

# Main Title + Extras

# **Maximiliano Garcia - University of Arkansas Works**

## **Compendium of Projects made from 2021 - 2025**

Note: Curated documentation (no lecture notes or physical papers) is split into tabs by date of completion.

### Favorite Assignments

- Most Word Docs from October 20, 2021, and February 18, 2022 to December 3, 2025
- My Personal Opinions have changed on *Technology Minimization in Our Daily Lives - Persuasive Speech/Presentation Outline: Completed 2026 (April 3th, 2023)*, I still utilized the sources for that case I was given, however, I was not as open to adopting advancement back then as I am now.

### Backstory

I attended the University of Arkansas as an Engineering student going into Computer Science, achieved Honors, took summer classes at NWACC, joined RSOs, pivoted to Business Information Systems, took a gap year to obtain a Technical Diploma in Information Systems with CompTIA Test Out Certifications and Completed Online PMI PMP Project Management Course, returned to the University with a part-time job as an IT Asset Management Assistant, got into the Office of Entrepreneurship and Innovation and McMillion Innovation Studio to pursue out-of-the-box company idea pitching, got a startup internship for a local NWA AI GovTech startup, and have since transferred to Western Governor's University due to a more flexible and impressive Information Technology focus.

December 3, 2025

# Data Lobbying Restrictions

SPCH 10003-058 Persuasive Public Speech by Maximiliano Garcia

Congress enactment of stricter data lobbying regulations to eliminate organizational bottlenecks that prevent the protection of personal privacy

Maximiliano Garcia

University of Arkansas

SPCH 10003-058: Public Speaking

Jerilyn Kennemer

December 03, 2025

## **Congress enactment of stricter data lobbying regulations to eliminate organizational bottlenecks that prevent the protection of personal privacy**

Specific Purpose: Aggressive lobbying by tech companies creates organizational bottlenecks in government decision-making, undermining personal privacy protections, but stricter regulations can eliminate these barriers and restore citizen rights.

### **Introduction**

(Attention grabber) Imagine waking up to find your most intimate details like your health records, financial history, even your daily movements sold to the highest bidder without your consent, all because powerful corporations influenced lawmakers to block protective reforms.

This is not a dystopian movie, unfortunately it is the living reality for millions of Americans today.

(Credibility) As someone who's delved into recent reports and expert analyses on data privacy, including Senate hearings and industry spending disclosures, I have seen how unchecked lobbying stalls progress.

(Reason to listen) In our digital age, where every click and swipe generates data, your personal privacy is not just a convenience, but a fundamental right that is being eroded, affecting your security, autonomy, and trust in institutions.

(Preview) Today, I will highlight the urgent need for stronger privacy protections amid rising threats, explain how tech lobbying creates debilitating organizational bottlenecks, and outline how stricter regulations can resolve this crisis.

Transition: To understand why action is critical, let us first examine the escalating threats to our personal data.

## **Body**

- I. Now more than ever, robust privacy protections are needed as data breaches and exploitation skyrocket.
  - A. The absence of comprehensive federal privacy laws leaves citizens vulnerable, with states' patchwork efforts falling short.
    1. According to a 2025 report from the Electronic Privacy Information Center and PIRG, industry pressure has convinced many states to pass weakened laws that mimic corporate-friendly models, failing to address core privacy risks.
    2. This fragmentation results in over 1,970 data privacy lawsuits filed in federal courts alone in 2024, as noted in a January 2025 analysis by Wiley Rein, highlighting the chaos from inconsistent protections.
  - B. Tech companies' data practices continue to invade privacy, fueled by minimal oversight.
    1. A March 2025 New York Times article revealed that AI companies, emboldened by lighter regulatory environments, are lobbying aggressively for fewer rules, allowing unchecked collection of personal data.
    2. This has led to widespread issues, with 94% of organizations admitting customers would abandon them if data is not properly protected, per a January 2025 SecureFrame report on data privacy statistics.
  - C. Without intervention, these threats compound, affecting everything from identity theft to discriminatory algorithms.
    1. The Gibson Dunn 2025 Cybersecurity and Data Privacy Outlook warns that enforcement actions by federal and state authorities are increasing, but they are reactive, not preventive, leaving gaps exploited by bad actors.

2. For my presentation aid, I will display a chart showing the surge in data breaches from 2024 to 2025, illustrating how unprotected data leads to billions in economic losses and personal harm.

Transition: Understanding these threats is key but so is recognizing the root cause of why progress stalls.

- II. Tech lobbying creates organizational bottlenecks that hinder effective privacy legislation.
  - A. Massive lobbying expenditures influence policymakers, delaying or diluting bills.
    1. In a July 2025 Issue One report, eight major tech, AI, and social media companies spent a combined \$36 million on federal lobbying in the first half of 2025 alone, targeting privacy and AI regulations.
    2. This mirrors tactics exposed in a July 2025 Tech Policy Press transcript of a Senate hearing, where experts directly linked Congress's inability to pass privacy laws to Big Tech's lobbying playbook, reminiscent of Big Tobacco's historical strategies.
  - B. These efforts sow policy chaos, creating bottlenecks in congressional decision-making.
    1. A November 2025 Project Censored article details how Big Tech pushes for federal overrides of stronger state laws, undermining consumer protections and stalling unified reforms.
    2. Organizational bottlenecks extend to implementation, as a July 2025 TrustCloud guide on data privacy compliance challenges explains, where regulatory fragmentation from lobbying leads to inefficiencies in organizations trying to comply, such as conflicting standards and resource drains.
  - C. The result is a system where corporate interests trump public good, eroding trust.
    1. State regulators, in an April 2025 Record Media piece, lobbied Congress against federal preemption, arguing it would weaken existing protections due to industry influence.
    2. Without checks, these bottlenecks perpetuate a cycle where bills like the 2024 American Privacy Rights Act are pulled from hearings, as reported in a June 2024 Wired article, leaving privacy in limbo.

Transition: With the problem clear, let's turn to a practical solution that can break these bottlenecks.

- III. Congress must enact stricter regulations on data lobbying to prioritize privacy protections.
  - A. Key reforms include limits on lobbying spending and enhanced transparency requirements.

1. An April 2025 Center for American Progress report outlines four essential protections for federal privacy law, including strong data minimization and opt-out mechanisms, which could be enforced by curbing undue corporate influence.
  2. This would eliminate bottlenecks by mandating disclosure of lobbying contacts and funding, as suggested in the 2025 Harvard Kennedy School paper on tech regulation, ensuring decisions are based on public interest.
- B. Such regulations would foster fairer policymaking and empower citizens.
1. By drawing from successful models like the EU's GDPR, as referenced in the 2025 NAI forecast for data privacy, the U.S. could implement rules that require lobbyists to register data-related campaigns, reducing hidden influences.
  2. Organizations would benefit too, with clearer guidelines alleviating compliance bottlenecks, per the February 2025 Relativity blog on data privacy trends.
- C. Implementation is feasible through bipartisan support and existing frameworks.
1. The March 2025 Paul Hastings US Privacy Update notes that Congress is reconsidering kids' data protections, providing a starting point for broader lobbying reforms.
  2. Ultimately, these changes would shift power back to citizens, ensuring privacy laws reflect ethical priorities over profits.

Transition: Envisioning this reformed system shows the profound impact it could have.

### **Conclusion**

(Review) As I have outlined, the dire need for privacy protections stems from escalating threats, exacerbated by tech lobbying's organizational bottlenecks, but stricter congressional regulations offer a clear path forward. Imagine a world where your data is secure, free from corporate exploitation with fewer breaches, fairer algorithms, and restored trust in democracy.

(Clincher) You can make this reality by contacting your congressional representatives today through congress.gov or phoning their offices, urging support for bills limiting data lobbying. Sign petitions from groups like the Electronic Privacy Information Center as well. Your voice matters so act now to protect your privacy and that of future generations.

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November 2, 2025

University of Arkansas IT Asset Management Assistant Part-Time Job Surplus Logging Excel Sheet  
for the Microsoft Surfaces and Delivery Manifest Template

A	B	C
<b>Max Surplus Logging 1 - 11/03</b>		
1	Device Description	Tag Number
2	3 Microsoft Surface Pro 6	4 7028199 045041785053
3	5 Microsoft Surface Pro	2693613 013544464853
4	6 Microsoft Surface Pro 4	7028173 007076165353
5	7 Microsoft Surface Pro	7038768 046093643453
6	8 Microsoft Surface Pro	7061186 001055370253
7	9 Microsoft Surface Pro	7047168 013395761253
8	10 Microsoft Surface Pro	7055399 012150573453
9	11 Microsoft Surface Pro	7057024 003311682953
10	12 Microsoft Surface Pro	7028184 028796381853
11	13 Microsoft Surface Pro - Windows 8	7042443 007306552753
12	14 Microsoft Surface Pro - Windows 8	7042074 037466250753
13	15 Microsoft Surface Pro - Windows 8	7042439 019100352653
14	16 Microsoft Surface Pro - Windows 8	7048340 002451252553
15	17 Microsoft Surface Pro (Black)	7083053 044701592053
16	18 Microsoft Surface Pro	7072355 019309661053
17	19 Surface Book	2691980 004244764657
18	20 Microsoft Surface Pro	7028319 014305183453
19	21 Microsoft Surface Pro	7055927 016583555353
20	22 Microsoft Surface Pro	7042681 007206663053
21		
22		
23		

Delivery Manifest 10/20/2025

October 28, 2025

# The Real Cost of Ignoring Sustainability

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SPCH 10003-058: Public Speaking

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October 28, 2025

1 ★ The Real Cost of Ignoring Sustainability

2 ★ Introduction To A Promised World

3 ★ Potential Costs of Ignoring Sustainability

4 ★ Financial Losses from Inefficiencies

5 ★ Health and Social Impacts

6 ★ A World Shaped by Action and Interconnectedness

## The Real Cost of Ignoring Sustainability

Specific Purpose: As a result of my speech, my audience will learn about the environmental, economic, and social costs of ignoring sustainability, including local impacts in the US.

Central Idea: Ignoring sustainability incurs significant environmental degradation, economic losses, and social inequities, with broader implications for global development.

### Introduction

(Attention grabber) Imagine a world promised through glossy designs of the early 2000s in lush green hills under blue skies or decades ago through retrofuturism, where technology harmonizes with nature or space. Yet, as explored in aesthetic critiques like Frutiger Aero, these visions masked corporate greenwashing, leading to unfulfilled promises and real-world costs we are facing today.

(Reason to listen) Sustainability isn't abstract. It affects us locally through rising pollution-related health issues in US cities and economic hits from climate events, potentially impacting our jobs, communities, and daily lives even right here in Northwest Arkansas where we are seeing some more traffic and housing issues.

(Credibility) Through reviewing recent academic research from 2024-2025, I have gathered evidence on these costs to inform our understanding.

(Preview) Today, I'll discuss the environmental costs, economic costs, and social costs of ignoring sustainability.

Transition: Let's start with the environmental toll, where the neglect leads to noticeable tangible degradation.

### Body

- I. Ignoring sustainability results in severe environmental costs, including pollution and resource depletion.
  - A. Pollution from unsustainable practices exacerbates health and ecosystem issues.
    1. According to a 2024 study by Chaudhary, Gaur, and Rustagi in Sustainable Materials and Technologies, unchecked pollution like global warming and acidification arises from ignoring sensor-integrated sustainable technologies, leading to biodiversity loss.
    2. Locally in the US, the EPA's 2024 Air Trends Report notes air pollution causes 100,000 premature deaths annually, with urban areas like Los Angeles seeing a 15% rise in emergency visits due to fine particulate matter.
  - B. Climate events intensified by neglect cause widespread environmental damage.

1. The same 2024 Chaudhary et al. study highlights how failing to adopt green nanotechnology worsens desertification and energy crises.
2. In 2025, EPA assessments show 1.2 trillion gallons of contaminated wastewater in 2024 affected US waterways, creating dead zones in the Gulf of Mexico and impacting local fishing.

Transition: These environmental costs do not just exist in isolation but also translate into significant economic burdens.

- II. The economic costs of ignoring sustainability include financial losses from disasters and inefficiencies.
  - A. In which climate-related events drive massive economic damage.
    1. A 2024 study by Hunjra, Bouri, Azam, and Dai in Research in International Business and Finance found that neglecting sustainability in developing economies with parallels in the US leads to higher carbon emissions and economic degradation.
    2. Particularly when growth ignores environmental factors, the US GAO's 2024 Climate Economic Impacts report estimated that \$150 billion in damages incurred from 2024 events, including \$45 billion from Southeast hurricanes, directly hitting local economies.
  - B. Resource mismanagement increases long-term costs as well.
    1. Hunjra et al. (2024) emphasize that abundant resources without sustainability lead to amplified degradation and costs.
    2. NOAA's 2025 report cites \$80 billion in US coastal infrastructure losses from sea-level rise, with Florida alone facing \$25 billion in property damages.

Transition: Beyond the environment and economy, ignoring sustainability has profound social repercussions.

- III. Social costs manifest as health burdens, inequalities, and cultural disruptions.
  - A. Health impacts from pollution strain communities.
    1. Goutte and Sanin's 2024 editorial in Development and Sustainability in Economics and Finance notes that neglecting sustainability exacerbates social risks like income inequality and health disparities in a changing climate.
    2. Likewise, CDC's 2024 Environmental Health Costs data show \$820 billion in US healthcare costs, with Chicago incurring \$15 billion for heat-related illnesses.
  - B. Broader inequities and cultural losses arise.
    1. Raihan's 2024 review in Innovation and Green Development highlights how digital divides from unsustainable tech growth to widening social gaps, affecting access to education and healthcare.

2. While UN SDG reports (2024-2025) link ignoring sustainability to rising hunger and inequalities, disrupting cultural practices tied to land and food security in local US indigenous communities.

Transition (Signal): In summary, these costs paint a clear picture of the long-term implications for our world.

### Conclusion

(Review) Today, I have covered the environmental, economic, and social costs of ignoring sustainability, drawing from recent research and local US examples.

(Clincher) As we reflect on broken promises of the past, consider how these ongoing costs from polluted air in our cities to billions in disaster recovery underscore the interconnectedness of our actions and the world around us.

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October 5, 2025

An Artificial Commerce  
Maximiliano Garcia  
University of Arkansas  
SPCH 10003-058 - PUBLIC SPEAKING  
Professor Jerilyn Kennemer  
5 October 2025

### **An Artificial Commerce**

Specific Purpose: As a result of my speech, my audience will understand the business of Rezolve AI and the story behind its leading products.

Central Idea: Rezolve AI, founded on proprietary AI technology for retail, has grown into a leader in conversational commerce solutions with strategic partnerships and is positioned for significant expansion in the e-commerce space that the general public has to look out for.

## **Introduction**

(Attention Grabber) Imagine scrolling through your favorite online store late at night, chatting with someone that not only understands your vague description of a product but instantly recommends perfect matches, handles your checkout seamlessly, and even suggests alternative payments without pause or glitch. That right there is the future of shopping, powered by companies like Rezolve AI which we will be diving into right away. Note that while AI is booming, some have been comparing it to the dot-com bubble of the early 2000s where hype outpaced reality leading to crashes. What I will be sharing with you all today is purely informative and not financial advice, so while what I have to say will come off as a stock pitch, just keep in mind that the rise of artificial intelligence could always end up dipping.

(Reason to listen) Even with all the staking, deals, and investing, we live in a world where e-commerce is exploding, with online sales projected to hit trillions globally, understanding innovative AI companies like this can give us insight into how shopping and business are evolving right now.

(Credibility) And as someone fascinated by AI's role in everyday tech and with experience researching emerging companies, (Preview) I will be discussing the structure of Rezolve AI as a company, its leading products like the Brain Suite, and its trust through key partnerships.

(Transition) So what exactly is Rezolve AI?

## **Body**

- I. Founded in 2016, Rezolve AI has evolved into a Nasdaq-listed leader in AI-powered retail solutions, focusing on conversational commerce.
  - A. According to the company's official about page, Rezolve AI was established by Daniel M. Wagner, a serial entrepreneur who previously founded MAID in 1984, which became one of the first online information services and went public on Nasdaq (Rezolve AI, n.d.). Wagner started Rezolve to address gaps in digital retail using AI, right.
  - B. So the company, formerly known as Actionable Science, rebranded and went public on Nasdaq under ticker RZLV in recent years, making it one of the first pure-play AI firms focused on e-commerce. Key milestones include developing a proprietary Large Language Model trained specifically on retail data and acquiring something called ViSenze in August of this year to enhance visual search capabilities.
  - C. Rezolve's structure emphasizes in-house innovation with a global leadership team, including CTO Dr. Salman Ahmad for tech development and Chief Revenue Officer Roland Gossage for sales growth. This setup supports efficient scaling, as highlighted in a News Bites newsletter article, where CEO Wagner notes their owned AI tech avoids common pitfalls like high costs seen in other firms during the \$375 billion AI race (Rezolve AI Stands Out, 2025).

Transition: Now that we know about the company's foundation, let's explore the products driving its success.

- II. Rezolve AI's Brain Suite is a rather effective AI toolset for enhancing the e-commerce experience.
  - A. The Brain Suite is a collection of AI-powered platforms, including Brain Commerce for conversational shopping and Brain Checkout for seamless transactions. It features tools like Visual Search, which lets users find products via images and conversational AI that handles real-time chats for recommendations. Users interact by simply describing needs, and the AI processes it end-to-end, from discovery to payment, even integrating options like cryptocurrency via partners. Pretty crazy digital stuff.
    - 1. The goal there is to boost engagement, reduce cart abandonment, and personalize shopping, which studies show can increase sales by optimizing customer journeys.
    - 2. Personalization through AI is key in e-commerce, as it improves decision-making and efficiency.
  - B. A bibliometric study on AI in e-commerce from the Journal of Open Innovation: Technology, Market, and Complexity explains that such technologies enhance recommendation systems, fraud detection, and inventory management, leading to better operational outcomes (Di Vaio et al., 2022).
    - 1. For Rezolve, this translates to zero "hallucinations" you notice in free chat service AIs like ChatGPT in their LLM, meaning accurate responses without errors are common in generic AI.
    - 2. This reduces overhead and improves metrics like average order value.
  - C. It is worth noting that while AI adoption in e-commerce is growing, challenges like data privacy and integration costs exist in small-scale studies.
    - 1. Rezolve's tools are designed for retail-specific use, not general applications, to avoid misuse.
    - 2. Therefore they should be implemented with proper governance to ensure ethical scaling.
  - D. So overall, the Brain Suite positions Rezolve as a useful innovator in turning AI into practical commerce tools.

Transition: With strong products in place, Rezolve AI's reputation is bolstered by high-profile partnerships as well.

- III. It is these strategic alliances with tech giants that demonstrate trust in Rezolve's solutions at the enterprise level and fuel its growth.
  - A. Key partnerships include Microsoft and Google for AI development and deployment, as well as a cryptocurrency Tether for regulated payments and wallet infrastructure. Pretty wild stuff, huh?

- B. There was a press release on Rezolve's investor site detailing how these collaborations turn AI promise into profit, with integrations that support global expansion and features like Brain Commerce (Rezolve Ai Turns AI Promise, 2025).
  - 1. The Microsoft partnership aids in cutting-edge AI for conversational retail, while Google Cloud enhances scalability for e-commerce platforms.
  - 2. These ties align with Rezolve's mission, accelerating holistic digital experiences for retailers.
- C. Rezolve has over a dozen major alliances and expects annual recurring revenue to exceed \$150 million by end-2025, up from \$6.32 million in the first half.
  - 1. This shows confidence from industry leaders, as top firms choose Rezolve for reliable AI in high-stakes commerce.
  - 2. Such partnerships also raise awareness and credibility, positioning Rezolve among trusted players in the AI space.

Transition: With partnerships paving the way, Rezolve AI seems set for continued innovation but whether it will last for the long run is in the air and can get into further speculative territory.

### **Conclusion**

(Signal) Today, we have covered the backstory of Rezolve AI, how its Brain Suite drives e-commerce efficiency, and the partnerships that build its trust in the industry. From humble beginnings in 2016, as far as the 80s, to Nasdaq listing and bold revenue goals, Rezolve exemplifies AI's role in modern retail.

(Tie to intro) So, the next time you find yourself frustrated with clunky online shopping, remember that there are companies like Rezolve trying to make that process more efficient and revolutionary. And remember, since it is in the AI bubble similar to dot.com, that hype could pop. Thank you and take care.

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September 28, 2025

# Diamond Drive: Currently A business idea

BY: MAXIMILIANO GARCIA

## Overview

### 1. Project background and description

Have you ever woken up 40 minutes away from class and dreaded the highway, traffic, and the gas money? Now you don't have to deal with Diamond Drive! A transportation and connection service powered exclusively by university students, designed to make getting around easier, cheaper, and more social.

With Diamond Drive, you can:

- Carpool with classmates headed in the same direction whether it's to campus for classes, events, or even just a food run.
- Sync your schedule so the app pairs you up with other diggers nearby who share a similar routine, making ride sharing more convenient than ever.
- Build your "Mining Crew" to ride with more than just two to do excavations together in the same area such as studying, hopping parties, enjoying a local live show, screening watch party, attending downtown city events, shopping together, eating out at the same place of craving, and more of your favorite activities!
- Earn "Reward Gems" each time you give a ride, and trade them in for discounts at local businesses in Northwest Arkansas. What a gold rush!
- Even go beyond cars! Run, bike, skate, scooter together when that kind of material fits more.

The best part? It's completely free to use. You can opt for a low-cost subscription to remove ads, but the core service and features are always accessible. Diamond Drive is not just about rides, it is about creating community, extracting memories, saving you money, and making student life richer.

Diamond Drive: Ride Together. Shine Together.

