building to see what they can do* ***Then*** *the player sees the time and money cost to do the selected activity.*	*A player chooses to spend their time and money at an activity* ***Given*** *a player clicks on an activity* ***When*** *they click to agree to spend their time and money* ***Then*** *time and money on their screen is reduced.*
		Scenario 3	
		A player chooses not to spend their time and money on an activity ***Given*** *the player clicks on an activity in which they are interested* ***When*** *they click to not spend time and money on the activity* ***Then*** *the activity confirmation module closes out.*	

Help and documentation

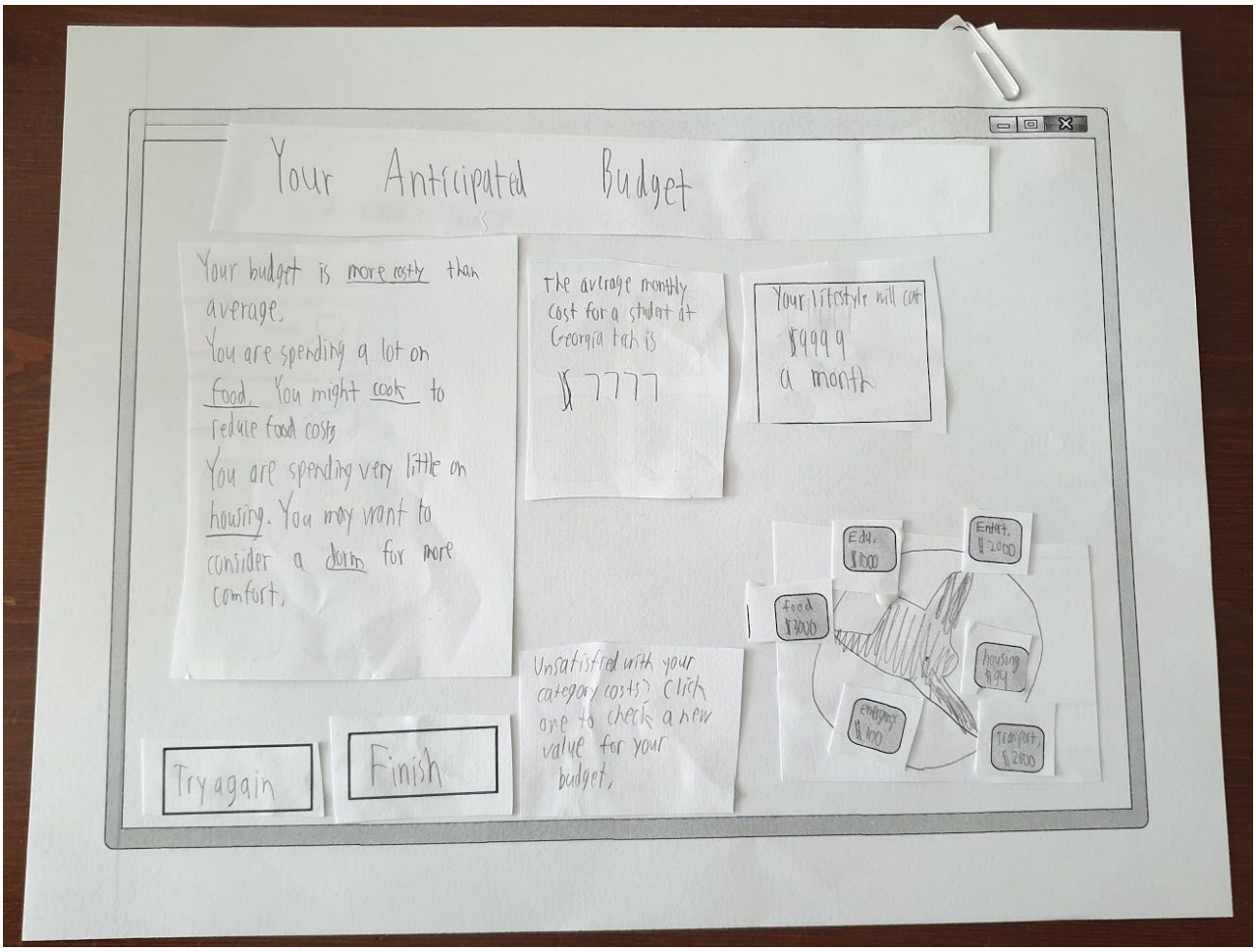
Category	User Story	Acceptance Criteria	
Help and Documentation	***As an administrator, I want to read documentation for the installation and use of the game so I can integrate it smoothly into freshmen orientation.***	***Scenario 1***	***Scenario 2***
		A customer reads documentation outside of the game ***Given*** *the customer has purchased and downloaded the game* ***When*** *they navigate to the files that contain the documentation and open them* ***Then*** *they can read the documentation from their computer.*	*A player reads documentation included in the game* ***Given*** *the player is in the main menu or pause menu* ***When*** *they click on the glossary button* ***Then*** *a pop up explaining various features about the game is shown.*
		Scenario 3	
		A customer uses a password to access protected parts of the game ***Given*** *the customer is on the main menu* ***When*** *they click on the chapters button and enter the correct password* ***Then*** *they are taken to the screen requested*	

