

Undergraduate Thesis Prospectus

**Tracking and Reporting of Horse Show Results**

(technical research project in Computer Science)

**Payday Loans in Virginia**

(STS research project)

by

Jacob Fullerton

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technical project collaborators:

Alvin Yuan

Andrew Yim

Draden Gaffney

Jack Schumann

On my honor as a University student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments.

signed: \_\_\_\_\_ date: \_\_\_\_\_

approved: \_\_\_\_\_ date: \_\_\_\_\_  
Peter Norton, Department of Engineering and Society

approved: \_\_\_\_\_ date: \_\_\_\_\_  
Ahmed Ibrahim, Department of Computer Science

**General Research Problem,**

*How can the introduction of technology improve process efficiency?*

High tech innovation can improve both speed and accuracy, particularly for complex analysis such as loan approval. In the operating room, Huang (2015) observed that tracking systems can curtail the time during and between procedures.

**Horse Show Results Tracking and Reporting,**

*How can horse shows better track and report results?*

The technical advisor of this project is Ahmed Ibrahim of the Computer Science Department. I will work alongside Alvin Yuan, Andrew Yim, Jack Schumann, and Draden Gaffney to complete this project. We will improve and add functionality to an existing Django application developed to manage horse shows. The team will work with a customer to define requirements that will represent the goals of the project and document for all steps of the agile process so that future students can replicate the team's development strategies and processes. While the software created from this project is reusable in the future, the main purpose of the project is to work specifically on improvements requested by a single client.

In horse shows, a system must exist for tracking riders, horses, and combos of a horse and a rider. Additionally, for each combo the system must have a way to record scores for each event, also known as classes, in the show. Previously, our customer used a large poster for all results tracking where everything would be handwritten (fig. 1).

Class	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	13th	14th	15th	16th	17th	18th	19th	20th
1st - 10 yrs																				
2nd - 6 yrs																				
3rd - 4 yrs																				
4th - 2 yrs																				
5th - 1 yr																				
6th - 5 yrs																				
7th - 4 yrs																				
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15th - 1 yr																				
16th - 10 yrs																				
17th - 6 yrs																				
18th - 4 yrs																				
19th - 2 yrs																				
20th - 1 yr																				

Figure 1. Previous system for recording results for Hoof n Woof horse show.

This system was not optimal as all results were only stored in one location, all calculations of final scores must be done manually, and fixing mistakes on the scorecard would be very messy. In addition, if new riders wanted to register on the day of the show it was time consuming to get them set up.

For this project, we used Jira to keep track of all the tasks that we had to complete and Git for version control. On the technical side, we worked on bug fixes, user interface, and new features that the client requested. A few bug fixes included improved search, increasing the valid combo number range, and the ability to include hyphens in the accession number. The user interface upgrades involved being able to sort models by categories and viewing a horse-rider combo's name and owner on the rankings page instead of just by the combo number. A lot of the main feature changes involved the form to add a new horse-rider combo: the ability to add

the combo to classes, searching for existing riders/horses, and creating new riders/horses without losing the combo form data entered already. Other features include viewing the rankings of all of the show's classes on the same page, adding a notification system for removing or adding a new model, and implementing a more secure method for signing up for the website and modifying the data.

The other half of this project involved writing documentation for server installation, Jira installation, team workflow, and code coverage. The server installation documentation includes instructions for both Linux and Windows to install required dependencies and configuring settings to launch the application. The Jira installation documentation includes instructions for installing Jira onto a Linux server and configuring Jira properly. The team workflow documentation outlines how we use Jira and Git for our project, and the code coverage documentation describes how to use Coverage to view how much code is being tested by the unit tests.

## **Payday Loans in Virginia**

*How are critics and defenders of payday lenders in Virginia advancing their respective agendas?*

Because it takes money to make money, poverty can be self-perpetuating. The Federal Reserve describes a payday loan as a “small, short-term, unsecured, single-payment, consumer loan” (Prager, 2009). In such a loan, a “borrower writes a personal check to the lender, with the amount of the check equal to the loan amount plus the finance charge. The lender agrees to hold the check for a specified period of time (usually until the customer's next payday) before depositing it” (Prager, 2009). The payday loan business preys on borrowers by charging interest

rates exceeding 500% (Carlson, n.d.). Borrowers can become trapped, borrowing to pay interest on past loans (Stegman, 2007).

For low-income borrowers or borrowers with bad credit, a payday loan may be the only option. Banks generally will not lend to people who have extremely low credit scores. They typically advise borrowers to stay away from payday loans without providing an alternative (Silver-Greenberg, 2013).

Payday lenders, such as Advance America, the largest in the United States, does not consider credit in the loan approval process; instead, their decision is based on the borrower's income (Advance America 2007). Hence payday lenders may approve loans to borrowers who have defaulted on loans. As there is a strong correlation between income and credit scores, low-income earners may only have no option but a payday loan. Payday loan businesses in Virginia cluster in low-income areas (Prager, 2009). Virginia law protects payday loan borrowers by limiting late fees, court costs, interest rates, and loan amounts (Virginia Administrative Code 10VAC5-200-80). However, a lender following these laws may still charge a fee of \$25.70 on a 7-day, \$100 loan - an APR of 1339%.