Memorize: Waking Up, Student Power, Carpool, Schedule Sync, Mining Reward Gems, Different Materials, Free to Use, Make Life Richer, and the Tagline.

### 2. Project scope

The scope of the project includes the development of a robust trading platform, integration with existing financial systems, and the implementation of machine learning models for predictive analytics. The project will also focus on ensuring compliance with regulatory requirements and enhancing data security.

### 3. High-level requirements

The new system must include the following:

- Ability to allow both internal and external users to access the application without downloading any software
- Ability to interface with the existing data warehouse application
- Ability to incorporate automated routing and notifications based on business rules

#### **4. Deliverables**

The project will deliver a fully functional trading platform, comprehensive user documentation, training materials for staff, and a detailed report on the project's impact on financial operations.

#### **5. Affected parties**

The project will affect the finance department, IT department, and external stakeholders such as investors and regulatory bodies.

#### **6. Affected business processes or systems**

The implementation of the new system will impact current trading processes, risk management protocols, and data analysis workflows.

#### **7. Specific exclusions from scope**

The project will not include the development of new financial products or services. It will also exclude any changes to existing investment strategies.

#### **8. Implementation plan**

The implementation plan will involve several phases, including initial research and development, system integration, testing, and deployment. Each phase will be carefully monitored to ensure timely completion and adherence to project goals.

#### **9. High-level timeline/schedule**

- *Research and development: April - June*
- *System integration: July - August*
- *Testing: September - October*
- *Deployment: November - December*

### **Approval and Authority to Proceed**

We approve the project as described above and authorize the team to proceed.

Name	Title	Date
Natsuki Ito	Project manager	April 5
Reed Flores	Project manager	April 5
Luca Richter	Project manager	April 5

August 28, 2025

University of Arkansas McMillon Innovation Studio - Speed Interviewing Kickoff event  
Group #1, which means your interview session will run from 6:15 – 8 PM.

## Introductions

Hello, my name is Maximiliano Garcia. I am a sophomore at the University of Arkansas with a technical IT diploma from Northwest Technical Institute and CompTIA TestOut Networking and PC Pro Competency Certificates. I have also attained an online certificate of completion in PMI's Project Management Professional course, which I would like to utilize in OEI's McMillon Innovation Studio program which I understand branches off to design and products teams. I am looking for more experience so I can one day use what I learned here to create a fintech business product/service that utilizes blockchain to create an efficient multi-investment/currency exchange platform. I have also looked into Pathfinders and the Business Incubator programs.

I am currently employed by my university as an IT Asset Management Assistant, taking care of the verification, tagging, delivery, and tracking processes of university-procured devices and technology. I am also quite involved in Registered Student Organizations like McMillion as of late, the Investment Club, Association for Information Systems, Association for Computing Machinery, and CyberHogs Cybersecurity Club. I have experience successfully lead a complex end-to-end information systems upgrade implementation project management plan for a simulated business and volunteered over 150 hours at Northwest Technical Institute in the past, cleaning and reorganizing labs, classrooms, and offices from two different locations, redesigning server rebuild layouts, doing asset inventory tagging IoT devices with Excel, served as a guide and presenter for high school visitors during NWTI's Open House and NWABuild Career showcase.

(And did more physically demanding work such as running network cabling in occupied ceilings to support departmental transitions, recycled hard drives, deploying IP surveillance, intercom, and phone systems.)

I am an interdisciplinary and versatile scholar with an ambitious experience in theory and real-world networking and business topics. And I would be grateful as a candidate to be considered for this opportunity McMillon.

- What is your idea of an ideal candidate for this position?
- What tasks would someone in that role be expected to handle day to day?

## Problem-solving Inquiries from Email

<p>Community Clinic: How might we provide better whole-health care to our patients?</p> <p>UAMS: How might we provide better healthcare solutions for JofA students in after-hours/weekends?</p>	<p>propose using a secure authenticated unified portal and care-coordination platform that ties data, telehealth, appointment scheduling, reported outcomes, and referrals.</p> <p>Similar to what Mercy already does but more informative and user friendly for say worried, older patients.</p>
<p>Amazeum</p> <p>1: How might we uncover what makes dining with kids stressful—and reimagine a food experience that feels easy, welcoming, and aligned with how families actually eat and move through the museum?</p> <p>2: How might we help more families discover and get excited about Amazeen birthday parties—so they see them as a must-do experience worth booking?</p>	<p>propose a mobile web ordering application with kid-friendly UI, real-time seating availability, dietary filters, and notifications to ensure when orders are ready.</p> <p>This application could also expand with other features like bookings to make event and party availability or planning easier, even virtual tours.</p>
<p>Nestle: How might we help product managers at Nestle identify cultural trends quickly so that they can create meaningful products for the end consumer?</p>	<p>propose an analytics platform that pulls from social media, news APIs, and consumer forums to deliver an interactive dashboard for product managers to obtain insights more efficiently.</p>
<p>Arvest: How might we establish ourselves as the leading financial partner for established nonprofits by delivering solutions that drive long-term impact and mission success—deepening Arvest's commitment to community relationships?</p>	<p>propose a nonprofit portal consolidating cash-flow forecasting, grant-management, impact dashboards, plus advisory chat. Not to mention implementation of AI in their systems like I see Upstart doing with their loan services to obtain more clients.</p>
<p>Crystal Bridges: How can Crystal Bridges and the Momentary increase school visit engagement on-site at the museum?</p>	<p>propose classroom management portal workshops which could translate with badge rewards similar to what Duolingo does to get more user engagement.</p> <p>Crystal Bridges had an event I went to when I was younger where if you found certain paints and solved clues you would receive a prize.</p>
<p>Costa: How might we reduce the administrative workload on our business management team—potentially through AI and automation—so they can save time and focus on strategic client engagement?</p>	<p>propose using AI-powered virtual assistants or bots for expense reports, client-report drafting, and calendar coordination at the very least. I believe it should be used as a tool, but could be branched out in the future to aid in supporting business management in their tasks.</p>
<p>Canopy: How might we equip Canopy NWA staff with trauma-informed practices that reflect the lived experiences of refugees and immigrants, particularly those affected by war, displacement, and family separation?</p>	<p>propose a learning management system with interactive modules, real world scenarios, multilingual resources, and discussion forums to obtain more input and ideas.</p>
<p>Sam's Club: How might we better engage members in the Sam's Club app?</p>	<p>propose making their products or applications more personalized with discovery feeds, algorithmic gamification or rewards for scanning products, and location-based push notifications similar to what Walmart have been doing lately. Both are rather connected regardless.</p>
<p>IVSN: How might we increase customer loyalty?</p>	<p>propose creating a loyalty program platform with tiered rewards, personalized offers via mobile apps, and community event integration (like what McDonald's does or various local businesses on Meta Facebook/Instagram).</p>
<p>Walmart: How might we simplify and modernize the preschool mini-shopping experience at Walmart to influence purchase/basket size?</p>	<p>propose creating a category or preschool hub for [preschooler] essentials available in their website shopping (app) or in person in the shelves with labels for before preschool begins with kits, recommendations, scanning, and marketing/subscription options.</p>

More information about the above:

# Portfolio Approach: IT Project Management for “How Might We” Challenges

Below is a concise, replicable IT project-management roadmap applied to each “How might we” question. For every initiative you’ll find:

- Objective
- Proposed IT solution
- High-level phases and key milestones

## 1. Health & Whole-Person Care

### 1.1 Community Clinic

**Objective:** Deliver integrated whole-health services—medical, behavioral, social—to boost outcomes and patient satisfaction.

**Proposed IT Solution:** • A unified patient portal & care-coordination platform that ties EHR data, telehealth, appointment scheduling, patient-reported outcomes (PROs), and social-needs referrals.

#### High-Level Phases:

1. Discovery & Requirements (4 weeks)
  - a. Workshop with clinicians, social workers, front desk
  - b. Map current workflows & data sources
2. Vendor Selection & Architecture (6 weeks)
  - a. Evaluate off-the-shelf vs. custom build
  - b. Finalize security, scalability, integration patterns
3. Build & Integrations (12 weeks)
  - a. Connect EHR, telehealth module, PRO survey engine
  - b. Develop patient mobile/web portal
4. Pilot & Training (8 weeks)
  - a. Roll out to 1–2 care teams
  - b. Train staff; gather feedback
5. Full Launch & Continuous Improvement (Ongoing)
  - a. Monitor KPIs (no-show rate, patient-satisfaction)
  - b. Iterate quarterly

## 1.2 UAMS After-Hours Care for UofA Students

**Objective:** Extend accessible healthcare into evenings/weekends for students.

**Proposed IT Solution:** • On-demand telehealth and e-visit platform integrated with campus health records and student ID authentication.

**High-Level Phases:**

1. Scope & Compliance Review (3 weeks)
2. User Experience & Student Focus Groups (4 weeks)
3. Platform Configuration & Single-Sign-On Setup (6 weeks)
4. Beta Launch (4 weeks)
5. Full Deployment & Analytics Dashboards (6 weeks)

## 2. Museums & Family Experiences

### 2.1 Amazeum #1: Family Dining Redesign

**Objective:** Make dining with kids stress-free, delightful, and intuitive.

**Proposed IT Solution:** • Mobile/web ordering with kid-friendly UI, real-time seating availability, dietary filters, plus wayfinding and push-notifications when orders are ready.

**High-Level Phases:**

1. Ethnographic Research with Families (4 weeks)
2. Prototype UI Flows & Usability Testing (6 weeks)
3. POS & Kitchen Display Integration (8 weeks)
4. Live Pilot & Feedback Loop (6 weeks)
5. Rollout & A/B Menu Experiments (Ongoing)

### 2.2 Crystal Bridges & The Momentary: Boost School Visits

**Objective:** Increase day-of engagement for school groups onsite.

**Proposed IT Solution:** • Classroom management portal plus a mobile app with interactive scavenger hunts, digital “class badges,” and teacher dashboards.

**High-Level Phases:**

1. Teacher & Student Workshops (3 weeks)
2. Feature Definition & MVP Planning (2 weeks)
3. App Development & Content Authoring (10 weeks)

4. Field Test with 3 Schools (6 weeks)
5. Outreach & Iterative Enhancements (Ongoing)

## 2.3 Amazeum #2: Birthday-Party Booking

**Objective:** Drive bookings by making parties irresistibly easy to discover and reserve.

**Proposed IT Solution:** • Dedicated microsite with dynamic availability calendar, virtual tour (360°), upsell modules, and CRM integration for email/SMS reminders.

**High-Level Phases:**

1. Customer Journey Mapping (2 weeks)
2. Microsite & Virtual Tour Build (8 weeks)
3. CRM & Payment Gateway Integration (4 weeks)
4. Launch + Promotion (6 weeks)
5. Track Conversion & Optimize CTAs (Ongoing)

## 3. Consumer-Product & Corporate Insights

### 3.1 Nestlé: Rapid Cultural-Trend Spotting

**Objective:** Arm product managers with bite-size, actionable cultural insights.

**Proposed IT Solution:** • AI/ML-driven trend analytics platform pulling from social media, news APIs, and consumer forums; delivered via an interactive dashboard with alerting.

**High-Level Phases:**

1. Data-Source Inventory & Licensing (4 weeks)
2. ML Model Training & Validation (8 weeks)
3. Dashboard Design & Alerts Engine (6 weeks)
4. Pilot with 2 Product Teams (6 weeks)
5. Scale & Governance Processes (Ongoing)

### 3.2 LIVSN: Increasing Customer Loyalty

**Objective:** Create stickiness through rewards, community, and personalization.

**Proposed IT Solution:** • Loyalty-program platform with tiered rewards, personalized offers via mobile app, plus community forums/events integration.

### **High-Level Phases:**

1. Loyalty Strategy Workshops (3 weeks)
2. Requirements & Platform Selection (4 weeks)
3. Integration to CRM, POS, Mobile App (10 weeks)
4. Soft Launch + Early-Adopter Cohort (6 weeks)
5. Full Launch & Engagement Analytics (Ongoing)

## **4. Nonprofit & Financial Services**

### **4.1 Arvest: Financial Partner for Nonprofits**

**Objective:** Become the go-to bank by offering tailored, impact-driving solutions.

**Proposed IT Solution:** • Nonprofit portal consolidating cash-flow forecasting, grant-management, impact dashboards, plus advisory chat.

### **High-Level Phases:**

1. Stakeholder Alignment & Needs Assessment (4 weeks)
2. Portal Architecture & Vendor RFP (6 weeks)
3. Dev & API Integrations (12 weeks)
4. Pilot with 5 Nonprofits (8 weeks)
5. Expand & Bundle Advisory Services (Ongoing)

### **4.2 Canopy NWA: Trauma-Informed Staff Tools**

**Objective:** Equip Canopy staff with culturally resonant, trauma-informed practices.

**Proposed IT Solution:** • Learning management system (LMS) with interactive modules, real-life scenarios, multilingual resources, and discussion forums.

### **High-Level Phases:**

1. Content Curation & SME Interviews (6 weeks)
2. LMS Selection & Customization (6 weeks)
3. Module Development & Localization (10 weeks)
4. Staff Onboarding & Feedback (4 weeks)
5. Ongoing Content Refresh (Quarterly)

## **5. Retail & Automation**

### **5.1 Acosta: Reduce Business-Mgmt Admin Load**

**Objective:** Free up account teams for strategic work by automating routine tasks.

**Proposed IT Solution:** • RPA bots and AI-powered virtual assistant for expense reports, client-report drafting, and calendar coordination.

#### High-Level Phases:

1. Process Mapping & Use-Case Prioritization (3 weeks)
2. RPA/AI Vendor Proof-of-Concepts (6 weeks)
3. Bot Development & Training (8 weeks)
4. User Acceptance & Hand-over (4 weeks)
5. Scale & Governance (Ongoing)

## 5.2 Sam's Club App Engagement

**Objective:** Boost daily active users, time-in-app, and basket size.

**Proposed IT Solution:** • App refresh with personalized discovery feeds, gamification (rewards for scanning products), and location-based push notifications.

#### High-Level Phases:

1. Analytics Deep Dive & Persona Workshops (3 weeks)
2. UX/UI Redesign & Prototype (6 weeks)
3. Dev + A/B Testing Infrastructure (8 weeks)
4. Staged Rollout with KPIs (6 weeks)
5. Continuous Tuning & New Feature Sprints (Ongoing)

## 5.3 Walmart: Preschool Omni-Shopping Simplification

**Objective:** Make buying preschool essentials seamless across digital & in-store, lifting basket size.

**Proposed IT Solution:** • “Preschool Hub” within Walmart app/website featuring curated kits, predictive recommendations, in-aisle scanning, and subscription options.

#### High-Level Phases:

1. Curated Kit Design & Assortment Rules (4 weeks)
2. Front-End “Hub” Development (6 weeks)
3. Recommendation Engine & Subscription Setup (8 weeks)
4. Pilot in Select Markets (6 weeks)
5. National Rollout & Upsell Campaigns (Ongoing)

Each initiative follows a standard IT-project playbook—starting with discovery, iterating prototypes, piloting with real users, then scaling—while embedding continuous measurement and improvement. This ensures on-time delivery, budget adherence, stakeholder buy-in, and, most importantly, solutions that solve the core “How might we” question for lasting impact.

December 3, 2023

## Pseudogenes: The Genes We Lost Along The Way

In a 1972 paper, geneticist Susumu Ohno, an early leader in the field of molecular evolution wrote: "The earth is strewn with fossil remains of extinct species; is it a wonder that our genome too is filled with the remains of extinct genes?"

- And while this was decades before we sequenced the human genome, Ohno was right.
- Buried inside your genome right now are molecular fossils - bits of DNA that are so broken that they no longer work.
  - One of these can be found on your 8th chromosome called GULOP and was importantly used by our early primate ancestors.
  - It gave them the ability to make their own vitamin C.
- all ended around 61 million years ago in the middle of the Paleocene Epoch, when something gene in the DNA of one of those early primates effectively died
  - it became a 'pseudogene,' a non-functional molecular fossil.
  - This was a key moment for our lineage.
- The more distant primate cousins on the other major branch of the family tree, like the lemurs, can still make their own vitamin C, like most other vertebrates.
  - Their branch split off from ours before GULOP became a pseudogene.
  - But ever since the death of GULOP, our side of the primate family tree - the tarsiers, monkeys, and apes - have had to get vitamin C from the food we eat, instead.
  - Without that vitamin in our diets, we risk suffering from diseases like scurvy.
- And GULOP isn't the only dead gene we carry with us. There are thousands of them, and we've only just begun to unravel their stories.

We're not just defined by the genes that we've gained over the course of our evolution, but also by the genes that we've lost along the way.

- Over 90% of our genome doesn't actually code for anything and embedded in all this non-coding DNA, like bones in rock, are fossilized pseudogenes
  - -- sequences that were once active, but are now basically dead, with a few rare exceptions.
  - We've now found around 20,000 of them in our genome, rivaling the number of genes we have that are still active!
- Pseudogenes, in many cases, are the result of ancient gene duplication events
  - which happens when a gene is duplicated into two identical daughter genes, and one copy dies, leaving one functional copy behind.
  - Others, like GULOP, are 'unitary' pseudogenes –
    - There was only one of them in the genome and when it died there was no back-up copy, so its function was lost.

So how do genes die?

- They die through mutations, which occur randomly in our DNA all the time.
  - They're normal and a source of new variation where the raw material is used for evolution.

- The mutations occasionally occur at particular spots in a gene that inactivate it, which prevents the instructions it carries from being translated into a protein.
  - that's what happened to GULOP, around 61 million years ago
  - A mutation inactivated it, turning off its ability to make an enzyme that's a key part of making vitamin C.
- Without that enzyme, our ancestors couldn't produce the vitamin.
  - And this is part of the bigger picture of how evolution works, too.
  - If a mutation that inactivates a gene reduces fitness, or the ability of an organism to survive and reproduce, natural selection will get rid of it by selecting against the individuals that carry the mutation.
- This process keeps useful genes free of mutations.
  - But if the loss of the gene doesn't reduce fitness, then this mutation can spread throughout a population.
    - This can happen either through a random process called genetic drift, or through natural selection.
    - Eventually, the mutated gene can become 'fixed,' meaning it's the only version of that gene left in a species' gene pool.
- In the case of GULOP, we don't know if its death increased fitness, but it probably didn't reduce it.
  - When it became inactive, our early ancestors were likely already getting a lot of vitamin C from eating fruit.
  - This resource was becoming more abundant as tropical forests expanded throughout the Paleocene and fruiting plants continued to diversify.
- It's been suggested that the loss of their vitamin C gene wasn't a big deal for those primates, because they could get it easily from the environment instead.

So gene death isn't necessarily bad.

- It creates opportunities for evolution and can even be good, depending on the environmental and ecological context in which it happens.
- GULOP definitely wasn't our last broken gene.

About 44 million years later, in the early Miocene Epoch, our hominoid ape ancestors lost another gene: UoX

- This gene coded for a protein called uricase - an ancient enzyme produced by organisms from bacteria to mammals.
  - Apes like us are the odd exception.
- The function of the uricase enzyme is to break down uric acid, a waste product of metabolism.
- When UoX became a pseudogene - around 17 million years ago by molecular dating estimates – apes lost this enzyme.
- Now, all that's left of UoX is its molecular fossil, which is entombed in our 1st chromosome.
  - And, like GULOP, its loss has some consequences for us even today.
- For example, humans and the other living apes all have high uric acid levels in our blood.

- They're between 3 and 10 times higher than other mammals, who still have functioning uricases and can break the acid down effectively.
  - Which means that we can get diseases like gout - when uric acid builds up in our blood, forms crystals, gets deposited in our joints, and causes painful swellings.

So how and why did we lose such a useful gene?

- In 2014 a team of researchers studied ancient mammalian uricase enzymes using a technique called 'ancestral sequence reconstruction'.
  - By comparing both the gene and protein sequences of uricase enzymes found in mammals living today, they were able to reverse-engineer what the sequences of ancient uricase genes and proteins would have been at different points in the past.
- Then they physically resurrected these ancient uricase proteins by building them in the lab through a series of experiments on the resurrected proteins to see if they worked.
  - they found that the oldest uricase protein they'd resurrected - dating back 90 million years - was really good at processing uric acid.
- But uricases from around 40 million years ago, in the mid-Eocene Epoch, had already picked up mutations that made them less efficient.
  - And over the next 20 million years, primate uricases from the Oligocene and early Miocene Epochs were even less efficient.
- The UoX gene becoming inactivated around 17 million years ago was only the final step in a series of mutations stretching back tens of millions of years.

Why the uricase gradually stopped working over time is still mysterious.

- There is evidence to suggest that the final stages of UoX's decline may have given our ancestors an evolutionary advantage.
- UoX's death happened at a time when the Earth's climate was cooling.
- For our fruit-eating ape ancestors, this was a bad thing and meant that fruit was no longer available year-round
  - sure, there'd be plenty during summer, but very little in winter.

Enter uric acid.

- One of the few advantages of having a lot of uric acid is that it stimulates the creation and accumulation of fat from fructose - a sugar commonly found in fruit.
- It's been hypothesized that having less active, and eventually inactive, uricase enzymes, made our ape ancestors better able to store fat during times when fruit was abundant, and to survive off those fat stores during leaner times.
- To test this idea, the researchers inserted the resurrected ancient uricases into human cells in the lab.
  - As expected, they found when the cells were given fructose, they were worse at turning the sugar into fat, compared to normal human cells with no working uricases.
- So there's evidence that the loss of the UoX gene and the enzyme it coded for may have given our lineage a survival advantage.

Sometimes in genetics, less is more.

- If you've noticed that all of the genes we've talked about so far are linked to food, well, there's a good reason for that.
- Food availability is one of the most important and rapidly changing pressures that living things face.
- So shifts in our diets have played a huge part in molding our genomes.