Paper Prototype

Transitions between screens are handled by team members who have a mental graph of the transitions.



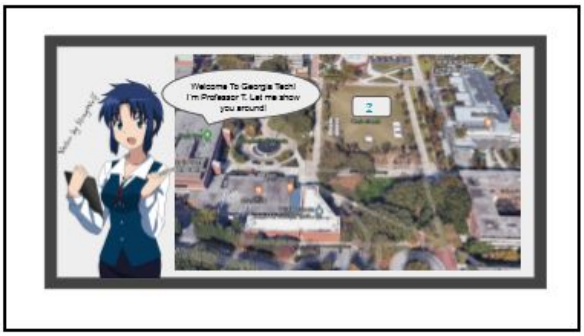
Paper Prototype (continued)



Digital Prototype

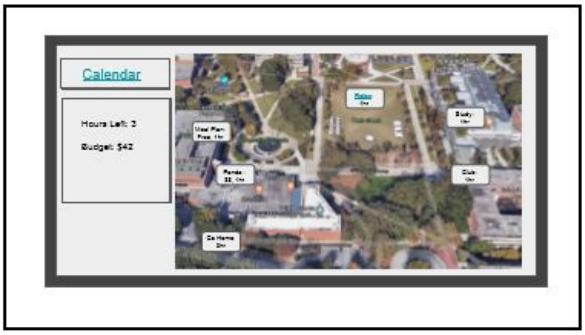
The transitions between slides are linear. The slides go in order.

https://docs.google.com/presentation/d/1GFiE6VFCbU1ZI_sbGu_ar4EwkWlZkjvtr19WKjWF5Ck/edit?usp=sharing




This is the Skiles building where most of your liberal art classes will be located. This building as a lot of greenery and open space to enjoy nature. So be sure to soak up that sunlight when you can get it.
Next


Calendar
Hours Left: 4
Budget: $50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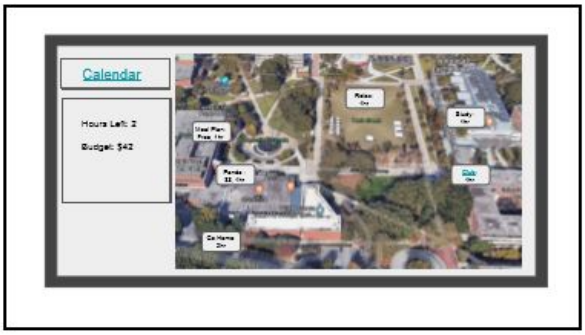
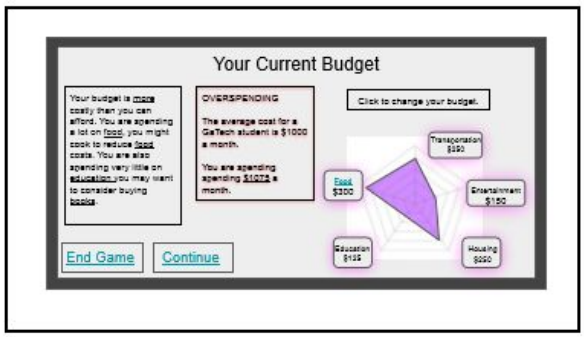
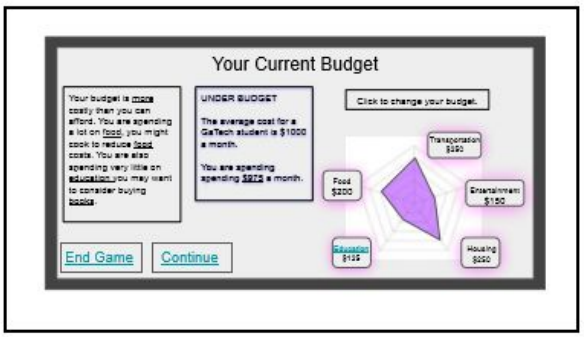
Hours Left: 3
Budget: $42