Similarly, for-profit colleges recruit students who performed poorly in high school. Following a similar model to payday lending, these colleges target people no one else will serve. Students receive inferior education and their credits or degree may be worthless (Newton, 2018). Of all the U.S. colleges that have closed since 2013, 95.5% were for-profit institutions (Newton, 2018).

Some Fin-Tech corporations offer alternatives. Capital One, headquartered in McLean, Virginia, offers credit cards and loans to low-income people at more reasonable rates (Murray, n.d.). Larger banks are beginning to provide financial education to help borrowers recognize

predatory lending practices (Field, 2019). Banks can thereby divert more reliable borrowers from payday services to their own institutions. The education of services also promotes the banks that offer them. On its website, Capital One's states that borrowers should avoid payday lending (Capital One, 2018). Budd (2018) found that unfavorable media coverage of payday loans also deters borrowers from them.

The National Association of Consumer Advocates (NACA) is an advocacy for consumers. NACA states that payday loans are by nature predatory (NACA, n.d.), it helps clients find lawyers and other resources to protect them from these practices.

The Community Financial Services Association of America (CFSA) is a trade association for payday lenders. To avoid the unfavorable connotations of the term *payday loan*, CFSA called them "small-dollar loans". The group lists the benefits of the loans, "the average fee for a single payment small-dollar loan is \$15 per \$100 of the loan, 96% of borrowers find small-dollar loans useful, and nearly half of Americans cannot afford a \$400 unanticipated expense". (CFSA, n.d.). These statements are undocumented and critical information such as average loan duration is missing. A \$15 fee on a \$100 loan for 1-year yields interest rate of 15%, but if the loan duration was 1 week the interest rate would be 780%. CFSA's members are payday loan businesses, including the biggest payday lender in America, Advance America Cash Advance Centers, Inc.

## References

- Advance America, Cash Advance Centers, Inc. (2007) Form 10-K for Fiscal Year ending December 31, 2007.
- Alper, A. (2012, Jan 20). Analysis: U.S. payday lenders point fingers to blunt crackdown. Reuters <https://www.reuters.com/article/us-financial-regulation-payday/analysis-u-s-payday-lenders-point-fingers-to-blunt-crackdown-idUSTRE80104R20120120>.

- Budd, K., Kelsey, D., Mueller, F., & Whittle, A. (2018). Metaphor, morality and legitimacy: A critical discourse analysis of the media framing of the payday loan industry. *Organization*, 26(6), 802–829. doi: 10.1177/1350508418812569
- Budd, K., Kelsey, D., Mueller, F., & Whittle, A. (2019). Metaphor, morality and legitimacy: A critical discourse analysis of the media framing of the payday loan industry. <https://journals.sagepub.com/doi/full/10.1177/1350508418812569>.
- Capital One (2018). Four Types of Credit to Avoid. <https://www.capitalone.com/learn-grow/money-management/credit-types-avoid>.
- Carlson, K. (n.d.). How Payday Loans Work: Interest Rates, Fees and Costs. <https://www.incharge.org/debt-relief/how-payday-loans-work/>.
- Community Financial Services Association of America. (n.d.). Get the Facts. <https://www.cfsaa.com/get-the-facts>.
- Field, B. (2019). Financial Literacy For Low Income Adults and Families. <https://www.financialeducatorsCouncil.org/financial-literacy-for-low-income/>.
- Huang, A. Y., Joerger, G., Salmon, R., Dunkin, B., Sherman, V., Bass, B. L., & Garbey, M. (2015). A robust and non-obtrusive automatic event tracking system for operating room management to improve patient care. *Surgical Endoscopy*, 30(8), 3638–3645. doi: 10.1007/s00464-015-4610-2
- Majeske, K. D., & Lauer, T. W. (2013). The bank loan approval decision from multiple perspectives. *Expert Systems with Applications*, 40(5), 1591–1598. doi: 10.1016/j.eswa.2012.09.001
- Murray, C., & Turns, A. (n.d.). How To Apply For A Credit Card With Limited Income. <https://www.moneyunder30.com/apply-credit-card-limited-income>.
- National Association of Consumer Advocates (n.d.). Predatory Lending. <https://www.consumeradvocates.org/for-consumers/predatory-lending>.
- Newton, D. (2018). 20,000 More Reasons to Never Go to a For-Profit School. *Forbes* <https://www.forbes.com/sites/dereknewton/2018/12/09/20000-more-reasons-to-never-go-to-a-for-profit-school/#d0ca4a230e5b>.
- Opploans (n.d.). The Negative Effects of Predatory Payday Loans with Financial Expert David Bakke. <https://www.opploans.com/content/ebook-payday-loans/predatory-effect-payday-loans/negative-effects-predatory-payday-loans/>.
- Prager, R.A. (2009). Federal Reserve Determinants of the Locations of Payday Lenders, Pawnshops and Check-Cashing Outlets
- Silver-greenberg, J. (2013). JPMorgan Chase Is Reining In Payday Lenders. *New Y. Times* <https://dealbook.nytimes.com/2013/03/19/jpmorgan-reining-in-payday-lenders/>.

Stegman, Michael, A. (2007). "Payday Lending." *Journal of Economic Perspectives*, 21 (1): 169  
190.

Virginia Administrative Code 10VAC5-200-80. Payday Lending Pamphlet Text.