We see this again in our taste receptors - a dynamic group of genes in vertebrates that allow us to perceive different tastes.

- Their birth and death is tightly linked to changes in the diet of a species.
- In the genomes of carnivores with all-meat diets for example, we often see that sweet taste receptor genes have died, becoming pseudogenes.
- As omnivores, we humans have a relatively well-rounded set of taste receptor genes.
  - We can pick up on all of the major taste groups pretty well - sweet, sour, umami, salt, and bitter.
  - And it's in that group of bitter taste receptors that we find some of our most recent pseudogenes.

Right now, our DNA contains 25 working bitter taste receptor genes.

- Each of them is thought to be associated with tasting specific families of compounds.
- And for millions of years, they've helped our ancestors tell which plants are good to eat, and which might be toxic.
- But we've also lost quite a few.
- We carry 11 dead bitter taste receptor pseudogenes.
  - And two of them died relatively recently in our evolution, sometime after our last common ancestor with chimpanzees and bonobos.
  - And we know that these two genes died before we split from the Neanderthals and Denisovans, around 500,000-600,000 years ago.
- Their genomes also contain the same two pseudogenes, with the exact same inactivating mutations.
  - So these genes very likely died in a common ancestor of ours, and their molecular fossils were inherited by all three groups.

So what happened to these two bitter taste receptors?

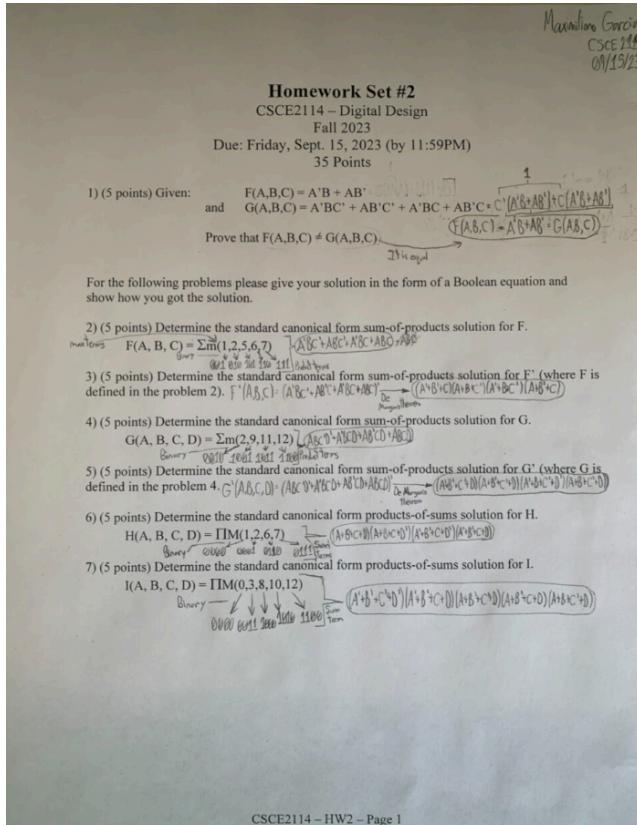
- Well, the last few million years of our evolution saw huge changes in our eating habits.
  - We started eating more meat and eventually learned to cook with fire, which often makes plant foods less toxic.
- Our cultural knowledge of food sources became more and more sophisticated, and we became able to transmit this information through language.
- And all of these changes might have meant that the ability to tell the difference between bitter plant compounds became less and less important as time went by.
  - When these two bitter taste receptor genes mutated and died, there wasn't enough evolutionary pressure to save them.

- And their pseudogenes became molecular fossils shared by our species and our closest cousins.

Evolutionary genomics is still a young science, and our understanding of the thousands of dead genes we carry with us will only grow with time.

- But it's already clear that the genome is more than just a recipe book for building an organism.
  - It's also a historical record, a molecular fossil bed filled with "extinct genes", preserving our evolutionary legacy in the form of the As, Ts, Cs, and Gs that make up our DNA.
- Our taste receptors have helped us humans out a lot over the years - like bitter helping us figure out the toxicity of plants, but what about umami and sour?
  - To find out, watch our episode, "How We Figured Out Fermentation".
  - to this month's Eontologists for staying active in the Eons genome : Sean Dennis, Jake Hart, Annie & Eric Higgins, John Davison Ng, and Patrick Seifert!
  - Become an Eonite at [patreon.com/eons](https://patreon.com/eons) to get fun perks like submitting a joke for us to read.
    - Like this one from Stephen O'Leary: "Fossilization is a Sediment-al Journey."
  - And as always thank you for joining me in the Konstantin Haase studio.
    - Subscribe at [youtube.com/eons](https://youtube.com/eons) for more evolutionary escapades.

September 7-28, 2023



## Digital Design Lab 1

CSCE 2114-001 (1239-THEUA-CSCE-2114-SECL009-4855)

Maximiliano Garcia

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09/07/23

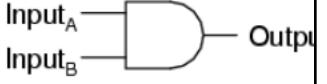
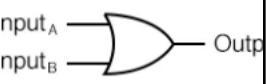
### Abstract

The work I performed in the laboratory began with learning the basics of how to run the Intel Quartus Prime software which is logic device design software with several tools for generating

programmable logic device (PLD) designs. PLDs are electronic components that can be configured to perform various functions, such as FPGAs, CPLDs, and ASICs, and aside from this Quartus can also enable analyses and syntheses of HDL designs. All while providing a comprehensive design and development environment for a graphical user like me to use the interface for creating solutions within the design development process. I can compile designs, perform timing analysis, examine RTL diagrams, simulate a design's reaction to different stimuli, and configure the target device with the programmer. Might I add Quartus Prime includes an implementation of VHDL and Verilog for hardware description, visual editing of logic circuits, and vector waveform simulation as well. All of which ended up being the main focus of this lab where I created a waveform simulation that matched the truth table for the 2-input AND and OR gates as well as output 1s rather than 0s for A, B, C, and D inputs within a certain nanosecond time frame.

## Introduction

After familiarizing and establishing what Quartus was, I could now get into what 2-input AND and OR gates are. Both are digital logic gates with the AND gate implementing logical conjunction and the OR gate implementing logical disjunction. The AND gate behaves according to its truth table where a high output (1) results only if all the inputs to the AND gates are high (1), if anything else the output would always be low (0). The OR gate behaves in accord with its own truth table as well where an input exerts a high output (1) if one or both the inputs to the gate are high (1). But if neither input is high, then a low output (0) results. Below is a chart visually showing how the two gates function and their differences.

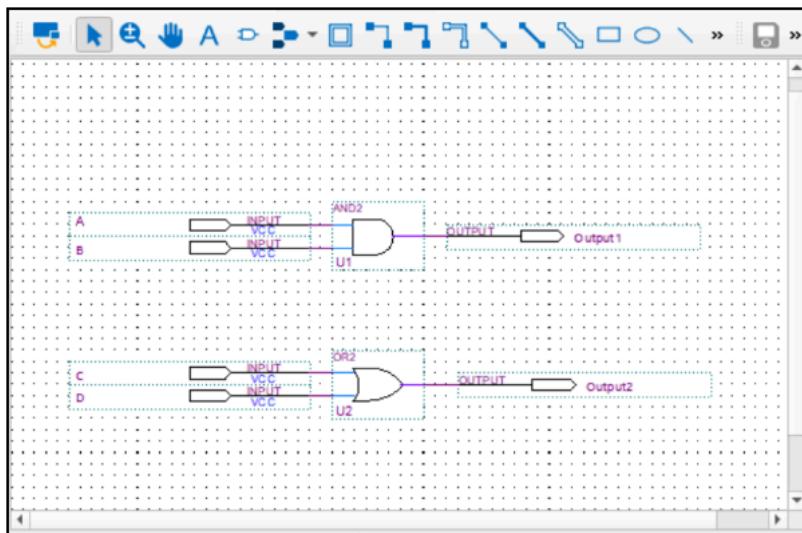
2-input AND gate	2-input OR gate																														
<p><i>2-input AND gate</i></p>  <table border="1"> <thead> <tr> <th>A</th> <th>B</th> <th>Output</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>0</td> <td>1</td> <td>0</td> </tr> <tr> <td>1</td> <td>0</td> <td>0</td> </tr> <tr> <td>1</td> <td>1</td> <td>1</td> </tr> </tbody> </table>	A	B	Output	0	0	0	0	1	0	1	0	0	1	1	1	<p><i>2 - input OR gate</i></p>  <table border="1"> <thead> <tr> <th>A</th> <th>B</th> <th>Output</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>0</td> <td>1</td> <td>1</td> </tr> <tr> <td>1</td> <td>0</td> <td>1</td> </tr> <tr> <td>1</td> <td>1</td> <td>1</td> </tr> </tbody> </table>	A	B	Output	0	0	0	0	1	1	1	0	1	1	1	1
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The purpose of all this background information being to set up for compiling in Quartus before compiling, schematics, and running a functional wavelength simulation to solve the lab assignment. The expectations being that the electrical signals in the digital electronic circuit going through the gates within a certain number of nanoseconds end up representing either a high voltage (1) as opposed to a low voltage (0). And in a way, given the truth tables, the signals are used to represent binary data where 1 typically signifies an active state or logic "true," and 0 signifies an inactive state or logic "false." So what I am expecting and being asked to gain is for all to be true.

## Results

Knowing this information, I could now begin compilation in Quartus Prime before drawing schematics and running a functional simulation by creating a working directory, making a “New Folder” called “Lab 1” (I believe), Click on File (upper left), and select New Project Wizard. After going through the “Introduction” window and selecting the folder I created with the name “Lab 1” as my working directory, I gave the same name to the Project and Design file before proceeding and selected Empty Project Type to design our circuit from scratch. I continued through the windows with no use of any template, file additions, connections to the FPGA board for Lab 1, or extra options for the EDA Tool Settings other than what is default. And finally creating the new project, I went to File > New > Block Diagram/Schematic File where an editor window opened, revealing a gate and wire icon on top of the Editor window. This took me to the Libraries where I could find all the Logic Gates, I/O pins, buffers, VCC, GND and other modules as well as be able to connect them with the wires.

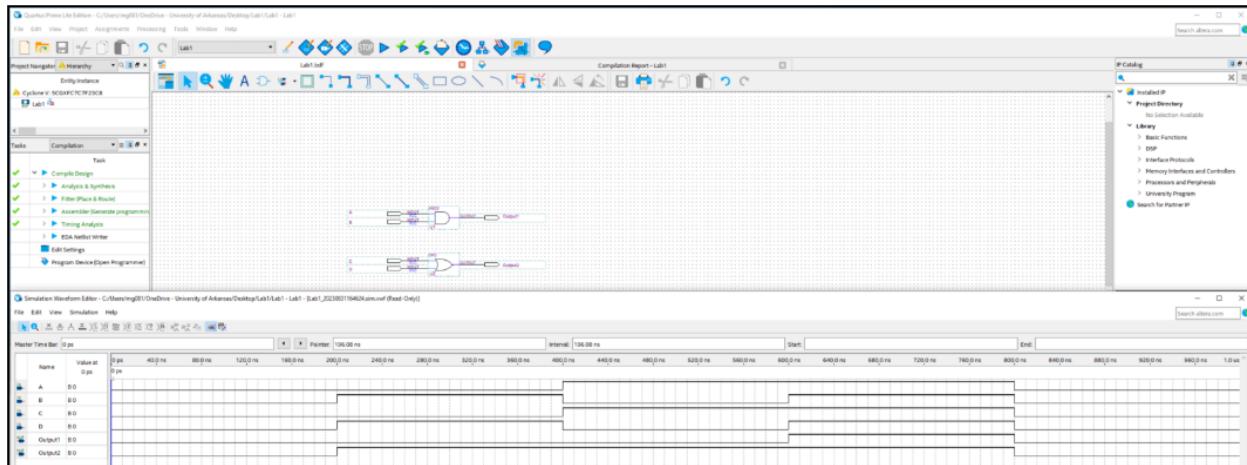
With the new Schematic File and tools we needed at hand I could now create a simple circuit schematic with a 2-input AND gate and 2-input OR gate. It is very much similar to how the picture below looks after applying the gates (symbol > primitives > logic > and2 / or2), changing the ‘inst’ of the two gates to Module names U1 for AND2 and U2 for OR2, and connecting the input and output pins (Symbol > pin > input / output) to the gates separately using the wires.



I saved this schematic with the same “Lab 1” name and after successfully compiling with no errors, I created a new vector simulation waveforms file (File à New à University Program VWF) after right clicking on the left panel and choosing Insert > Insert Node or Bus. I then went to Node Finder to select Pins in all from Filter from the new window, clicked the List button, and then selected all the nodes from the circuit by clicking on the ‘>>’ button. I then finally ended up in a window where I added all the inputs and outputs’ pins from the left panel to my waveform list and then went to the count value to change the Radix. I made sure to count every etc. of the pins as required for simulation and saved the waveform in my working directory with the name ‘Waveform.vwf’. Initially I made a mistake trying to run every single input combination as shown in the AND gate and OR gate chart below until my TA pointed out that I simply needed to get the electrical signals running through both the AND and OR gates’ A, B, C, and D inputs within a certain nanosecond range to all output 1s (high voltage) rather than 0s (low voltage). So that way it all ends up being true, in a way.

AND gate	OR gate:
0 -200ns : A=0; B=0;	0 -200ns : C=0; D=0;
200ns - 400ns : A=0; B=1;	200ns - 400ns : C=0; D=1;
400ns - 600ns : A=1; B=0;	400ns - 600ns : C=1; D=0;
600ns - 800ns : A=1; B=1;	400ns - 800 ns : C=1; D=1;

Since the simulation results ended up showing that the output of my design matched the truth table of the gates, the functional simulation that I ran after working on it for 2 hours turned out to be a success as shown in the screenshot below. I will create a table for as well going into what is going on in the simulation wavelength editor and what the change in the wavelengths mean to show that all is true and 1 from 600-800ns.



Name	Output in 0 - 200 Nanoseconds (ns)	Output in 200 - 400ns	Output in 400 - 600ns	Output in 600 - 800ns	Output in 800ns - 1 Millisecond (ms)
A	False / 0	False / 0	True / 1	True / 1	False / 0
B	False / 0	True / 1	False / 0	True / 1	False / 0
C	False / 0	False / 0	True / 1	True / 1	False / 0
D	False / 0	True / 1	False / 0	True / 1	False / 0
Output 1 / AND Gate	False / 0	False / 0	False / 0	True / 1	False / 0
Output 2 / OR Gate	False / 0	True / 1	True / 1	True / 1	False / 0

## Conclusion

In this lab, the primary objective was to understand and utilize the Intel Quartus Prime software to design a digital logic circuit involving 2-input AND and OR gates. These gates serve as fundamental components in digital electronics, and the goal was ultimately to create a functional simulation that matched their truth tables. The provided information in this lab report explains how Quartus Prime was used to compile designs, draw schematics, and run functional waveform simulations. With the expected outcome, again, being to ensure that electrical signals, representing binary data, correctly flowed through the gates and producing 1s (high voltage) in response to specific input combinations within a certain nanosecond time frame while also accounting for 0s (low voltage).

The implementation process began with creating a project in Quartus Prime and drawing a circuit schematic comprising 2-input AND and OR gates. After an amount of compilation, questions, and work, a waveform simulation was executed and took me about 2 hours total. Initially, there was an attempt to evaluate all possible input combinations, which was an error on my part as the TA, Zachary, put me in the right direction to focus on the specific nanosecond range. A range within the wavelength editor where all outputs should be 1s while also acknowledging the 0s with both aligning with the gates' truth tables. The results indicated that the designed circuit indeed matched the expected and actual behavior of the AND and OR gates, confirming the success of the functional simulation.

Looking ahead, this project does open doors to various opportunities for further exploration. Such work could be complex logic gates and practical applications of the digital circuits like designing and simulating basic digital systems or even implementing small-scale hardware projects. But I am sure we will get there in time probably, but this first lab experience, despite being pretty difficult for, served as a foundation for understanding and teaching digital logic principles, and has me intrigued over what I will learn in the future and what other coursework and (hands-on) projects wait in front of me and the other students in the field of electrical engineering, computer engineering, or just computer science like me.

Overall, I was not very familiar with any of this material coming into the lab due to still processing the Chapter 2 notes, but I do believe the lab can be improved by fixing the instructions for this lab doc as the layout is not chronological. You have to jump from the steps of the compilation in Quartus Prime section (1<sup>st</sup> section) to the Lab problems section (3<sup>rd</sup> section) and back to the Simulation section (2<sup>nd</sup> section). But other than that, it was a very good and informative lab but an extension that could be added is to show us the hardware too rather than just the software on the lab computer.

## Digital Design Lab 2

CSCE 2114-001 (1239-THEUA-CSCE-2114-SECL009-4855)

Maximiliano Garcia

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09/21/23

## **Abstract**

One short paragraph of 6-10 sentences summarizing the work I performed for the laboratory and describing the results that you ended with.

The work I performed in the laboratory began with applying the basics learned from the first lab, which involved operating Intel Quartus Prime, a software for designing logic devices and generating programmable logic device (PLD) designs. PLDs are versatile electronic components that can be configured for various functions, including FPGAs, CPLDs, and ASICs, but aside from that Quartus also facilitates analyses and syntheses of hardware description language (HDL) designs and provides a comprehensive design and development environment for graphical users. Within this environment, I can compile designs, conduct timing analyses, examine RTL diagrams, simulate how a design reacts to different stimuli, and such. Notably, Quartus Prime also supports VHDL and Verilog for hardware description, visual editing of logic circuits, and vector waveform simulation which have been used in previous labs and will be implemented in this one.

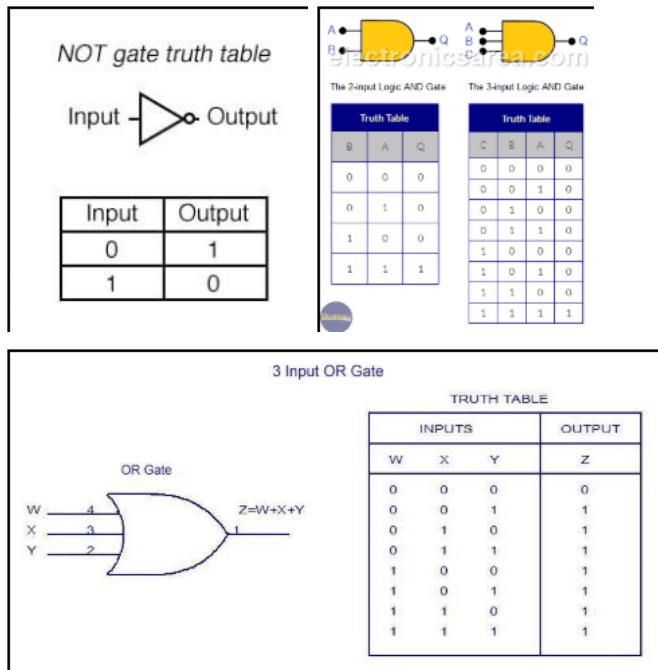
The main focus of this lab including the above information was to create a waveform simulation matching the truth table for 3 inputs, 3 NOT gates, 2 2-input AND gates, a 3-input AND gate, 3-input OR gate, and an output that saw 1s occurring at the end rather than 0s for A, B, and C inputs within a certain nanosecond time frame to be true. To elaborate more, I had to create a more complex schematic than the first lab for a Sum-of-Products implementation that derived a Boolean equation for F from the "little m" notation where a function F was provided. So the circuit schematic dynamic diagram to be created needed to be clean and easily readable to ensure that it could correctly function in Quartus' simulation. Additionally, the previously mentioned function F based on the provided "little m" notation defined as  $F(A, B, C) = \Sigma m(1, 2, 5, 7)$  had to be determined through its canonical form Sum-of-Products Boolean equation for F and applied with the instruction-provided truth table for F as well. And as part of the simulation process, I was needed to generate a waveform file with specific timing intervals and input values that were provided, create a lab report following the "Lab Report Format" while including keywords, and overall learn from the practical application of digital logic design from this lab to apply to the next.

## **Introduction**

1-2 paragraphs discussing any background information that's pertinent to the laboratory. Additionally, also describing the purpose of the laboratory and its expected results.

After recalling what was learned from the last lab while using Quartus, I could now get into what the 3 inputs, 3 NOT gates, 2 2-input AND gates, a 3-input AND gate, 3-input OR gate, and the output are within a logic circuit. The three inputs are the signals or data which enter the digital logic circuit which could be binary or multi-valued and serve as the starting point for any logical operation within the circuit. The three NOT gates are inverters, basic logic gates that perform the logical operation "NOT" on its input and in having a single input and a single output, it is the complement/opposite of its input (if input is 0 then the output is 1). The two 2-Input AND gates take two binary inputs and produce a binary output from performing a logical AND operation where two of these gates can be used to combine pairs of input signals where it would only be 1 only when both inputs are 1 otherwise, it is 0. A 3-Input AND Gate is similar to the 2-input AND gate, but performs the logical AND operation on three binary inputs to produce a binary output, so the output would only be 1 when all three inputs are 1, otherwise it would

be 0. A 3-Input OR Gate takes three binary inputs and produces a binary output from a logical OR operation that occurs on the three inputs, so the output is 1 if at least one of the three inputs is 1 otherwise, it is 0. Finally unto the output, this is the final result or signal produced by the circuit which is typically based on the logical operations applied to the input signals using various gates and can represent the outcome of a specific logical condition or operation. Below are truth tables for visually showing how the gates mentioned function rather than just telling.