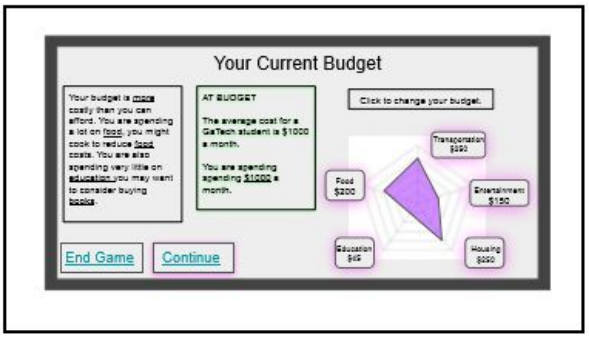

Calendar
Hours Left: 2
Budget: $42

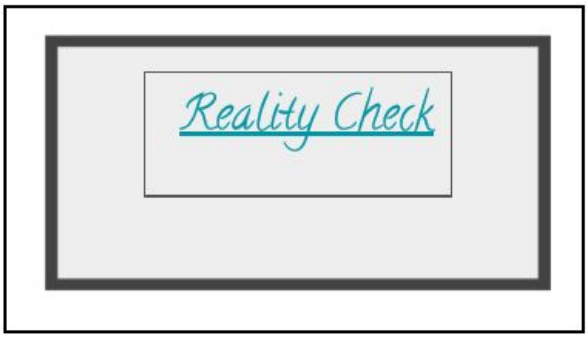

Calendar
Hours Left: 1
Budget: $42


Your Current Budget
OVERSPENDING
The average cost for a GaTech student is $1000 a month.
You are spending spending $1272 a month.
Click to change your budget.
Looks like you're spending too much, try to fix your spending habits!
Transportation $292
Food $300
Entertainment $300
Education $125
Housing $200


Your Current Budget
Your budget is more costly than you can afford. You are spending a lot on food, you might cook to reduce food costs. You are also spending very little on education you may want to consider buying books
OVERSPENDING
The average cost for a GaTech student is $1000 a month.
You are spending spending $1272 a month.
Click to change your budget.
Transportation $292
Food $300
Entertainment $150
Education $125
Housing $200
End Game
Continue

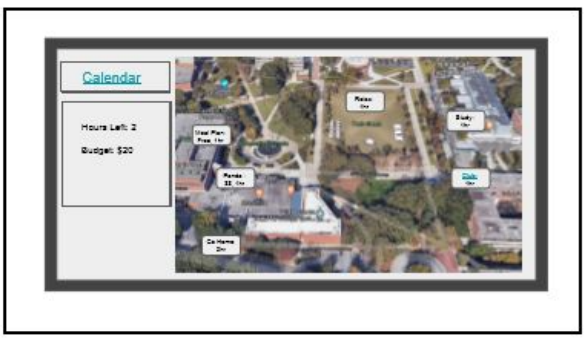

Your Current Budget
Your budget is more costly than you can afford. You are spending a lot on food, you might cook to reduce food costs. You are also spending very little on education you may want to consider buying books
UNDER BUDGET
The average cost for a GaTech student is $1000 a month.
You are spending spending $975 a month.
Click to change your budget.
Transportation $292
Food $200
Entertainment $150
Education $125
Housing $200
End Game
Continue