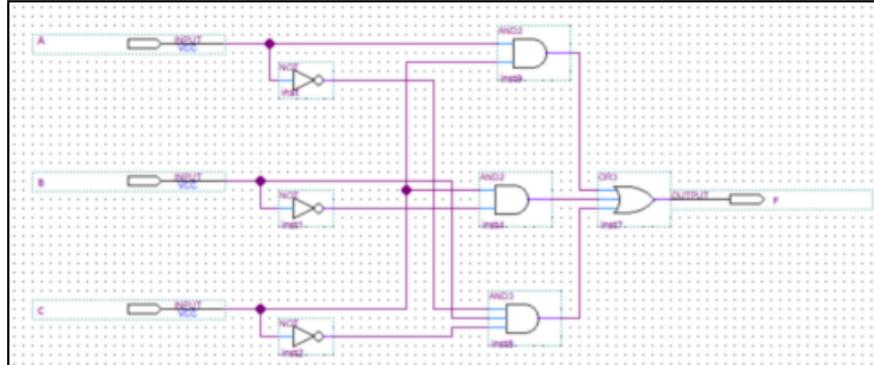
Upon having the gates and such established to understand the behavior and function of the circuit, we can now dive into the purpose of all this background information being to set up Quartus for compiling, schematics, and running a functional wavelength simulation to solve the lab assignment. The expectations being that the electrical signals in the digital electronic circuit going through the gates within a certain number of nanoseconds end up representing either a high voltage (1) as true within the lowest nanosecond time frame as opposed to a low voltage (0) as false.

### Design and Implementation

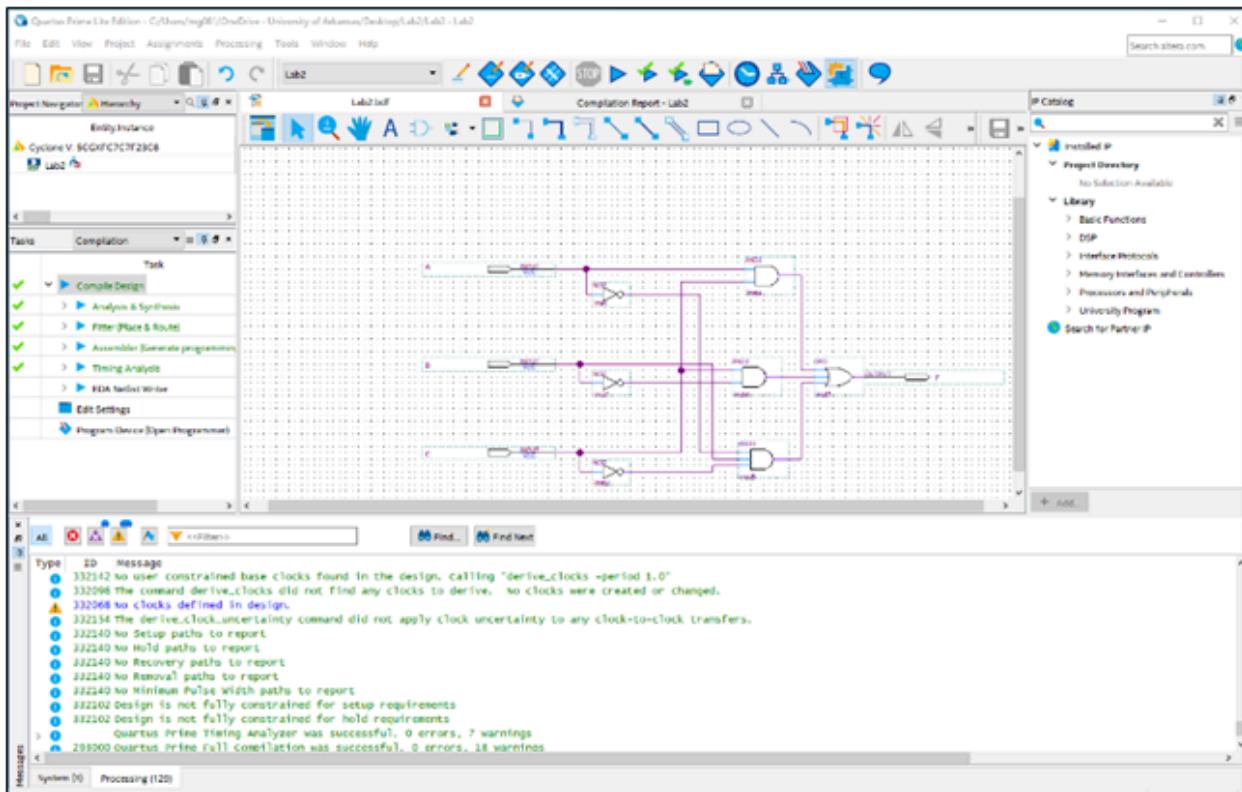
2-3 paragraphs describing the system that was designed and implemented, with exact details as to what was built as part of the laboratory, how it was built, and why it was built. Block diagrams, figures, source code, and screenshots are all highly effective and concise ways of communicating your design and implementation too.

Knowing this information, I could now begin compilation in Quartus Prime before drawing schematics and running a functional simulation by creating a working directory, making a “New Folder” called “Lab 2”, Click on File (upper left), and select New Project Wizard. After going through the “Introduction” window and selecting the folder I created with the name “Lab 1” as my working directory, I gave the same name to the Project and Design file before selecting Empty Project Type to design our circuit from scratch. I continued through the windows with no use of any template, file additions, connections to the FPGA board for Lab 2, or extra options for the EDA Tool Settings other than simply accepting the default settings. And upon creating this new project, I went to File > New > Block

Diagram/Schematic File where an editor window opened, revealing a gate and wire icon on top of the Editor window. This took me to the Libraries where I could find all the Logic Gates, I/O pins, buffers, VCC, GND and other modules to connect them with the wires.



With the new Schematic File and tools we needed at hand I could now create a complex circuit schematic as shown above with three inputs (named A, B, and C), three NOT gates (named inst, inst1, and inst2), two 2-input AND gates (preferably the first one would have been inst3 but inst4 made it), a 3-input AND gate (preferably would have been named inst5), 3-input OR gate (preferably would have been named inst6), and an output (named F). An amount of work had to be done like applying after applying the gates, changing the names a bit (could have used work), and connecting everything together correctly. One of the errors I had to troubleshoot through and fix were where a dot would appear where I didn't want it to. This meant that the wires were connected there and this would sometimes happen at the end near the pins where there isn't supposed to be that kind of connection so it did take some time to remove before the compilation could be successful.



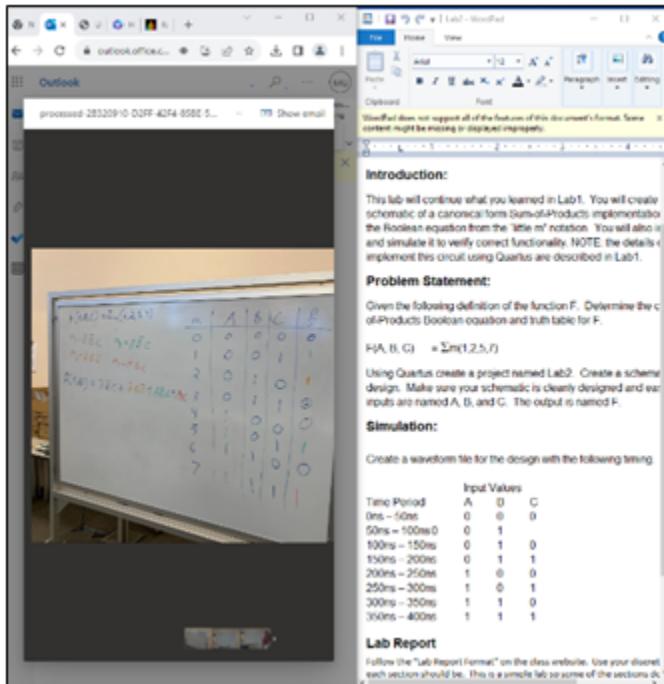
## Results

2-3 paragraphs describing the results of the laboratory and functionality of the resulting design. And discuss how well your design and implementation solved the original problem providing any useful system metrics such as the amount of code and time which was required to solve the problem while being sure to mention any (more) problems that were encountered during your design and implementation.

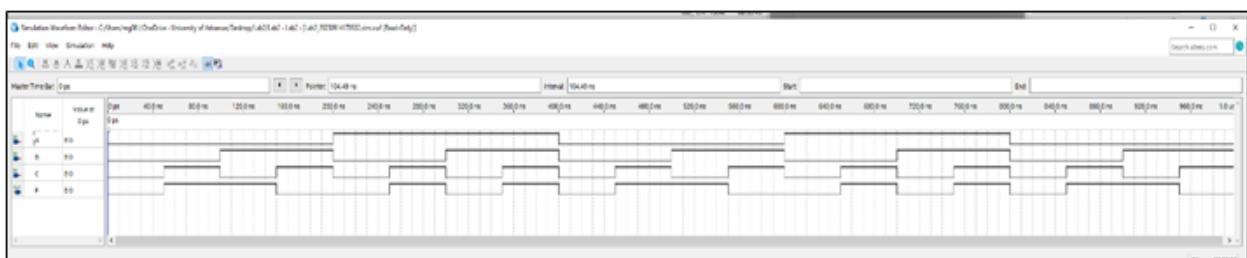
I saved this schematic with the same “Lab 2” name and after successfully compiling with no errors, I created a new vector simulation waveforms file (File à New à University Program VWF) after right clicking on the left panel and choosing Insert > Insert Node or Bus. I then went to Node Finder to select Pins in all from Filter from the new window, clicked the List button, and then selected all the nodes from the circuit by clicking on the ‘>>’ button. I then finally ended up in a window where I added all the inputs and outputs’ pins from the left panel to my waveform list and then went to the count value to change the Radix. I made sure to count every etc. of the pins as required for simulation and saved the waveform in my working directory with the name ‘Waveform.vwf’. Initially I made a mistake again of not deleting “-novopt” from the functional simulation settings which my TA had to help me with. He especially reminded me what the correct nanosecond range had to be within the count and radix to make all (not including the output) to have all output 1s (high voltage) to be true rather than 0s (low voltage) where it is false. This is something I got corrected in Lab 3 so I have learned from my mistake, regardless, here is the table below of which the simulation sees the waveform file being created from.

Time Period	Input Value (A)	Input Value (B)	Input Value (C)
0ns – 50ns	0	0	0

0ns – 100ns	0	0	1
100ns – 150ns	0	1	0
150ns-250ns	0	1	1
250ns-300ns	1	0	1
300ns-350ns	1	1	0
350ns-400ns	1	1	1



Since the simulation results ended up showing that the output of my design matched the truth table of the gates and for F, the functional simulation that I ran after working on it for yet again around another 2 hours turned out to be a success as shown in the screenshot below. I will create a table below to go into what is going on in the simulation wavelength editor and what the change in the wavelengths mean to show what's true/1 and false/0.



Name	Output in 0 - 50 Nanoseconds (ns)	Output in 50 - 100ns	Output in 100 - 150ns	Output in 150 - 200ns	Output in 200ns - 250ns
A	False / 0	False / 0	False / 0	False / 0	True / 1
B	False / 0	False / 0	True / 1	True / 1	False / 0
C	False / 0	True / 1	False / 0	True / 1	False / 0
Output F	False / 0	True / 1	True / 1	False / 0	False / 0

-----Etc.-----à

## Conclusion

2-4 paragraphs where you reiterate the original problem and quickly reason about how and why your design and implementation solve the problem. Provide any insight you might have about possible future work related to the project and provide any interesting extensions to the project that could be explored.

In this lab, the primary objective was to understand and utilize the Intel Quartus Prime software to design a digital logic circuit involving three inputs, three NOT gates, two 2-input AND gates, a 3-input AND gate, 3-input OR gate, and an output. These gates serve as fundamental components in digital electronics, and the goal was ultimately to create a functional simulation that matched their truth tables for F. The provided information in this lab report explains how Quartus Prime was used to compile designs, draw schematics, and run functional simulation waveforms. With the expected outcome, again, being to ensure that electrical signals, representing binary data, correctly flowed through the gates and producing 1s (high voltage) in response to specific input combinations within a certain nanosecond time frame while also accounting for 0s (low voltage).

The implementation process began with creating a project in Quartus Prime and drawing a complex circuit schematic diagram comprising, as previously mentioned, three inputs, three NOT gates, two 2-input AND gates, a 3-input AND gate, 3-input OR gate, and an output. After an amount of compilation, recalling, learning, and work, the simulation waveforms were executed and took me about less than 2 hours total to get there but to finish the lab overall took a bit more minutes than that. Initially, there was an I had an issue with the connections in the circuit as well as issues with the functional simulation settings and correct nanosecond timeframe to add to the radix and count, but the first one I figured out on my own and the two I needed help from my TA, Zachary, to help remind me. And so a range within the wavelength editor where all outputs should be 1s while also acknowledging the 0s both aligned with the gates' truth tables for F and such. The results indicated that the complexly designed circuit indeed matched the expected and actual behavior of the inputs, NOT gates, 2-input AND gates, 3-input AND gate, 3-input OR gate, and output, which confirmed the success of the functional simulation.

Looking ahead, this project does open doors to more implementation for maybe more complex or simple new problems. Again, such work could be complex logic gates and practical applications of the digital circuits like designing and simulating basic digital systems or even implementing small-scale

hardware projects. But I am sure we will get there but this second lab experience went better than expected and I feel like I am getting better at this and it has left me intrigued about what more I will learn and understand regarding the digital logic principles, coursework, and (hands-on) projects that await for me and the other students in the field of electrical engineering, computer engineering, or just computer science like me.

Overall, I was more familiar and prepared for this second lab after the first and the lab instructions this time were concise and easier to follow as a result of the context we gained from the first one. So in the end it was a very good lab, but an extension that could be added is to show us the hardware too rather than just the software on the lab computer and possibly some code.

## Digital Design Lab 3 - Incomplete

CSCE 2114-001 (1239-THEUA-CSCE-2114-SECL009-4855)

Maximiliano Garcia

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09/28/23

## **Abstract**

One short paragraph of 6-10 sentences summarizing the work I performed for the laboratory and describing the results that you ended with.

The work I performed in the laboratory began with applying the basics learned from the two previous labs, which involved operating Intel Quartus Prime, a software for designing logic devices and generating programmable logic device (PLD) designs. PLDs are versatile electronic components that can be configured for various functions, including FPGAs, CPLDs, and ASICs, but aside from that Quartus also facilitates analyses and syntheses of hardware description language (HDL) designs and provides a comprehensive design and development environment for graphical users. Within this environment, I can compile designs, conduct timing analyses, examine RTL diagrams, simulate how a design reacts to different stimuli, and such. Notably, Quartus Prime also supports VHDL and Verilog for hardware description, visual editing of logic circuits, and vector waveform simulation which have been used in previous labs and will be implemented in this Quartus VHDL (Very High-Speed Integrated Circuit Hardware Description Language) file project called Lab3. In this lab, VHDL (also known as the programming language used to model digital systems through structural, dataflow, and behavioral styles of modeling) code was written to implement a combinational circuit instead of using a schematic diagram and define the function  $F(A, B) = A'B + AB'$ . The code template for VHDL including standard logic libraries and the definition of input and output ports was utilized as well after being written, the file being saved, compiled, and ensuring that any errors were corrected. The design then led to the main focus of this lab which was going to go through simulation as the result of creating a waveform file matching the truth table that saw 1s occurring at the end rather than 0s for A and B input values within a certain nanosecond time frame to be true. To elaborate more, I had to create a more complex schematic than the first lab, and in many ways, the second one from a coding standpoint, while ensuring that the schematic dynamic diagram was created, easily readable, and correctly functional in Quartus' run simulation and its results. And finally, creating a lab report following the "Lab Report Format" that included keywords and ultimately learning the practical application of digital logic design from this lab to apply to the next.

## **Introduction**

1-2 paragraphs discussing any background information that's pertinent to the laboratory. Additionally, also describing the purpose of the laboratory and its expected results.

After recalling what was learned from the last two labs that used Quartus, I could now get into writing VHDL code for Lab3 to implement into a combinational circuit instead of just using a schematic diagram to check whether the design works or not. The creation of a new VHDL file began with clicking File > New > choose VHDL File before writing Quartus VHDL code as follows below for the function  $F(A, B) = A'B + AB'$ :

```
LIBRARY ieee;
USE ieee.std_logic_1164.all;          --This is a library that has the basic std_logic data
                                         types and a few functions.

ENTITY Lab3 IS
    PORT (
```

--This is the start of a new VHDL design

```

A, B : in std_logic;          -- Here, you put all the inputs and outputs
F : out std_logic);
END Lab3;

```

```

ARCHITECTURE Behavior OF Lab3 IS      --This is the architecture of the entity Lab3
BEGIN

```

```

    F<= (Not A) AND B;           --You put the function here

```

```

END Behavior ;

```

Afterwards I had to save the file and compile it, making sure to correct any errors before simulating the design using the same steps for simulation described in the Lab1 document which was used in Labs 1-2. I created a waveform file, added the inputs and output, set the timing for the inputs, then ran it to see the results.

Input Values		
Time Period	A	B
0ns – 100ns	0	0
100ns – 200ns	0	1
200ns – 300ns	1	0
300ns – 400ns	1	1

Nope, I give up.

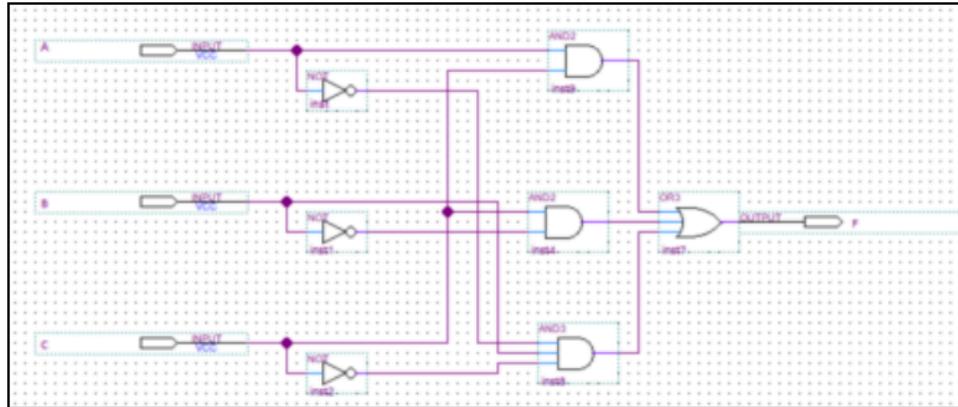
Upon having the and such established to understand the behavior and function of the circuit, we can now dive into the purpose of all this background information being to set up Quartus for compiling, schematics, and running a functional wavelength simulation to solve the lab assignment. The expectations being that the electrical signals in the digital electronic circuit going through the gates within a certain number of nanoseconds end up representing either a high voltage (1) as true within the lowest nanosecond time frame as opposed to a low voltage (0) as false.

### Design and Implementation

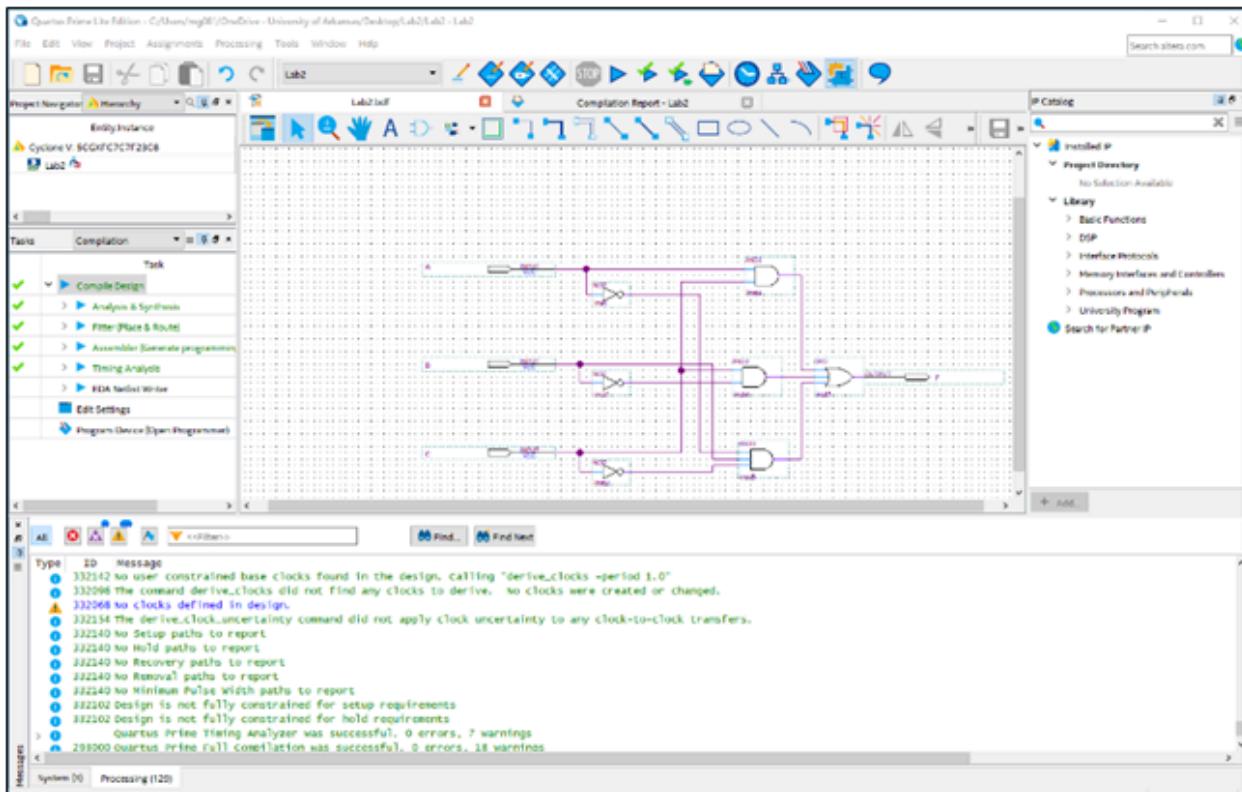
2-3 paragraphs describing the system that was designed and implemented, with exact details as to what was built as part of the laboratory, how it was built, and why it was built. Block diagrams, figures, source code, and screenshots are all highly effective and concise ways of communicating your design and implementation too.