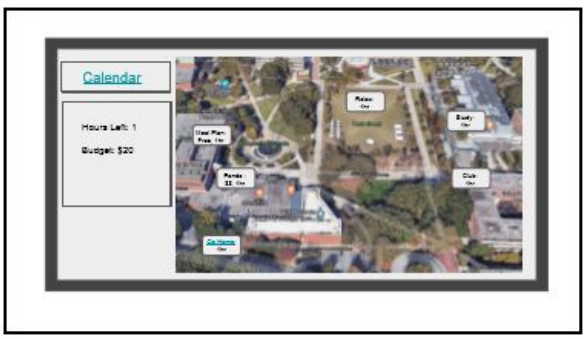

Your Current Budget
Your budget is more costly than you can afford. You are spending a lot on food, you might cook to reduce food costs. You are also spending very little on education you may want to consider buying books.
AT BUDGET
The average cost for a GaTech student is $1000 a month.
You are spending spending $1000 a month.
Click to change your budget.
Transportation $200
Food $200
Entertainment $150
Education $40
Housing $250
End Game
Continue


Reality Check


Calendar
Hours Left: 4
Budget: $20


Calendar
Hours Left: 3
Budget: $20

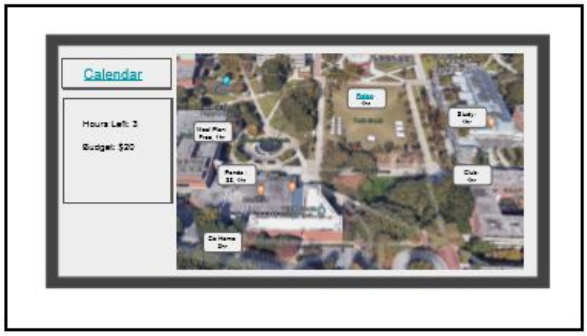

Calendar
Hours Left: 2
Budget: $20


Calendar
Hours Left: 1
Budget: $20


FAIL
Looks like you need to study more! Keep that in mind for the next exam.
Next