Knowing this information, I could now begin compilation in Quartus Prime before drawing schematics and running a functional simulation by creating a working directory, making a “New Folder” called “Lab 2”, Click on File (upper left), and select New Project Wizard. After going through the “Introduction” window and selecting the folder I created with the name “Lab 1” as my working directory, I gave the same name to the Project and Design file before selecting Empty Project Type to design our circuit from scratch. I continued through the windows with no use of any template, file additions, connections to the FPGA board for Lab 2, or extra options for the EDA Tool Settings other than simply accepting the default settings. And upon creating this new project, I went to File > New > Block

Diagram/Schematic File where an editor window opened, revealing a gate and wire icon on top of the Editor window. This took me to the Libraries where I could find all the Logic Gates, I/O pins, buffers, VCC, GND and other modules to connect them with the wires.



With the new Schematic File and tools we needed at hand I could now create a complex circuit schematic as shown above with three inputs (named A, B, and C), three NOT gates (named inst, inst1, and inst2), two 2-input AND gates (preferably the first one would have been inst3 but inst4 made it), a 3-input AND gate (preferably would have been named inst5), 3-input OR gate (preferably would have been named inst6), and an output (named F). An amount of work had to be done like applying after applying the gates, changing the names a bit (could have used work), and connecting everything together correctly. One of the errors I had to troubleshoot through and fix were where a dot would appear where I didn't want it to. This meant that the wires were connected there and this would sometimes happen at the end near the pins where there isn't supposed to be that kind of connection so it did take some time to remove before the compilation could be successful.



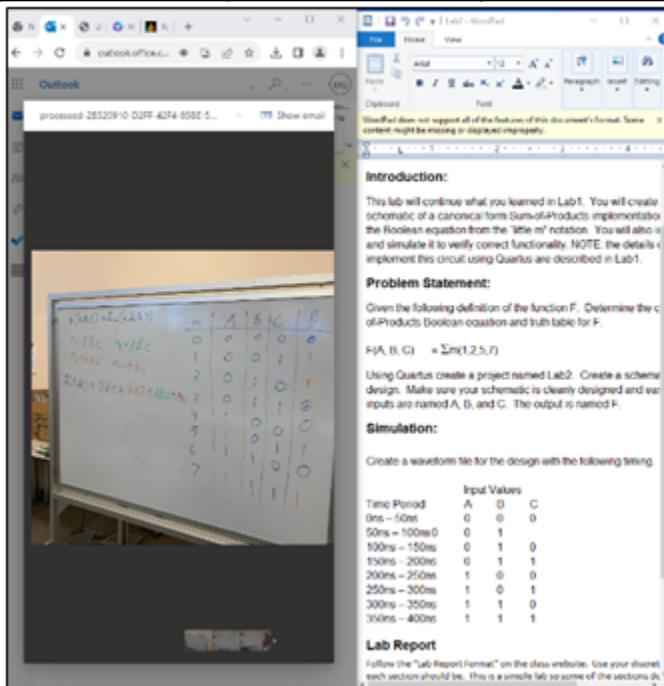
## Results

2-3 paragraphs here describing the results of the laboratory and functionality of the resulting design. And discuss how well your design and implementation solved the original problem providing any useful system metrics such as the amount of code and time which was required to solve the problem while being sure to mention any (more) problems that were encountered during your design and implementation.

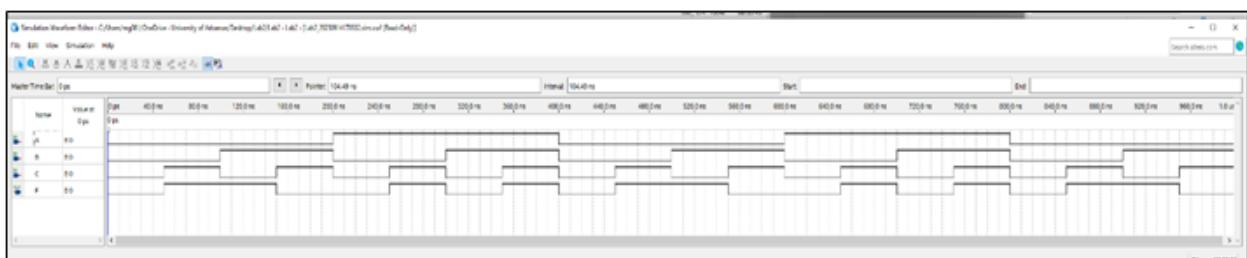
I saved this schematic with the same “Lab 2” name and after successfully compiling with no errors, I created a new vector simulation waveforms file (File à New à University Program VWF) after right clicking on the left panel and choosing Insert > Insert Node or Bus. I then went to Node Finder to select Pins in all from Filter from the new window, clicked the List button, and then selected all the nodes from the circuit by clicking on the ‘>>’ button. I then finally ended up in a window where I added all the inputs and outputs’ pins from the left panel to my waveform list and then went to the count value to change the Radix. I made sure to count every etc. of the pins as required for simulation and saved the waveform in my working directory with the name ‘Waveform.vwf’. Initially I made a mistake again of not deleting “-novopt” from the functional simulation settings which my TA had to help me with. He especially reminded me what the correct nanosecond range had to be within the count and radix to make all (not including the output) to have all output 1s (high voltage) to be true rather than 0s (low voltage) where it is false. This is something I got corrected in Lab 3 so I have learned from my mistake, regardless, here is the table below of which the simulation sees the waveform file being created from.

Time Period	Input Value (A)	Input Value (B)	Input Value (C)
0ns – 50ns	0	0	0

0ns – 100ns	0	0	1
100ns – 150ns	0	1	0
150ns-250ns	0	1	1
250ns-300ns	1	0	1
300ns-350ns	1	1	0
350ns-400ns	1	1	1



Since the simulation results ended up showing that the output of my design matched the truth table of the gates and for F, the functional simulation that I ran after working on it for yet again around another 2 hours turned out to be a success as shown in the screenshot below. I will create a table below to go into what is going on in the simulation wavelength editor and what the change in the wavelengths mean to show what's true/1 and false/0.



Name	Output in 0 - 50 Nanoseconds (ns)	Output in 50 - 100ns	Output in 100 - 150ns	Output in 150 - 200ns	Output in 200ns - 250ns
A	False / 0	False / 0	False / 0	False / 0	True / 1
B	False / 0	False / 0	True / 1	True / 1	False / 0
C	False / 0	True / 1	False / 0	True / 1	False / 0
Output F	False / 0	True / 1	True / 1	False / 0	False / 0

-----Etc.-----à

## Conclusion

2-4 paragraphs where you reiterate the original problem and quickly reason about how and why your design and implementation solve the problem. Provide any insight you might have about possible future work related to the project and provide any interesting extensions to the project that could be explored.

In this lab, the primary objective was to understand and utilize the Intel Quartus Prime software to design a digital logic circuit involving three inputs, three NOT gates, two 2-input AND gates, a 3-input AND gate, 3-input OR gate, and an output. These gates serve as fundamental components in digital electronics, and the goal was ultimately to create a functional simulation that matched their truth tables for F. The provided information in this lab report explains how Quartus Prime was used to compile designs, draw schematics, and run functional simulation waveforms. With the expected outcome, again, being to ensure that electrical signals, representing binary data, correctly flowed through the gates and producing 1s (high voltage) in response to specific input combinations within a certain nanosecond time frame while also accounting for 0s (low voltage).

The implementation process began with creating a project in Quartus Prime and drawing a complex circuit schematic diagram comprising, as previously mentioned, three inputs, three NOT gates, two 2-input AND gates, a 3-input AND gate, 3-input OR gate, and an output. After an amount of compilation, recalling, learning, and work, the simulation waveforms were executed and took me about less than 2 hours total to get there but to finish the lab overall took a bit more minutes than that. Initially, there was an I had an issue with the connections in the circuit as well as issues with the functional simulation settings and correct nanosecond timeframe to add to the radix and count, but the first one I figured out on my own and the two I needed help from my TA, Zachary, to help remind me. And so a range within the wavelength editor where all outputs should be 1s while also acknowledging the 0s both aligned with the gates' truth tables for F and such. The results indicated that the complexly designed circuit indeed matched the expected and actual behavior of the inputs, NOT gates, 2-input AND gates, 3-input AND gate, 3-input OR gate, and output, which confirmed the success of the functional simulation.

Looking ahead, this project does open doors to more implementation for maybe more complex or simple new problems. Again, such work could be complex logic gates and practical applications of the digital circuits like designing and simulating basic digital systems or even implementing small-scale

hardware projects. But I am sure we will get there but this second lab experience went better than expected and I feel like I am getting better at this and it has left me intrigued about what more I will learn and understand regarding the digital logic principles, coursework, and (hands-on) projects that await for me and the other students in the field of electrical engineering, computer engineering, or just computer science like me.

Overall, I was more familiar and prepared for this second lab after the first and the lab instructions this time were concise and easier to follow as a result of the context we gained from the first one. So in the end it was a very good lab, but an extension that could be added is to show us the hardware too rather than just the software on the lab computer and possibly some code.

- The Boolean equation for F
- The truth table for F
- The VHDL code
- The simulation waveforms
- What you learned from this lab, and how you think it could be improved

September 6, 2023

# CSCE 2004 – Programming Foundations I

## Programming Project Report

Name: Maximiliano Garcia

Date: 09/06/23

**Academic Integrity Statement:** I pledge that I have neither given nor received unauthorized help on this programming assignment.

### Problem Statement:

The goals of the programming assignment were to create code for a scenario that made planning a bike race easier while giving the user (likely a host of the race) a chance to see how many pedals it would take for a biker to finish a race, the supplies they need, the profits, and costs.

The program inputs required `cin` from the user. For Part 1 it was the racing distance and for Part 2 it was the number of participants. From this we could do calculations and attempt to do the program outputs to solve the homework assignment. The program outputs requiring `cout` for string and calculations within a variable that presents the user an answer based on their input. For Part 1 the calculations were to ultimately find how many pedals it would take to finish a race and for Part 2 it was how profits and costs. However, there were some road blocks in the way such as the errors the compiler would give me. The error handling I did included fixing the variable names, establishing a variable before using `cin`, fixing an assignment-provided value I inputted incorrectly, learning to use `floor` to create a variable for `pi` that was rounded down to 2 places because the full one was not what was asked of me, and fixing the operators I used.

So, was it all a problem? I would state it wasn't necessarily.

### Design:

The design decisions I made were spacing out my code and organizing it neatly so it could be very legible for the audience. Personally, I would've not explained what was going on in a lot of my code to the side or above with “//”. But in a way I could see how this would help if this was a long project I was tackling on and off, and of course, it aids in an outsider looking at this code to see things from my perspective. A neat one, mind you with various data structures used and algorithms. Overall I just did my C++ coding with OnlineGDB and applied what I've learned so far the past 3 weeks in Programming Foundations I did in one sitting due to time restraints.

There are pros to getting it done in one sitting as you are in the groove of things hoping you do not get thrown off and it takes less time in general, the con being that if you mess up badly the whole assignment can be in jeopardy. The pros to tackling the assignment at different periods of time are that you are not in a rush and relaxed, perhaps you could learn the material you are accomplishing at a nice pace of your choosing rather than brute forcing it at once. And as I explained with the structure and neatness, it would ideally take less code which is a pro, while a con would be that things are more spaced out and take more space.

### **Implementation:**

My implementation process involved me setting up the problem onto my screen by copy and pasting the necessary and expected output from the HW1 doc and changing some of that sample code to my liking. Nothing too important, just minor things. I extended and adapted my code by adding what felt like unneeded calculations for Part 1 and especially using floor to create a variable for pi decreased by two decimal points, which took a while to figure out to get the output all right. I believe we have not learned floor yet and the extensions and adapting I did to my code relate to the design as I wanted to make my code look nice, tidy, and readable. The development timeline it took me for all of this though was about a couple of hours, I'd say like around three of just sitting at my computer typing and compiling until I got it done and figured it out. I implemented almost everything I knew about C++ into this, and I am happy with the results.

### **Testing:**

I tested my program by pressing the run button in OnlineGDB after feeling like I was done with the portion I was coding and seeing how it turned out before progressing more through the assignment. The normal inputs I used include cout, cin, double, int, <<, ;, and operators. As for special cases, that would have to be #include, {}, #define, <iostream>, using namespace std, and others including floor. I am very proud of how I implemented that.

```
double Pi_Approximation = floor(M_PI * 100.0) / 100.0; //rounds math library's pi down  
to 2 decimal places
```

And as can be told after completing the code and making a report here, I like how the code turned out and it went better than I expected. I expected one mistake with the code but it is actually pretty good.

### **Conclusions:**

I would say the overall programming project was a success and the result was satisfactory. I ran into a few couple errors here and there, but I believe that is simply just part of the process. A process that I believe took about three hours long or more if we are counting this. If there is something I would do the same, it was all of it given my circumstances and the amount of effort I put into this project being pretty good. But what I would do next time and try to figure out how to have the negative sign behind the dollar sign and get that negative sign removed. I am lacking time so if I had more, I would've very much liked to have figured that out and play with it for about 20 minutes.

Perhaps that would be too much though given the expected output of the assignments shows that it is fine for the negative sign to be on the right side of the dollar sign rather than the left. Maybe an if statement would be needed? I wouldn't know how to do that in C++ yet though.

(2) September 6, 2023

## CSCE2114 Digital Design

### Homework Set #1

DUE: Wednesday, Sept. 6, 2023 (~~at the start of class~~ email update: “11:59PM”)  
(30 points total)

**Show your work.** If you don't show the details of your solutions you will get zero points for them. Homework Problems (2 points each):

**1)** Convert the following to base 10:

- a)  $1010_2$
- b)  $1101110_2$
- c)  $0100011_2$
- d)  $FF1_{16}$
- e)  $1001_{16}$
- f)  $5AE_{16}$

**2)** Convert the following base 10 numbers to the base indicated:

- a) 56 to base 2:
- b) 502 to base 2:
- c) 4000 to base 16:
- d) 240 to base 16

**3)** Convert the following binary numbers to the base indicated:

- a)  $10011100_2$  to base 16:
- b)  $11110011_2$  to base 16:
- c)  $11100011001100011001_2$  to base 16:

**4)** Convert each of the following from the indicated base to binary:

- a)  $AFE2_{16}$
- b)  $4078_{16}$

**Problem 1:** Convert to Base 10

- a)  $10102$ :

To convert a binary number to base 10, we use the following formula:  
$$(A_n * 2^n) + (A_{n-1} * 2^{n-1}) + \dots + (A_1 * 2^1) + (A_0 * 2^0)$$

In this case, the binary number is  $10102$ :

$$(1 * 2^3) + (0 * 2^2) + (1 * 2^1) + (0 * 2^0) = 8 + 0 + 2 + 0 = 10$$

So, 10102 in base 10 is 10.

b) 11011102:

$$(1 * 2^6) + (1 * 2^5) + (0 * 2^4) + (1 * 2^3) + (1 * 2^2) + (0 * 2^1) + (1 * 2^0) = 64 + 32 + 0 + 8 + 4 + 0 + 1 = 109$$

c) 01000112:

$$(0 * 2^7) + (1 * 2^6) + (0 * 2^5) + (0 * 2^4) + (0 * 2^3) + (1 * 2^2) + (1 * 2^1) + (1 * 2^0) = 0 + 64 + 0 + 0 + 0 + 4 + 2 + 1 = 71$$

d) FF116:

This is already in base 10. FF116 = 25510.

e) 100116:

$$(1 * 16^4) + (0 * 16^3) + (0 * 16^2) + (1 * 16^1) + (6 * 16^0) = 40960 + 0 + 0 + 16 + 6 = 41082$$

f) 5AE16:

$$(5 * 16^2) + (10 * 16^1) + (14 * 16^0) = 1280 + 160 + 14 = 1454$$

**Problem 2:** Convert to Binary or Hexadecimal

a) 56 to base 2:

56 in binary is 1111000.

b) 502 to base 2:

502 in binary is 111110110.

c) 4000 to base 16:

4000 in hexadecimal is 0xFA0.

d) 240 to base 16:

240 in hexadecimal is 0xF0.

**Problem 3:** Convert Binary to Hexadecimal

a) 100111002 to base 16:

First, group the binary number in sets of four from right to left: 1001 1100 0011 0001. Now, convert each group to hexadecimal:

1001 = 9

1100 = C

0011 = 3

0001 = 1

So, 100111002 in base 16 is 9C311.

b) 111100112 to base 16:

Grouping in sets of four: 1111 0011. Convert each group:

1111 = F

0011 = 3

So, 111100112 in base 16 is F3.

c) 111000110011000110012 to base 16:

Grouping in sets of four: 1110 0011 0011 0001 1011. Convert each group:

1110 = E

0011 = 3

0011 = 3

0001 = 1

1011 = B

So, 111000110011000110012 in base 16 is E331B.

**Problem 4:** Convert Hexadecimal to Binary

a) AFE216:

A = 1010, F = 1111, E = 1110, 2 = 0010, and 16 = 0001 0110.  
So, AFE216 in binary is 10101111110001000110.

b) 407816:

4 = 0100, 0 = 0000, 7 = 0111, 8 = 1000, and 16 = 0001 0110.  
So, 407816 in binary is 01000000011100010110.

August 22-29, 2023

## Auto Grade Reports for Programming Foundations I coursework

**Auto Grader Report**

8/29/23, 4:36 PM

Auto Grader Report

UAIID: 010969547  
Course: CSCE 2004  
Task: lab1

**Syntax - Correct**

Program source:

```
/// Include statements
#include <iostream>
#include <cmath>
#include <iomanip>
#include <iomanip>
using namespace std;
```

// Main function
int main()
{
 // Initialise Variables
 string name = "Tom";
 float amount = 99.99;

 // Print the output message
 cout << "Enter name:";
 cin >> name;
 cout << "Enter amount";
 cin >> amount;

 cout << "Hello " << name << endl;
 cout << "Please send " << amount << " dollars" << endl;
 cout << "Thanks!!" << endl;
 return 0;
}

**Test #1 - Correct**

Test input:  
Annabelle 123

Your program output:  
Enter name:  
Enter amount  
Hello Annabelle  
Please send 123 dollars  
Thanks!!

**Expected program output:**

8/29/23, 4:36 PM

Auto Grader Report

Enter name:  
Enter amount  
Hello Annabelle  
Please send 123 dollars  
Thanks!!

**Test #2 - Correct**

Test input:  
Zachariah 56.78

Your program output:  
Enter name:  
Enter amount  
Hello Zachariah  
Please send 56.78 dollars  
Thanks!!

**Expected program output:**

8/29/23, 4:36 PM

Auto Grader Report

Enter name:  
Enter amount  
Hello Zachariah  
Please send 56.78 dollars  
Thanks!!

**Syntax - Correct**

Program source:

```
// Include statements
#include <iostream>
#include <cmath>
#include <iomanip>
#include <iomanip>
using namespace std;
```

// Main function
int main()
{
 cout << setprecision(15);
 cout << "Here are some approximations of PI:" << endl;
 // Archimedes 228 BC
 cout << "22 / 7 = " << 22.0 / 7.0 << endl;
 // Zu Chongzhi 480 AD
 cout << "355 / 113 = " << 355.0 / 113.0 << endl;
 // Indiana law 1897 AD
 cout << "16 / 5 = " << 16.0 / 5.0 << endl;
 // C++ math library
 cout << "M\_PI = " << M\_PI << endl;
 return 0;
}

**Test #1 - Correct**

Your program output:  
Here are some approximations of PI:  
22 / 7 = 3.14285714285714  
355 / 113 = 3.1415926535898  
16 / 5 = 3.2  
M\_PI = 3.14159265358979

**Expected program output:**

Here are some approximations of PI:  
22 / 7 = 3.14285714285714  
355 / 113 = 3.1415926535898  
16 / 5 = 3.2  
M\_PI = 3.14159265358979

**Score = 100%**

8/29/23, 4:36 PM

Auto Grader Report

**Grade Summary**

UAIID	010969547
lab1	100%
lab2a	100%

8/26/21, 4:57 PM Auto Grader Report

**Auto Grader Report**

UAID: 010909547  
Course: CSCE 2004  
Task: lab2b

**Syntax - Correct**

Program source:

```
// Include statements
#include <iostream>
using namespace std;

// Main function
int main ()
{
    // Constant declaration
    float x = 100;
    // Get user input
    float y;
    cout << "Enter value for y: " << endl;
    cin >> y;

    // Perform arithmetic operations
    float sum = x + y;
    float difference = x - y;
    float product = x * y;
    float remainder = int(x) * int(y);
    float quotient = x / y;

    // Print results
    cout << "The sum (x + y) is: " << sum << endl;
    cout << "The difference (x - y) is: " << difference << endl;
    cout << "The product (x * y) is: " << product << endl;
    cout << "The remainder (x % y) is: " << remainder << endl;
    cout << "The quotient (x / y) is: " << quotient << endl;
    return 0;
}
```

**Test #1 - Correct**

Test input:  
42

Your program output:  
Enter value for y:  
The sum (x + y) is: 142  
The difference (x - y) is: 58  
The quotient (x / y) is: 2.38095  
The remainder (x % y) is: 18

[autograder.csail.mit.edu/~jgandee/csce2004\\_lab2b/lab2b\\_grader.cgi](https://autograder.csail.mit.edu/~jgandee/csce2004_lab2b/lab2b_grader.cgi)

8/26/21, 5:00 PM Auto Grader Report

**Auto Grader Report**

UAID: 010909547  
Course: CSCE 2004  
Task: lab2c

**Syntax - Correct**

Program source:

```
// Include statements
#include <iostream>
using namespace std;

// Main function
int main ()
{
    // Input values
    float n1, n2, n3, n4;
    cout << "Enter four numbers:\n";
    cin >> n1 >> n2 >> n3 >> n4;

    // Calculate mean of 4 values
    float mean = ( (n1+n2+n3+n4)/4 );

    // Calculate variance of 4 values
    float variance = ( (n1-mean)*(n1-mean) + (n2-mean)*(n2-mean) + (n3-mean)*(n3-mean) + (n4-mean)*(n4-mean) )/4;

    // Print the output
    cout << "The mean is: " << mean << endl;
    cout << "The variance is: " << variance << endl;
    return 0;
}
```

**Test #1 - Correct**

Test input:  
8 10 12 14

Your program output:  
Enter four numbers:  
mean = 11  
variance = 5

8/26/21, 4:57 PM Auto Grader Report

**Expected program output:**  
Enter value for y!  
The sum (x + y) is: 142  
The difference (x - y) is: 58  
The quotient (x / y) is: 2.38095  
The remainder (x % y) is: 18

**Test #2 - Correct**

Test input:  
-1

Your program output:  
Enter value for y:  
The sum (x + y) is: 93  
The difference (x - y) is: 103  
The product (x \* y) is: -11.3333  
The remainder (x % y) is: 1

**Expected program output:**  
-1

8/26/21, 5:00 PM Auto Grader Report

**Expected program output:**  
Enter four numbers:  
mean = 11  
variance = 5

**Test #2 - Correct**

Test input:  
85 106 120 140

Your program output:  
Enter four numbers:  
mean = 116  
variance = 800

**Expected program output:**

February 24 - May 12, 2023

Maximiliano Garcia

Dr. Stevens

PHIL 3103 – Ethics and the Professions

02/24/23

### Homework Assignment #1

Utilitarianism and Kantianism are different types of consequentialism where an amount of generative goodness or badness are right or wrong and justifiable or unjustifiable.

Utilitarianism is where if Action A is obligatorily right then such an action will maximize utility/well-being for the objectivism of pleasure at a utility. Utility is where a balance of goodness and badness occurs at a ratio, but with goodness mostly depending on how qualitative (maximized pleasure from few things) or quantitative (maximized pleasure from many things) the hedonism is. Dissatisfaction theory states that for any desire satisfied then you're better off ( $Sx \rightarrow WBH$ ) and that overall, in the grand scheme of things, "Society is messed up." Two Conditionals [  $(Max(a) \rightarrow Right(a)) T\&F$  ] [False] &  $(right \rightarrow Max(T\&F))$  [False] ] show that if one of them is false in what's right then it's false. But given that what's maximized is right whether on the rightness side ( $mP$ ) with the second statement being  $Max(a)$  or the wrongness side ( $mT$ )'s second statement consists of  $Max(b)$ , then the conclusion remains right.

Kantianism on the other hand is the belief that for every Action A that is right/permissible then it is passable in the name of fairness. The Pu tests asks to make a maxim statement where universalization for the second statement and conditionalization for the third follows for the conclusion to be true, but it's passing and falsified in the condition, then it ultimately is not passing or fair, however could have been if both the universalization and condition were passed. In the Ph Test, it is more about treating others as ends rather than means or to be autonomous, treating others as human beings and rationally as well as respectfully choosing and pursuing a good/better life. This means that if there are no positive externalities or benefits, it should be left alone or replaced. So, the first statement has to be right and passing, but if the second condition is not passing of both then it ultimately makes things not right. The Pu and Ph test are similar, but they have different manners within the first statement in determining whether it will later be determined to be right or not right.

Given this information I conclude that of the two, the type of consequentialism that best captures a plausible conception of the moral domain and generates more generative goodness, so we morally ought to make the right choices is utilitarianism. The reason being that utilitarianism sees right actions determined by a utility of balance between good and bad enhancing happiness for others and is superior to than katarianism's actions only being undertaken, regardless of right and wrong without balance of good and bad in the sake of "fairness", to enhance happiness for others which can lead to more immoral actions. Therefore,

katarianism is more flawed due to lacking a feature of generative balance in favor of fairness, which could be bad.

Maximiliano Garcia

Dr. Stevens

PHIL 3103 – Ethics and the Professions

03/03/23

#### Homework Assignment #2: Ross's PFD vs Virtue Ethics

Ross's PFD (prima facie duties) and virtue ethics are two theories of right action with differences regarding epistemically freedom (EF), stating that there is no method to determine the moral truth, and metaphysically freedom (mPF) which states that there is no moral truth. For Ross's PFD to be beneficial it would need to have no EF and an mPF, while for virtue ethics, it needs EF but no mPF. For both theories of right action to be disadvantageous, Ross's PFD would require no EF but mPF while virtue ethics has EF but no mPF.

Ross's Prima facie duty (PFD) is a non-consequentialist and deontological theory of apparent duty that can be overridden despite being contrary to the normal meaning of duty. PFDs, however, remain duties because of the moral vector of what makes something right or wrong. PFDs have factors from a situation or moral dilemma (conflict between 2 PFDs) that can be applied to the moral vector to ultimately determine whether it would be wrong or right to do an act. Such factors include fidelity (keeping of promises), reparations (repairing of harm that has been done), gratitude (appropriate acknowledgement of benefits given to us), justice (ensuring that virtue is rewarded and that the vice is punished), beneficence (enhancement of intelligence, virtue, and pleasure of others), self-improvement (making oneself more intelligent/virtuous), and non-maleficence (preventing harm to others). "All-considered duty," though, is the "winning" duty (the one which you end up obeying) in a moral dilemma that can be found from usage of objectivity and could be used against counter examples. However, PFDs are not ranked which means that results from an ACD test, a quick method for approaching ethical dilemmas, vary.

Virtue Ethics, on the other hand, differs from deontology and consequentialism (in which consequentialists find more excellent instance of the humankind) where Action A is right in circumstances C and A based on what a virtuous person (a person with virtue) would do in C. Virtue is the relatively fixed trait of character/mind involving dispositions to think, feel, and act fittingly and has four cardinal virtues. These four cardinal virtues are courage (ability to correctly perceive danger, be noble, and control fear), temperance (not doing things too much or too little, simply moderation), wisdom ("practical" wisdom where the most (common) sense is known in valued), and justice (fairness and honesty). And honesty, being a part of justice, has how much truth has been known sitting given some assumption, can be emotional as a pro or con to vertical truth tellers, and is disposed to Act in accord with the previously listed two aspects of honesty. The Central Human Capacities are also an element of virtue ethics which include reason, emotion, and will. "Human flourishing" is also a statement virtue ethicists would never say due to a threshold of more flourish where Right à Virtue à Flourish, because A (explained D in terms of B and not the other way around) à B.

Overall, Ross' PDF explains and tries to make sense of right action through usage of a moral vector that only gives one duty to initiate over another to fulfill promises or promote the good of others in a self-evident manner. Virtue ethics, though having a good principle, could be considered incomplete as it fails to explain or account for right action and does not offer solutions to specific moral dilemmas as Ross' PDF does while emphasizing too much on the moral agent. Ultimately this leads to virtue ethics being more selfish and focusing

more on emotions and reasons than objectivity, therefore Ross's PDF generates is more moral, generates more generative goodness, and proves itself to be the better theory of right action.

Maximiliano Garcia

Dr. Stevens

PHIL 3103 – Ethics and the Professions

03/03/23

#### Homework Assignment #2: Ross's PFD vs Virtue Ethics

Ross's PFD (prima facie duties) and virtue ethics are two theories of right action with differences regarding epistemically freedom (EF), stating that there is no method to determine the moral truth, and metaphysically freedom (mPF) which states that there is no moral truth. For Ross's PFD to be beneficial it would need to have no EF and an mPF, while for virtue ethics, it needs EF but no mPF. For both theories of right action to be disadvantageous, Ross's PFD would require no EF but mPF while virtue ethics has EF but no mPF.

Ross's Prima facie duty (PFD) is a non-consequentialist and deontological theory of apparent duty that can be overridden despite being contrary to the normal meaning of duty. PFDs, however, remain duties because of the moral vector of what makes something right or wrong. PFDs have factors from a situation or moral dilemma (conflict between 2 PFDs) that can be applied to the moral vector to ultimately determine whether it would be wrong or right to do an act. Such factors include fidelity (keeping of promises), reparations (repairing of harm that has been done), gratitude (appropriate acknowledgement of benefits given to us), justice (ensuring that virtue is rewarded and that the vice is punished), beneficence (enhancement of intelligence, virtue, and pleasure of others), self-improvement (making oneself more intelligent/virtuous), and non-maleficence (preventing harm to others). "All-considered duty," though, is the "winning" duty (the one which you end up obeying) in a moral dilemma that can be found from usage of objectivity and could be used against counter examples. However, PFDs are not ranked which means that results from an ACD test, a quick method for approaching ethical dilemmas, vary.

Virtue Ethics, on the other hand, differs from deontology and consequentialism (in which consequentialists find more excellent instance of the humankind) where Action A is right in circumstances C and A based on what a virtuous person (a person with virtue) would do in C. Virtue is the relatively fixed trait of character/mind involving dispositions to think, feel, and act fittingly and has four cardinal virtues. These four cardinal virtues are courage (ability to correctly perceive danger, be noble, and control fear), temperance (not doing things too much or too little, simply moderation), wisdom ("practical" wisdom where the most (common) sense is known in valued), and justice (fairness and honesty). And honesty, being a part of justice, has how much truth has been known sitting given some assumption, can be emotional as a pro or con to vertical truth tellers, and is disposed to Act in accord with the previously listed two aspects of honesty. The Central Human Capacities are also an element of virtue ethics which include reason, emotion, and will. "Human flourishing" is also a statement virtue ethicists would never say due to a threshold of more flourish where Right à Virtue à Flourish, because A (explained D in terms of B and not the other way around) à B.

Overall, Ross' PDF explains and tries to make sense of right action through usage of a moral vector that only gives one duty to initiate over another to fulfill promises or promote the good of others in a self-evident manner. Virtue ethics, though having a good principle, could be considered incomplete as it fails to explain or account for right action and does not offer solutions to specific moral dilemmas as Ross' PDF does while emphasizing too much on the moral agent. Ultimately this leads to virtue ethics being more selfish and focusing more on emotions and reasons than objectivity, therefore Ross's PDF generates is more moral, generates more generative goodness, and proves itself to be the better theory of right action.

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#### Homework Assignment #4

In *The Perfect Home*, Alain de Botton argues that our well-being would be higher if we lived in houses of modernist design and understood the worth of doing so. The reason the looks of our homes matter are due to the emotions that buildings can give us like happiness from factors in its architecture such as decoration and “perfection” which can be both materialistic and self-indulgent. Though the dilemmas of the ordinary homeowner range from profound questions like the branch of philosophy known as “aesthetics” to the choices we make about the shape of the windows or the color of the walls, all have meaning because we are different people in different places with different tastes. In Alain de Botton’s video he also goes into the beginning of architecture’s history and its different periods to establish context with the resources like space or wood being exchanged at the cost of buildings previously established in the area or the environment. In the early 20th century a German philosopher and art historian by the name of Vilhelm Foreigner came up with a fascinating thesis for why certain societies and individuals will fall in love with certain kinds of architecture, at that being that we don’t have enough of it in ourselves. Reason being that that when it comes to a house or a space, we want to apply what we want to it and especially around fear minimalism can give us comfort and security in that area in the modern world where the rustic style of architecture can get close to us to forgetting reality and possibly tapping into the escapism that is of a different time period in our homes. Which could be why we don’t live in such houses despite technological innovation supporting the ever-cheaper production of houses with design features that don’t as effectively further or undermine our well-being.

Another German philosopher Friedrich Nietzsche talks about how a mature adult always denies the truth that they must look at in the face but try to use an easy cure in the long run through producing something to overcome fake consolations, which allows for consequences to arise. Now how these thoughts of Nietzsche apply to architecture rely on the idea that a good building shouldn’t be shutting itself off from reality but mediating between the inner and outer world to reconcile us to the facts of our lives by refusing architectural level grappling with the challenges of modernity like its technology. It could explain what many political scientists call a 'collective action problem' or a generalized prisoner’s dilemma that involves suppliers and consumers, both doing what is in their rational self-interest, given market conditions. In German culture during the late 18th and early 19th centuries, they saw a group of artists and writers working on a philosophy of architecture called idealization which motivates and aspires the man based on classical Greece and has different ideals involved like democracy, science, and business and serve well symbolically to the public eye. Producing a building under an idealizing theory of architecture could also describe a simple form of propaganda with traditions, as pointed out by Nietzsche, which could be sentimental as well. Though many are frightened by modernity due to change,

there are progress, technological advances, and improvements that come with it as opposed to nostalgia which is playing a role in their comfort.

Overall with all this mind it could make one wonder reasons to be technologically optimistic or pessimistic about modernism in our homes beginning with optimism where matters such as making homes the way we want them to look can be more inviting and welcoming (possibly nostalgic or connecting us to something not present in our environment) after a tough day of work regardless if it is escapism or not and can improve our live given we will spend many hours there. A technology with a similar optimistic impact includes wind turbines which are a renewable energy source that makes creating energy a lot easier and less bad for the environment through usage of windy environments. So objectively, if something like doing what we desire with our homes and relying on renewable energy sources like those made from wind turbines or solar panels make life easier, than it is better than the standard building of living in a home that may not inherently the best environment for the human being and their very being to be in on a mostly day-to-day basis or energies that make it easier to sustain our planet while creating energy. Though on the technologically pessimistic side of things, wind turbines and solar panels take away open spaces like deserts where animals live while making us less reliant in creating our own energy in factories through nuclear or electrical means. Also not living in a modernist home could lead to-to much differentiation which costs more, be delusional to a degree, and can make a person less reliant in a world they are not able to conform to and attempt to escape from through such means. So though what consumers want to have been best what is supposedly best, and suppliers want to offer what is best for their interests in the pursuit of rational self-interest, everyone to be worst off as a result in a period of time where modernist houses are made in the current period we are living in and not the past.

Back to the objective truth of what makes both renewable energies (solar energy) better but modernist houses not so much, it could be found that the beliefs of the modernist designs can be viewed through a different scope from just reliance and making life easier. Bringing forth moral theories into the fray such as moral obligations to go after such matters through right action, we have utilitarianism, a type of consequentialism where an amount of generative goodness or badness are right or wrong and justifiable or unjustifiable. If Action A is obligatorily right such as what was described, then such an action will maximize utility/well-being for the objectivism of pleasure at a utility which is what is being accomplished in the balance of goodness and badness occurring at a ratio where it tilts more to good because of technological optimism. All while going for qualitative hedonism in from a few things that are not popular in architecture rather than many things from qualitative as dissatisfaction theory is involved.

And Ross's Prima facie duty (PFD) being a non-consequentialist too and deontological theory where apparent duty that can be overridden despite being contrary to the normal meaning of duty involving epistemical freedom (EF where there is no method to determine the moral truth) and metaphysical freedom (mPF where there is no moral truth), sees the duties remain because of the moral vector of what makes something right or wrong. For Ross's PFD to be beneficial it would need to have no EF and an mPF, while for virtue ethics, it needs EF but no mPF. For both theories of right action to be disadvantageous, Ross's PFD would require no EF but mPF while virtue ethics has EF but no mPF. PFDs have factors from a situation or moral dilemma (conflict between 2 PFDs) that can be applied to the moral vector that ultimately determine whether it would be wrong or right to do an act, so if living a

house of your own aesthetics involves fidelity in keeping of promises to make you feel comfortable, having reparations by repairing the individual of the harm done to them by the modern world outside their home, gratitude upon entering the home with the appropriate acknowledgement of benefits given to us, justice in not having a modern home that would have deceased the home owner's happiness, ensures that virtue is rewarded and while the vice is punished to the individual, beneficence sees their enhancement of intelligence, virtue, and pleasure of others as the home allows them to be more productive in the long run, self-improves by making them more healthy and intelligent/virtuous), and finally non-maleficent through preventing harm to others as the person will be less harmful and more sedated by their desired home in their life. Given all these matters improving the homeowner's life it should be the "all-considered/winning duty" that will be followed in a moral dilemma between technological optimism and pessimism regarding modernist homes.

However, 'Design professionals are [being] NOT morally obligated to try to influence clients or society generally to accept such superior technology as passive solar, insofar as doing so is practicable' can be applied in two other moral theories to clear up how no such moral obligation from the design professionals follows either of those theory's definition of right action does not risk the design professional's job, the company's contract with the client, etc. Kantianism being a different type of consequentialism from utilitarianism where an amount of generative goodness or badness are right or wrong and justifiable or unjustifiable holds the belief that for every Action A that is right/permissible then it is passable in the name of fairness. So, if the Pu tests asks to make a maxim statement where universalization for the second statement and conditionalization for the third follows for the conclusion to be true, but it's passing and falsified in the condition, then it ultimately is not passing or fair, however could have been if both the universalization and condition were passed. Given that the professional is still helping clients and society, even though they are not getting them to accept superior technology such as passive solar, it is still fair and they are treating the humans rationally and autonomously, more than just means to and end. All while respectfully choosing and pursuing a good/better life by allowing them the chance to have access to technology with positive externalities and benefits in the first place, with the customer also doing the same through purchasing their products so the whole situation is ultimately right and passing. Unto Virtue Ethics, differing from deontology and consequentialism (where consequentialists find more excellent instances of humankind), Action A is right in circumstances C and A based on what a virtuous person (a person with virtue) would do in C. Virtue is the relatively fixed trait of character/mind involving dispositions to think, feel, and act fittingly and has four cardinal virtues. These four cardinal virtues are courage (ability to correctly perceive danger, be noble, and control fear), temperance (not doing things too much or too little, simply moderation), wisdom ("practical" wisdom where the most (common) sense is known in valued), and justice (fairness and honesty). And honesty, being a part of justice, has how much truth has been known sitting given some assumption, can be emotional as a pro or con to vertical truth tellers, and is disposed to act in accord with the previously listed two aspects of honesty. The Central Human Capacities are also an element of virtue ethics which include reason, emotion, and will. "Human flourishing" is also a statement virtue ethicist would never say due to a threshold of more flourish where Right à Virtue à Flourish, because A (explained D in terms of B and not the other way around) à B. Given that the customer is still flourishing as well as the seller, the seller is courageous, just, tempered, wise, and honest for going for a product they feel is in the best

interest of everyone, the seller is very virtuous for willing to give forth a product to the consumer based on they feel is personally and reasonably better to sell without influence on the “superior” one.

In the end architecture can't make you into fundamentally different person but can be a permanent reminder of who we are at heart and what future generations are going to make of us with the buildings as the reality of our 21st century lives and buildings could help us to mediate between the inner domestic sphere and the world outside our front doors. So, our buildings really matter to our state of mind and can be rather alarming given how badly built most of our world is.

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### Homework Assignment #5

Considering the following 'Trapped Driver/Burning Truck Case' as an analogy for thinking about the (im)permissibility of voluntary active euthanasia, you see a scenario where after regaining consciousness from a bad crash, you manage to climb out of the overturned truck you (with a gun from the range) and your friend (the driver trapped behind the steering wheel) were in. You see him regain consciousness, both of you smell gasoline, see an orange glow from what a flame by his feet is apparently, and as your friend failed to desperately break free, he says "Do it. Just do it," meaning "Kill me. Just kill me". So, he is volunteering himself to be killed, presumably in his best interest not to be burned alive, and your shooting would be active rather than passive. Beliefs that tend to arise in euthanasia debates include intentional killing is wrong, patient best interests, autonomy is for its negatives, and Doing vs. Allowing. So with respect to this case, the seven reasons in support of the claim 'one should not shoot the driver' called anti-VAE that strike me as the strongest based on low probability of decreased badness/increased goodness, low probability of great good [not PGC], high probability of increased badness/ decreased goodness, and high probability of great bad include that if you might wound, then it is NOT permissible to shoot because you might wound, therefor it is not permissible to shoot (MP). If it is permissible to shoot, then you won't wound (not might would) then you might wound therefore, it is not permissible to shoot (MT). But also, there is a chance your buddy might not burn (MP - Nonzero chance of escape) where if they might not burn, then it is not permissible to shoot as they might not burn therefore, it is not permissible to shoot. Killing is always wrong, the orange light is not fire, someone else on the road who knows what they are doing might stop by and save your friend, and shooting your friend could be missed to hit something that makes the fire worse.

Assessing Hope's point of view, you can see that case comparison involves comparing 2+ cases that are similar in many ways like if you are uncertain what is the right thing to do in a

particular situation you could consider a similar case that you are more certain about in rightness. In comparison of these cases, you might ask if there are any morally relevant differences between the cases and if these differences justify the different treatment of the treatment. The fundamental logical point is consistency as if we treat two cases differently than we are being inconsistent unless there is a (morally) relevant difference between them. In the debates over assisted dying an interesting pair of cases to compare are medical situations involving withholding/withdrawing life-sustaining treatment with those involving (active) voluntary euthanasia or killing the patient. The example used is of two old patients who wanted to die, but the one that granted the request was found guilty of the serious criminal offence of attempted murder. The case established that (active) euthanasia is illegal and will potentially be murder under English common law as constructing a reasoned argument involves proposing what you think is the morally best/course of action including the main reason(s) or arguments of why you think so, articulating as many counter-arguments to that proposed decision as you can, and considering each counter-argument in turn and whether there is a counter to that counter-argument. And if all the counterarguments are effectively countered then you have constructed a reasoned argument in favor of your original position but if you cannot counter all of the identified counterarguments then you will need to re-think your original decision/course of action.