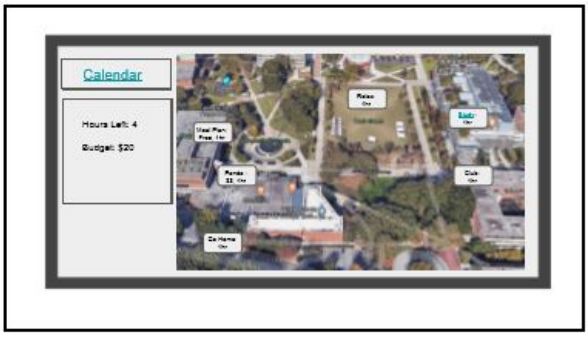

Getting A Grip


Calendar
Hours Left: 4
Budget: $20

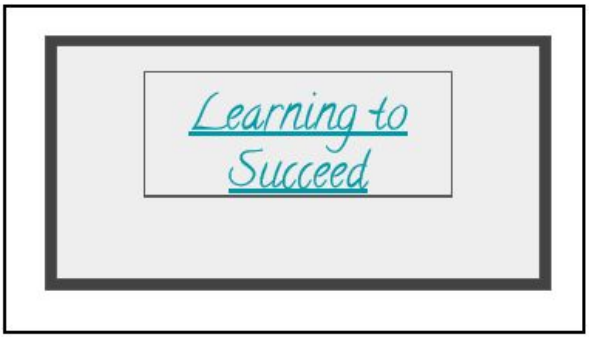

Calendar
Hours Left: 3
Budget: $20


Calendar
Hours Left: 2
Budget: $20

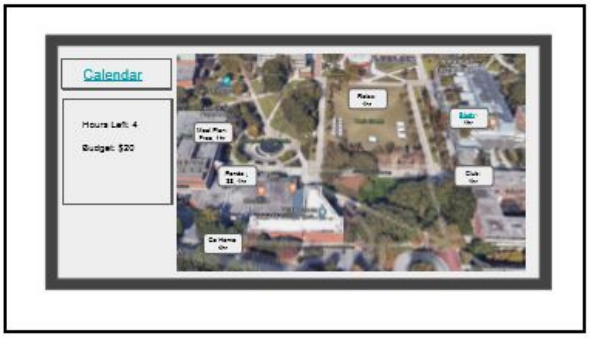

Calendar
Hours Left: 1
Budget: $20

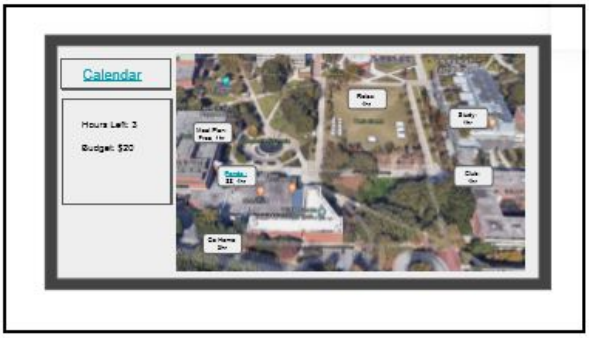

Calendar
Hours Left: 4
Budget: $20

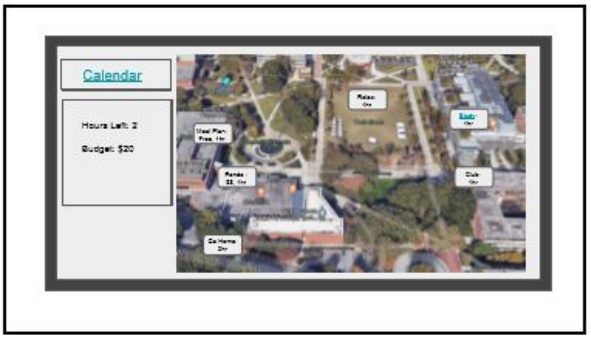

SCORE
RESCORE
ROSTER NUMBER
CORRECT
% CORRECT
Looks like you are really pulling yourself out of a slump! Keep on doing your best.
Next

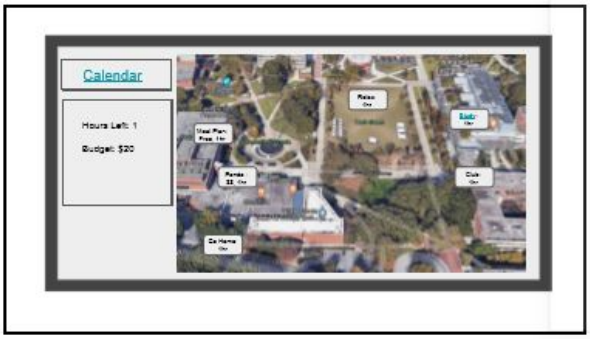

Learning to Succeed


16
17
18
19
23
24
25
26
30
31
FINALS WEEK!
Finals are coming up study hard!
Next


Calendar
Hours Left: 4
Budget: $20


Calendar
Hours Left: 3
Budget: $20


Calendar
Hours Left: 2
Budget: $20


Calendar
Hours Left: 1
Budget: $20


Congratulations! You made it at your first semester at Tech only three and a half more years to go
Calendar

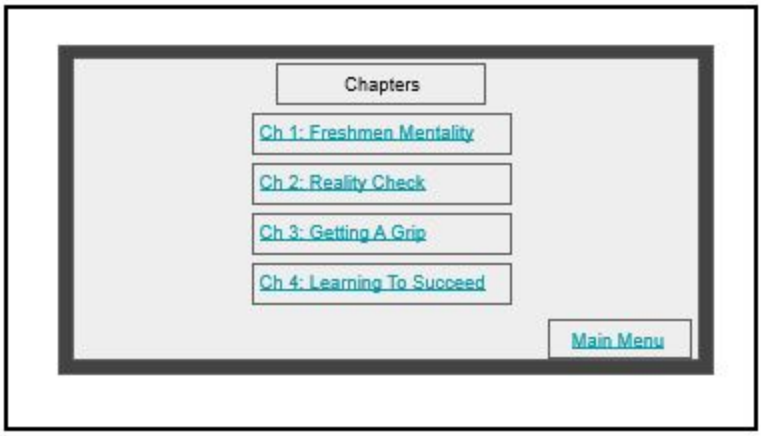

END
Thanks for playing!


Back
First Day of Classes
Spirit Day
Holiday
Party


Back
First Day of Classes
Spirit Day
Holiday
Party


Back
ANUARY 2019
SUN
MON
TUE
WED
THU
FRI
SAT


Back
NUARY 2019
SUN
MON
TUE
WED
THU
FRI
SAT


Chapters
Ch 1: Freshmen Mentality
Ch 2: Reality Check
Ch 3: Getting A Grip
Ch 4: Learning To Succeed
Main Menu

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