It is noteworthy that no argument is truly watertight or the last word as it is always possible that you have missed a possible counterargument to your original proposed decision, or that there is a counter to your counter a counterargument. Hope believes that if uncertainty over outcomes were a reason not to act, we would either be completely paralyzed in making decisions or frequently, through our inaction, we fail to do good when we should have been considering the various possible outcomes that the quality of life that each of these would entail with the probabilities of each occurring.

Miraculous recovery is very unlikely the weight to be given to this remote possibility where there is infinite as possible harms and benefits are assessed on an equal footing to get the facts crucially right to make good ethical judgements. So, for Hope's reasons for inconsistency in Argument Pro V.A.E. (Voluntary Active Euthanasia) involving (in)direct argument, he believes that the fact that you have a higher chance of not wounding them is a counterexample in and of itself. So, there are many possibilities if you shoot with there being a low probability of a minor bad, (they get wounded), higher probability of a great good, (they don't burn to death), low probability of increased badness/decreased goodness, and high probability of decreased badness/increased goodness. All while bringing in two possibilities if you don't shoot being the low probability of escape (a great good) and high probability they don't escape (a great bad of burning to death) with higher chances that they will burn to death. And that the harm of dying (#1) makes killing wrong (#2) [not the other way around], though a way to counter some of these arguments is the previously mentioned anti-V.A.E as well as counters to the counters to the counters to the...

Unto my views on the matter of whether mercy killing/voluntary active euthanasia's (im)permissibility, I believe that to reduce suffering of an individual is the right the to do and especially give them what they want in most cases (there are moral exceptions where you morally ought not to do something yourself or for someone). An interesting moral theory to tackle this belief would be Kantianism as in a way, it implies that the wrongness of killing is what makes dying a lesson, whereas utilitarianism of Not OH (death is a fair) à Not KW (where killing is wrong), where it's true that death is fair would be Kw --> OH(utilitarianism) so Not OH (utility), therefore Not Kw. Refresher on Kantianism it is a consequentialist belief that for every Action A that is right/permissible then it is passable in the name of fairness as the Pu tests ask to make a maxim statement where universalization for the second statement and conditionalization for the third follow for the conclusion to be true, but is passing and falsified in the condition, ultimately being a not passing or fair thing, however could be both if the universalization and condition were passed. In the Ph Test, it is more about treating others as ends rather than means or to be autonomous, treating others as human beings and rationally as well as respectfully choosing and pursuing a good/better life. This means that if there are no positive externalities or benefits that should be left alone or replaced so the first statement must be right and passing, but if the second condition is not passing of both then it ultimately makes things not right. The Pu and Ph test are similar but have different manners within the first statement in determining whether it will later be determined to be right or not right. In other words, since the person is treated like a being who is suffering and needs a somewhat painless release from it to avoid more and it is ultimately fairer, then it is the morally correct thing to do in a situation where more suffering (burning alive) is more likely as.

The conclusion that the author makes is that in rejecting the view that voluntary euthanasia is wrong in principle on the grounds that this argument puts the cart before the horse it is the harm of dying that makes killing a wrong and not the other way round. Overall, when suffering is the result of following a moral principle then we need to look very carefully at our moral principle and ask whether we are applying it too inflexibly as we believe this is what those who claim that voluntary euthanasia is morally wrong are doing and it is perverse to seek a sense of moral purity when this is gained at the expense of the suffering of others.

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Homework Assignment #6

(i) For the instance that I am a progressive liberal (leftist), Kant's principle of humanity is something I believe is something attributed mostly to left libertarians too who desire to protect (weak) autonomy, their choice, and pursuit to those ends if they don't undermine the autonomy of others. They also believe in negative rights and established a minimal/smaller government.

(ii) On the other hand, as something of a progressive liberal myself, how such autonomy relates to us is different as we used to be utilitarian but more or less shifted to Kantianism, so we share similar qualities, except the protection of the type of autonomy we want is strong and not weak. Along with Top-Down Policies as strategies for resolving social issues, being non-perfectionist, focusing on redistribution, desiring bigger government, interested in stature Law, and advocating for equality (fairness and positive rights).

(iii-iv) Now as a conservative (rightist) I must emphasize that equality and fairness can quite unwittingly undermine the ways and values of life that I reasonably want to protect and spread. You see, I'm a humble, traditional man who is something of a virtue ethicist and I genuinely believe in bottom-up policies which necessarily do not take away much but give more to solve the issues at hand like gun control. Not only that but I am a perfectionist who has started a few civil associations myself after inspiration from the angular cooperative association where men like me come together to solve a threat that threatens what matters our community, before going back to what we love doing like fishing without corporations polluting up our bodies of water that is near our newly bought land to combat them in court. However, it must be kept in mind that the valuable ways of HR that we hold dearly are objective because it they pass the test of time regardless of if it involves imperialism, genocide, and confederate statues. Sure, it was a real bummer that such matters took place, but there is a good thing there is less of that and our history as well as traditions of such can be preserved where they used to be to a degree or another.

There is also a maximal number of members following objectively valuable ways of human flourishing too as we desire smaller government as opposed to the progressive liberals who want bigger and more regulations as we go for common laws instead of stature law. I (to be honest as the person writing this I am a leftist) as a conservative who is connected strongly to my deep rooted beliefs and values strongly believe that the ends that leftists are pursuing may not be the best in the country as the fairness they are pursuing does not entirely mean equity for my group and that we may find ourselves in more Laws of Unintended Consequences like the EU fisheries case and slaughterhouse cases. Granted just because your side opposes my beliefs does not mean I am not doing the same for the progressive liberals. You prefer top-down policies for resolving social issues through means like regulation, are non-perfectionist, go for redistribution, have a strong autonomy, want bigger government if I have not said that already, and are of course for positive rights. Which understandably may be a solution that works for you where progress and advancement is more important than preserving and traditions, but if you are always changing and moving forward, don't you lose sight of what was, what you could

have kept, and seen pass the test of time rather than let it decay? After all, you are more rule-based and us conservatives are more reactionary-based, and I think that is okay to go about matters differently.

What freedom means as an ultimate justifier and our ideologies and goals may be for is not that both of us are different, but I believe what matters most is working together toward the goal of not putting aside our differences but acknowledging them and finding compromises not necessarily the middle ground. If we do not continue to identify too deeply with politics as we have in this country and learn to simply understand and communicate with one another rather than hate and prove wrong in this mostly two-party system, we can grow as people.

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#### Homework Assignment #7

In Business Ethics and Ethical Business by Robert Audi, it gives an Affirmative action situation where you must imagine yourself as a contemporary American manager considering hiring a minority for your team who presently has 20 percent in the minority category. The applicants include males and females as well as minority candidates with the majority being "white males" which is a phrase common in specifying a large group in the United States that has not qualified for special consideration under U.S. laws or public policies. Given the job at hand there are some tasks at hand that need to be tackled.

In one way, all normal hiring is preferential with business ethics being concerned with preference given based on characteristics that are not qualifications for the job in question. It would be unethical to make gender a qualification as how could gender or any characteristic other than a normal qualification be ethically made a basis of preference? A small privately held business has more ethical latitude than a large publicly held corporation and to sell to customers based on preference is unethical. Affirmative action (AA) gives some preference to members of a group identified by a characteristic not normally qualifying for doing the jobs in question where gender and ethnicity are the main cases of concern as AA comes in degrees. Extra effort to bring the preferred group into the applicant pool to get females to apply, looking extra carefully at qualifications of people from a preferred group who do apply (so that a minority person's resume that would otherwise be quickly put aside because of limited experience is read carefully), giving hiring preference when other things are equal in terms of qualifications, giving hiring preference when a member of a non-preferred class is perceptibly (but not substantially) better in terms of qualifications, giving hiring preference when the qualitative disparity is substantial, and giving such preference until a quota (such as the proportion of minority persons in the nation's or region's population is matched so long as the person hired is qualified to do the job at a minimally satisfactory level).

Employers might properly choose arbitrarily between equally good candidates and apart from prejudice would be expected to divide the jobs evenly over time between the two kinds of candidates. It is true, however, that the non-preferred candidate loses a fifty-fifty chance of getting the job where a representative white male would get only about half as many jobs offered in competition with equally qualified minority or female candidates.

But it should be quickly added that he could not complain of losing a job to someone less qualified and raises the other side of the issue of equal opportunity (EO). This is a kind of equality basic in both the egalitarian and libertarian democratic traditions see people commonly claim rights to it as if though the rights were absolute, EO considerations outweigh AA considerations, and at least on the plausible assumption that there is not also a right that AA is a right of reparation for wrongdoing with the right need not required to be fulfilled by employment preference. One response is a time-sensitive principle, for instance one that allows preference when other things are not equal only until the company has a certain proportion of minority employees, say the percentage they represent among educationally qualified people in the surrounding community. There is no way that even a good decision model can make such choices easy, but the recognition of conflicting moral obligations and the need to compare their strengths can begin a reasonable resolution.

If there were enough good jobs for all, the matter would be less serious though for promotions and pay, AA could compromise equal treatment with the degrees of AA beyond in business, a strong case must be made in terms of past discrimination, social benefit, or both, and preferably at least one other consideration, namely the economic argument from diversity. So, the argument for many businesses to succeed better when their workforce matches, in gender and ethical personalization as beneficiaries maintain defensive attitudes to justify receiving an unmerited advantage and secondly see many stereotype beneficiaries of others as less competent than others and resent them as a result. The issues raised by A4 and EO in hiring decisions can also arise with promotion, salary, bonus, and, on the negative side, discipline. Managers can, for instance, use (1) to (6) in determining competitive promotions where one or more of the candidates qualify for AA. For salary and bonus given apart from promo-ton, managers can set aside, for minority employees, either monetary amounts or percentages of funds, say an extra one percent of salary for minority or female status. There are many schemes, and (as with hiring) employees could benefit on more than one count, for instance being both female and of minority status. They could also benefit by receiving less severe discipline for failure to perform some duty. Another rough generalization is warranted builds as another rough generalization sees compensation being paid with less owed rather than social benefit considerations as partial compensation.

The basic idea of justice is supported by the idea of how Kantianists see people mattering equally as ends. Most employers do and should make representations of equal treatment in salary and promotion, but they sometimes do not do so in job listings as it may indicate an AA policy, which critics argue constitutes the injustice of unequal treatment in hiring. Whatever one's view on this, it should be noted that the relevant requirements of justice are not absolute. From the point of view of managerial decisions concerning reward, in this case promotion, salary, and bonus there are five major ones, partially overlapping criteria standard in business. One criterion of merit is productivity where in the broad sense of applicability in any business we can see direct contribution to its success, whether in sales, in improved efficiency (hence higher profitability), in enhancing reputation, increasing market share, or in some combination of such variables. A second criterion of merit is constructive effort, which may indirectly contribute to the variables just listed, as where an employee supports the work of others. Even taken by itself, however, effort is commonly and properly felt to call for reward or at least recognition which may be a response to the obligation of gratitude and even if not that, then to justice. A third criterion is experience age determining a working for more opportunity than those lacking the experience (flourishing). Third is financial experience, but as tasks are measured in budget, and in total the first three criteria are ethically important with decreasing moral weight it would be unethical not to give some weight to productivity, to effort to contribute, and to experience in the job-a person's relevant history where qualifications and replaceability are main practical criteria that have only an indirect connection with finesse, but they are still ethically acceptable in determining reward using them in determining reward is arguably required by prudence.

Prudence is largely using practical considerations to serve one's purposes, and it would be impractical for managers to ignore an employee's qualifications or the difficulties of replacement. Ethical standards do not provide a way to rank these criteria, say making replaceability more important than any of the others or even outweighing

all of them. Businesses, however, can sometimes rank them, for instance, making peaceability most important except for kinds of jobs that can be eliminated without major loss to the company. It's easy; honest. to be mistaken in a judgment of irreplaceability-or to underestimate the difficulty of replacement. A willingness to replace someone does come at the cost with compensation. It is very difficult, however, to know just what replacement cost at high levels is. There is no doubt that it can sometimes be very high. It can also be exaggerated. Recently, progressively greater concern has been expressed regarding executive compensation. The concern does not reflect any departure from the five merit criteria we have noted, but one important point is that there is a procedural deficiency in allowing executives (other than owners of a business) to play a major role in deciding their own compensation (as opposed to making reasonable demands, such as when they have a competing job offer). Yet despite all these difficulties, if the criteria and cautionary points made in this chapter are kept in mind, and if the process of deciding compensation is as informed and as free of bias as possible, the results may be ethically defensible. The five criteria of merit should, moreover, be part of a company's policies. They should apply to employees upon entry and govern their expected tons at later stages. This clarity about remuneration is a desirable kind of transparency.

With the following large amount of information above we can jump into discussion regarding AA of two different degrees or strengths that I am for, that being giving hiring preference when other things are equal in terms of qualifications so that way, we people are hired fairly and rather than lack of what is being hired. And what I am against is bring Extra effort to bring the preferred group into the applicant pool to get especially females to apply, I am not a white male myself, but I can say it is quite unfair how disregarded that group is compared to others if they have the same qualifies or slightly better than from another group only for the others to take their position. In a job setting I believe people should be treated equally and not equity-wise, as you are applying for the job you want to do and if it cannot be done the way the business wants you to, they can find another ideal candidate but that is somewhat beside the point. To place a political outlook and moral theory into person to create an extreme manifestation of sorts of these beliefs of these 2 AAs and that standard that ought to be looked for this we have say a progressive liberal who is kantianist (as expected but not utilitarian) where they believe in what is fair, equal, non-perfectionist, redistributed properly, and autonomy-based in work place including a business with more regulations on the hiring process to make sure it is more fair and positively right.

In a case where white male's whose job skills are slightly better than an AA candidate based on my favorite AA standard output, the white male would gain the job as rightfully earned whereas in a white female versus minority male situation matters tend to get tricky here. It is no longer dependent on their minority group but now about their skills, experience, resume look and information, interview results, education, etc. and whoever excels in the categories overall gains the job they want. It is already competitive enough to try to get a job so might as well make it an even plain field so we could see who makes it because candidates will have the potential to if they reach the requirements and excel the others. So, in the end, I would say I was fairly consistent in my outputs in the following responses in relation to my moral intuitions and may those pursuing the job get what they desire. As my biology teacher used to say before tests, "not good luck, good skill."

April 13, 2023

Maximiliano Garcia

Mrs. Grant

COMM 1313 – Public Speaking

04/13/23

## Technology Minimization in Our Daily Lives - Persuasive Speech/Presentation Outline: Completed 2026

Topic: Technology Minimization in Our Daily Lives

Speaker: Maximiliano Garcia

Specific Purpose: As a result of my speech, my audience will know about the problems of overusing technology on a day to day basis including its negative impacts on health and human connections, economic inequality and job security, and safety and security risks, and thus be persuaded to minimize their usage.

Preview Statement: Today I will be talking about and informing my fellow COMM 1313 classmates about technology minimization and three parts of it including its negative impacts on health and human connections, economic inequality and job security, and safety and security risks.

Give Your Audience a Reason to Listen: They should listen because overreliance on technology affects everyone in subtle but profound ways from eroding personal relationships and mental well-being to threatening jobs and exposing us to unforeseen dangers empowering us to make conscious choices for a more balanced, fulfilling life.

**Introductory Paragraph: No need for introduction**

Thesis Statement / Grabbing Your Audience's Attention: Imagine a world where your doctor treats a digital avatar instead of you, where AI decides your job fate, or where a tech glitch could crash planes or spark wars. This is the hidden cost of our tech-saturated lives, and today, I will show why minimizing technology isn't just an option but essential for reclaiming our humanity.

Establishment of Ethos: Bringing forth the pain from the pandemic, where overreliance on virtual interactions left many isolated, amplifying mental health struggles and highlighting how technology, while helpful, often replaces genuine human presence. We hear echoed from experts like Abraham Verghese, a Stanford professor who warns that tech threatens the "salutary effects" of being truly present with others.

Relevance Statement: In our daily routines, scrolling social media, using GPS for every turn, or letting algorithms handle work, we're all at risk of these issues, but by minimizing tech, we can foster better health, economic stability, and safer societies right here in our communities.

### **First Body Paragraph / Main Point: Negative Impacts on Health and Human Connections**

- A. Support: In healthcare, overreliance on technology like electronic records and AI leads to unintended consequences, such as errors from outdated information or reduced patient-doctor interaction, as analyzed in Interactive Sociotechnical Analysis (ISTA) studies, which show how HIT (Healthcare Information Technologies) can disrupt sociotechnical systems and erode the human element in medicine.
- B. Support: For mental health, young people heavily use tech for entertainment and support but prefer self-help over professional aid, leading to challenges in designing effective online services; moreover, AI in mental health raises ethical concerns like privacy breaches, bias in algorithms, and potential for discriminatory treatments, as noted in studies on Australian men's attitudes and broader AI ethics discussions.
- C. Support: Abraham Verghese emphasizes that technology threatens human connections in medicine, urging focus on patients' stories and presence for comfort, warning that virtual models replace real interactions, resulting in a less genuine system that is exemplified by time-motion studies showing doctors spend twice as much time on computers as with patients, reducing empathy and shared decision-making.

Transition: While these health and connection issues hit close to home, the problems extend beyond our well-being to our wallets and livelihoods, as technology reshapes the economy in unequal ways.

### **Second Body Paragraph / Main Point: Economic Inequality and Job Security Risks**

- A. Support: Technological advancements boost productivity but polarize the labor market, benefiting high-skilled workers while outsourcing jobs to low-cost countries and automating roles, contributing to income inequality as seen in U.S. studies on trade globalization and financialization, which concentrate wealth at the top.
- B. Support: In "Rise of the Robots," Martin Ford argues that AI and automation will obsolete many jobs, including educated professions like doctors and lawyers, leading to a "jobless future" where new industries require minimal human labor, as evidenced by companies like Instagram running on tiny teams, proposing a universal basic income as a solution to societal crisis.
- C. Support: Policy solutions like education investments and progressive taxes are needed to address these consequences, but without minimization, low-skilled workers are left behind, exacerbating inequality and reducing opportunities, as technology prioritizes profits over people and communities.

Transition: Beyond economic threats, overdependence on technology opens doors to even graver dangers in safety and security, where failures can have catastrophic, life-altering effects.

### **Third Body Paragraph / Main Point: Safety and Security Risks**

- A. Support: In warfare, the Yom Kippur War illustrates overreliance on tech like radar leading to false security and vulnerability to surprise attacks, as Israeli forces failed due to substituting technology for human judgment, training, and tactics, as a lesson that technology should enhance, not replace, situational awareness.
- C. Support: Navigation and critical systems heavily depend on tech, risking errors or failures in ships, planes, or embedded devices, as seen in Y2K concerns where dated coding nearly caused widespread crashes, highlighting societal dependence and the need for billions in fixes to avert disaster.
- D. Support: AI introduces new threats like AI-Crime (AIC), malicious use for fraud, manipulation, or terrorism, including deepfakes and psychological security attacks, where studies warn of data breaches, biases in high-stakes systems, and the need for risk-aware frameworks to prevent unintended consequences in cybersecurity and international relations.

Transition: Having explored these critical areas, let us wrap up by reinforcing why minimizing technology is key to a safer, more equitable future.

### **Conclusion Paragraph**

Reviewing your main points: Today, we have seen how overusing technology harms health and human connections by reducing presence and introducing biases, fuels economic inequality by automating jobs and widening gaps, and poses safety risks through failures and malicious exploitation.

Tie-back to attention getter: Just as WALL-E's humans from the Disney Pixar movie rebelled against tech's control to rediscover their humanity on Earth, we too can minimize technology to avoid a dystopian fate, prioritizing real connections, fair opportunities, and vigilant security over convenience.

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March 28, 2023

Maximiliano Garcia

Mrs. Grant

COMM 1313 – Public Speaking

03/28/23

### Austria (country) Informative Speech/Presentation Outline - 7 Slides

The slide features a large central image of the town of Hallstatt, Austria, nestled in a valley surrounded by mountains. To the left, there is a vertical sidebar containing seven numbered thumbnails, each representing a different aspect of Austria:

- 1: Austria Country Informative Speech Presentation
- 2: Austria Country Informative Speech Presentation
- 3: Cities
- 4: Cities
- 5: Cities
- 6: Food
- 7: Work to Class Page

Below the sidebar, the title "Austria Country Informative Speech Presentation" is displayed in a large, serif font, followed by the author's name "BY: MAXIMILIANO GARCIA" in a smaller font.

Topic: Austria

Speaker: Maximiliano Garcia

Specific Purpose: As a result of my speech, my audience will **know about Austria as a country in Europe including its history, cities, and food.**

Preview Statement: Today I will be talking about and informing my fellow COMM 1313 classmates about **the country of Austria** and three parts of it including its **history, cities, and food.**

Give Your Audience a Reason to Listen: The target audience has not been to or heard much about Austria before and I want to inform and talk to them about it.

**Introductory Paragraph**

Thesis Statement / Grabbing Your Audience's Attention: When thinking about the world and different countries besides the one that we live in right now, what pops in your head? Perhaps it's a neighbor like Mexico or Canada. A European country like France, Germany, Spain, or Italy? South American countries like Argentina, Brazil, and Chile? Maybe a big country in the east, like Russia or China? Asian countries like Japan, India, or the Philippines? Somewhere in the Middle East and an African country maybe?

Establishment of Ethos: Well today I want to talk about a European country that I have completed in-depth research on the past couple of days and even had the chance of going to one time (Spring Break Europe Trip in 2017 when I was in 8<sup>th</sup> grade). And that country is Austria.

Relevance Statement: A nation which I find to be one of the most astonishing countries in Europe and I hope that in this present day I can show you why that is.

### **First Body Paragraph / Main Point: History**

- A. Support: Like many European countries Austria sees a very eventful history beginning in the Paleolithic Age where in 400 BC, Celtic peoples from Western Europe settled in the eastern Alps and Hallstatt, a large prehistoric salt-mining area until the Romans arrived in 200 BC dominating the entire area in less than 200 years. By the later half of the second century, various German tribes like the Bavarians began extending their territory and raiding Roman territories like the eastern Alps and the Wienerwald region. In the 12th century, Henry II moved his residence to Vienna which has remained the capital of the country ever since. There also the Habsburgs who increased their influence through strategic alliances which was helped by the Turkish Wars where unsuccessful sieges of Vienna in 1529 and in 1683 prompted Poland, Venice, and Russia to join the Habsburg Empire and repel the Turks to put an end to the Turkish Threat.
- B. Support: The Baroque period then came and saw a huge surge in the arts and culture until the French revolution in 1789 and the rise of Napoleon who proved to be a major threat to the Habsburgs. The continent's political map was redrawn after Napoleon's defeat during the Congress of Vienna (1814/15) and a squashed 1848 French middle-class revolution that led to a cutting down of civil liberties and strict censorship. In the second part of this period growing urbanization and industrialization saw a new urban middle class, rise in socialization, and the arts. Thanks to Emperor Ferdinand I and his family, they shaped Austrian imperial rule further and made Vienna one of Europe's most important metropolises to the point

where it was the center of a multinational state extending from Hungary to North Italy and deep into southern Europe.

- C. Support: The 20th century then came with ethnic tensions and a rigid system of alliances from the 19th-century wars though. The Austro-Hungarian monarchy fell as a result of the assassination of the Austrian archduke and the heir to the throne, Franz Ferdinand, taking place in Sarajevo in June 1914 in Sarajevo. Austria's declaration of war against Serbia marked the beginning of World War I and by the end of the war in 1918, the first Republic of Austria was established ending the 640-year-old Habsburg dynasty. The young republic suffered massive inflation, unemployment, and near economic collapse so in 1933, the weak coalition between the Christian-Social and the Social-Democratic parties gave way when Engelbert Dollfuss became chancellor in 1932 as head of a right-wing government that worked to tackle the problems caused by the depression. In May 1934 Dollfuss, who was later shot and killed by Nazis in an attempted coup that occurred in July, declared martial law to protect Austria from Hitler. On March 12, 1938, German troops marched into Austria and the country was incorporated into the German Reich, but after the end of World War II in 1945, Austria was restored to its 1937 frontiers and occupied by the victorious allies, the USA, Soviet Union, UK, and France for a decade. The 21st Century saw the Austrian State Treaty was ratified on May 15, 1955 with Austria declaring its permanent neutrality and thanks to its location near the "Iron Curtain", Austria developed into a nerve center between the West and the East. After the 1956 Hungarian Revolution and the 1968 Prague Spring Invasion, Austria granted asylum to the refugees and later became the host country of many international organizations (UNO, OPEC) as well as the host of many important conferences and summit meetings. The Iron Curtain fell in 1989/90 though, so Austria joined as a member of the European Union in 1995.

Transition: I believe that should cover up most of their history with some places and cities mentioned. But what if you wanted to visit Austria? Where would you go in a magnificent alpine country with the divine scenery and history that it offers.

### **Second Body Paragraph / Main Point: Cities**

- A. Support: Over here we Innsbruck, a beautiful city with not just views of the Alps, but ski resorts you can hit if you know how to snow ski, hiking paths and trails you can go on, lavish buildings, and museums. There are also historic landmarks like the Hapsburg palace, the Hofburg District, an impressive cathedral among other churches, the tomb of Maximilian I, and castles.
- B. Support: Next up is Salzburg, a city I have been to with an amount of nature and hiking as well, including their famous salt mines, ice climbing, Hohensalzburg Castle,

Mozart's residence, the Salzburg Cathedral, and their zoo.

[image of you in Austria if applicable and talk about that]

- C. Support: Finally, there is Vienna, the capital of Austria. Being the former seat of the Habsburg Empire, it is filled with many impressive buildings, palaces, architectural works and historic landmarks, opera houses, museums/memorials, and cathedrals/churches. There is also the Vienna City Hall in the Historic City Center, the Danube Tower, the royal burial vaults, amusement park, and a zoo.

Transition: And of course, these cities also have very good food and restaurants to go eat.

Now that I mention it, are you hungry? Because I am, let's talk about food.

### **Third Body Paragraph / Main Point: Food**

- A. Support: First and foremost on the dish is Viennese Apfelstrudel is a flaky pastry lined with apple filling and that qualifies as vegetarian and gained popularity all around Eastern Europe under the influence of the Habsburg empire. Compared to the slightly heavier and generally sweeter American apple pie, this one has light and crispy pastry dough stretched thin with a filling and spice of, at most, apple, cinnamon, sugar, lemon, rum, cloves and added with raisins. It is these ingredients that find it to be a beloved Austrian street and bakery food being amongst one of the most popular Austrian cuisines along with the other two.
- B. Support: Another meal that is very popular is the Austrian goulash which is an Austrian hearty beef stew prepared in ingredients like onions, garlic, water, tomato, vinegar, bay leaves, paprika, and more. But it mostly depends on where and what version you get as many restaurants typically season them differently. The dish is usually served with a variety of garnishes and accompaniments such as fried wiener sausage, fan-cut pickled gherkins, bread dumplings, and sunny side-up eggs. Apparently, the dish is also popular as a hangover remedy which might be why you would see it across cafes being served in the mornings, besides the reason that it tastes good.
- C. Support: Then we have the wiener schnitzel, one of most well-known Austrian cuisines which is made from a thin cutlet that is breaded and then pan-fried in butter or oil. The schnitzel is atypically garnished with lemon and fresh parsley as well, being often served with a simple salad with vinaigrette, Austrian potato salad, and steamed potatoes or French fries.

Transition: After such meals I'm sure you'd be satisfied and full, but there is for sure a lot more to do, go, and see in Austria other than what I have just told you all.

### **Conclusion Paragraph**

Reviewing your main points: I have taken you all through the European nation's history, its places to go see, and delicacies to try.

Tie-back to attention getter: So, will you be going to Europe and stopping by Austria to see for yourself? This was a presentation over Austria, thank you for listening and may you all have a safe trip.

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March 6, 2023

Maximiliano Garcia

Ms. Kerry-Ann Purcell

ECON 2143: Basic Economics

03/06/23

### Discussion 1 Assignment (12 words)

(Prompt 1) Upon watching a nature documentary I found that Kenya, Tanzania, and Uganda have made it illegal to kill elephants and sell their ivory while countries like Botswana, Malawi, Namibia, and Zimbabwe allow people to kill elephants on their own property. This got me thinking about elephants and chickens, where in a way (A.) they are similar as not just being animals but not rival goods overall when it comes to the elephants on someone's property in Malawi, Namibia, and Zimbabwe. However, the differences are clear as day with common resource policies being put in by the governments of Botswana, Malawi, Namibia, and Zimbabwe to make the excludable resource rival. Chickens, on the other hand, are mainly not rival or excludable goods that can be owned by those who want to and can with no common resource policies in the way. Given that such rules and regulations are put into place by the government to prevent overconsumption of the elephants and Tragedy of the Commons, it seems elephants are going extinct while chickens are not with it being common knowledge that the chicken has a larger population than humans. (C.) It would not be possible to turn an elephant into a chicken literally though to avoid their extinction as what could still be occurring in countries such as Botswana, Malawi, Namibia, and Zimbabwe where property rights are being respected, but a way to do so and keep them as elephants would be to make sure for the governments that have elephants in their countries to establish common resource policies to keep them safe. This would ensure that (D.) their population increases like in countries such as Kenya, Tanzania, and Uganda probably, all while preventing a rivalry in the consumption of ivory from elephants.

(Prompt 2) Now unto Facebook, Twitter, YouTube, and social media applications that most of us use, it could be said that (A.) they are a common resource that is rival and not excludable as there is an oversaturation of them on various electronic devices and websites we use and access through such devices and the internet which are easy to access these days given you have them and the time. That means there is no rivalry in consumption unless the government places a common resource policy on them as what almost occurred to TikTok in 2021 when the government considered banning it due to its connection and sharing of information to the Chinese authoritarian government, lack of privacy protection, and likely being some "psyop." However, many social media do respect the privacy of their users, and this has allowed many others and me who use the internet and social media too often or at times (B.) to come across undesirable or toxic behavior of others with not many consequences. Personally, for me, it is whatever and does not affect me much at all, but it is an externality

overall as it paints a bad picture for the social media itself and the people who use it or the type of comment or posts negative content. (C.) Unfortunately, it is a bad thing that there is a lot of negativity on the internet in social media. Still, I believe in free speech so the providers of social media should allow anyone to say anything on their site, but as Instagram and Twitter do, have it be regulated to where each time there is a report or suspension, the bad user gets closer to losing access to their account and having it terminated while pushing them to be a better person, not just online, but overall. So that way the government does not get involved and turn a once common speech and expressive online platform into a private one that could possibly be excludable and not rival too.

Answer BOTH discussion prompts.

- You must create a discussion thread that addresses all seven (7) questions above. In order to receive full credit, you must create your own thread as well as post responses to at least two responses to your colleagues' posts. **[Check]**
- Responses to threads must contain a well thought out analysis/critique of their response. Non-committal responses such as, "Oh, cool, I agree" will not be accepted. **[Check]**

January 20, 2023

Reflecting on my email exchange with Dr. Christopher Stevens from January 2023, it was clear that our interaction served as a pivotal moment in broadening my philosophical perspective.

As a student in PHIL 3103 – Ethics and the Professions, I initiated the conversation with a practical Blackboard query and quickly pivoted to sharing my evolving thoughts on subjectivity, objectivity, and their roles in truth, beliefs, and life's "interestingness." My initial views showed a leaning toward subjectivity, tempered by respect for objectivity, but the professor provided nuanced feedback challenging these assumptions, clarifying possible confusions, and amplifying my insights. This dialogue of paragraphs over Outlook didn't just correct errors, but expanded my understanding and introduction into this course with logical rigor, analogies, and the interplay between concepts that ultimately fostered a more balanced, mature outlook.

Below, break down this evolution step by step, drawing directly from the exchange to illustrate how my viewpoint opened up.

### **1. Starting Point: A Preference for Subjectivity with Emerging Nuances**

I entered the discussion with a personal bias toward subjectivity, rooted in past debates with friends, describing it as potentially "better" because it seemed to make life "more interesting" than objectivity. This suggested an intuitive appeal to subjectivity's flexibility which allows for more diverse, personal interpretations that add color to existence. However, I also openly acknowledged objectivity's importance in "matters such as moral principles and even creating a right and wrong," indicating an awareness that not all truths are relative. Additionally, I tentatively proposed that "beliefs of a person are a truth that is subjective while definitions are objective," revealing an attempt to categorize these ideas to the best of my understanding at the time but with some uncertainty (noted by your being "not completely sure").

This baseline viewpoint of mine was open but somewhat unrefined since subjectivity as a "preference" implied it was a choice, like picking a flavor, rather than a metaphysical stance. My recent realization that "it's not subjectivity that makes life more interesting than objectivity, it's multiple truths (subjective or objective) as opposed to just one", thus marking a key shift. Here, I moved beyond a binary (subjectivity good, objectivity bland) to valuing pluralism itself. This self-reflection demonstrates a sort of intellectual humility and a willingness to evolve, setting the stage for my professor's input to catalyze further expansion.

### **2. The Professor's Feedback: Challenging Confusions and Building Depth**

Dr. Stevens' response acted as a mere mirror, reflecting back my ideas with analytical precision. He didn't dismiss my views, instead, praising my "nice insight" on interestingness and commended my consideration of alternatives, to reinforce my confidence while gently correcting flaws. This balanced approach likely works in making the critique feel constructive rather than confrontational, encouraging openness.

- **On Beliefs as Subjective Truths:** I posited beliefs as inherently subjective truths, but Stevens labeled this "false," reframing it logically as a conditional statement ("If something X is a true belief, then X is a subjective truth"). He countered with objective

examples like "2+2=4," showing that not all true beliefs are subjective. This opened my viewpoint by introducing the distinction between *belief* (what one holds) and *truth* (what is verifiable independently). Previously, I might have conflated personal conviction with validity, but this pushes me toward recognizing that subjectivity can house errors or biases, especially in ethics (like a subjective belief in moral relativism might overlook objective harms like discrimination).

- **On Definitions as Objective:** My idea that definitions are strictly objective was called "unfortunately probably confused." Stevens differentiated descriptive (subjective, based on communal usage) from normative (objective, prescriptive) definitions. This nuance expanded my thinking by highlighting context-dependency where definitions aren't monolithic. For instance, in professional ethics, a term like "integrity" might be descriptively subjective (varying by culture) but normatively objective (where it is an upholding truth in journalism). This likely broadened your lens from rigid categories to a spectrum, making philosophy feel more applicable to real-world debates.
- **On Preferring Subjectivity:** Stevens flagged potential confusion in framing subjectivity as a "preference," using a powerful analogy as preferring not to die despite its inevitability is irrational and may blind one to life's value. He argued that if subjectivism is true, it's inescapable, not optional, and preferring it doesn't change reality. This challenged my emotive lean toward subjectivity, urging a shift from preference-based thinking to evidence-based evaluation. It opened my viewpoint by emphasizing rationality as philosophy isn't about what feels good but what holds up to scrutiny. This might have prompted me to question at the time why I initially preferred subjectivity, likely in part to its empowerment of individual perspectives, and integrated objectivity as a necessary counterbalance.
- **On Life's Interestingness and the Value of Diversity:** My core insight that multiple truths foster interest was amplified by Stevens as he began explaining that under subjectivism, all views are "true," eliminating the need to discern falsehoods and thus reducing motivation for debate. In contrast, objectivism *requires* a certain tolerance and promotion of differences as pathways to the singular truth. This flipped my narrative, because objectivity isn't monotonous but rather dynamic, thriving on critique and evolution. By tying this to "separating the false from the true," Stevens showed how my idea aligns with objectivist pluralism, opening the mind more to how diversity serves truth-seeking rather than relativism. This did deepen my appreciation for ethical discussions in professions, where conflicting views (like in medical ethics where I had to read some of that book for the course) lead to better outcomes through objective resolution.

### 3. Overall Expansion: From Preference to Pluralistic Balance

The exchange transformed the viewpoint I had from a somewhat polarized preference (subjectivity as "interesting" and preferable) to a more integrated, pluralistic one. So since I started out with a gut-level attraction to subjectivity's vibrancy but emerged recognizing that true interest arises from engaging diverse perspectives within an objective framework. This opening up manifests in several ways:

- **Intellectual Humility and Critical Thinking:** By admitting uncertainty and sharing an evolving realization, I simply invited correction, which definitely broadened my toolkit of logical conditionals, analogies, and typologies which became something of a new lens. I have always been more of the type of person to go for more discussions than debates anyway.
- **Application to Ethics and Life:** In the context of my PHIL course, which was just starting, I recall it enriching my understanding of professional ethics, where subjectivity (personal values) must yield to objectivity (universal standards) for fairness. Had I perhaps discussed it in person instead of by email (as I regretted doing at the time) it might have made the talk more intriguing, personal, and real-time. Hopefully not a debate as that is not exactly what I seek in this case.
- **Long-Term Growth:** Over the years I would say this could have partly influenced my worldview, belief system, and studies since it provided a more hybrid approach. That being to embrace subjective experiences for meaning, but anchor them in objective scrutiny to avoid irrationality.

In essence, if that dialogue taught me anything it was not just to refine my ideas, expand them by revealing a level of interconnectedness. Subjectivity and objectivity aren't rivals or something you have to choose, they complement each other in a rather quest for truth. Thanks Dr. Christopher Stevens, and I know it was years ago now but the class was great.

December 1, 2022

# Formal Proposal for the Bentonville Housing Cost Problems

Maximiliano Garcia

ENGL 1033-003: Technical Composition II

December 1, 2022

## Proposal for the Bentonville Housing Cost Problem

By: Maximiliano Garcia

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In 10 to 20 years, this region will reach a million population, and if you spread them over this landscape like peanut butter, I think **you will regret it**. The future will get here faster than you think

- Rick Cole, executive director of the Congress of New Urbanism

2

### Location of NWA



### Proposal

The program I have created and plan to put into effect with your support is called the **Arkansas Housing Market Reset Program**.

- In this program attention will be given more to property and housing costs without avoiding other socioeconomic problems that the state is facing and contributing to the statewide issue and fixing the issues that Bentonville has.



### Problems it will tackle

- More attention, addressing, and action given to property, housing costs, and socioeconomic problems that cause them
- Lessen the suppliers' ability raise local housing prices
  - Decrease costs of materials
    - Have them and cities control the influx of people moving into NWA
- Fix the imbalance of supply, demand, and scarce housing through investigating
  - Decrease unemployment by putting more people in jobs
  - Make more land and lots available for (housing) through upzoning and make them closer to Bentonville
- Improve the public transportation system in NWA caused by sprawl
  - Sprawl can be resolved by tweaking zoning regulations and allow more houses per acre rather than spreading westward for more lots
  - The increase in density would mean better locations, lower land costs, removed impact fees, and sped up construction process
- Keep the growth of amenities that are popping up
  - Establish communication between the program itself, upcoming and current residents, businesses, and cities

### Budget & Schedule

#### BUDGET (IN NEXT FIVE DECADES)

- \$9,800,000,000 to solve the entire housing problem and most socioeconomic problems in the state of Northwest Arkansas.
- Housing shortage across the state is about 60,000 homes (Meriden Mock, 2022, para. 1)
- Each Arkansas household costs about \$160,000 (Samuel Stetkin, 2022, para. 3)
- All other problems are accounted
- \$330,000,000 for just NWA
- \$6,000,000 simply in Bentonville in the next five decades or even as soon as within a year.
- Though I believe adjustments can be made to meet the range of the Bentonville and NWA budget

#### Schedule

The Arkansas Housing Market Reset Program will be effective within a week, beginning January 7<sup>th</sup>, as focus and efforts are put towards tackling the housing problem as well as issues that come with or cause it overall.

The population growth that fueled the economic growth had put strains on housing, infrastructure, and the economy for a while, so the sooner the plan goes into effect, the better for Arkansas.

The economy is robust enough that the area's leadership will take their time coming up with solutions that work best for everyone however, my proposal cuts down on the time to seven days of preparations in Early 2023.

Estimated budget by square mile in Arkansas. In each individual county, there are 1.89 square miles. Total area of NWA is 3,340 square miles. Total area of Bentonville is 1.89 square miles. Total area of Bentonville is 1.89 square miles.

Arkansas has 75 counties. Total area of all counties is 18,850 square miles. Total area of all counties is 18,850 square miles.

The city of Bentonville is 1.89 square miles. Total area of Bentonville is 1.89 square miles.

Thanks for listening to me  
Any questions?

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## **Abstract**

The residential real estate industry in the thriving region of Northwest Arkansas, centered on the four main cities of Washington and Benton counties, including Bentonville, has seen robust economic and population growth that is not expected to slow down anytime soon. In the five years since founding patriarch Sam Walton died company managers and newcomers, many being Walmart suppliers and employees, began moving into cities like Bentonville, spawning a boom of subdivisions with names like Hanover, Stonehenge, and Lexington. Mr. Walton used to frown upon big, fancy houses in his company's town and believed that a frugal life was more consistent with the company's philosophy, going as far as chastising Walmart buyers and suppliers for wearing fancy jewelry like Rolexes. Many longtime Bentonville residents, though, do not want more people moving into Bentonville or NWA and blame Walmart's suppliers for raising local housing prices, says J.B. Ibos. Issues such as the increasing cost of materials such as lumber, wiring components, and fuel have been contributing to the region's rise in housing prices and close link to rudimentary supply and demand soaring with the population in Bentonville and NWA during the past couple of decades. This rise of scarce housing and infrastructure with a lack of available land for housing during Northwest Arkansas' economic and population boom shows no signs of ending, as stated by area economic development officials. To solve the problem, I propose that various socioeconomic factors be accounted for before tackling the issue so that Bentonville and NWA housing problems can be greatly reduced. I have experienced the negative effects of the housing market through the complaints of family, friends, and many fellow Arkansans in this natural state. In writing this, I hope something can be done about this matter, State Governor of Arkansas.

## **Introduction**

Recently, Walmart's battle with Amazon had been bringing in more tech-savvy urbanites and, at the same time, investment from Mr. Walton's heirs into local projects appealing to cosmopolitan tastes and the growing preference for downtown living for amenities. The amenities and construction have led to the creation of museums, a boutique hotel, a culinary school, different kinds of schools, a bike-trail network, and more, all in part to help businesses recruit talent. As investments in Bentonville's downtown by Mr. Walton's heirs have given the city a cosmopolitan presence, downtown improvements draw wealthy and urban buyers to typically clustered private golf courses and gated communities with grand homes, including Pinnacle, Rogers (which has the priciest homes in the region) and Talamore. Urban development Director of CBER Mervin Jebaraj believes that economic prospects in NWA will remain brighter than most other parts of the state because of the solid base of employers at J.B. Hunt, Tyson, Walmart, and the university. The employers' fixed stations in Bentonville and other Arkansas cities seemingly have no plans of going away from Arkansas and its unmatched growth rate compared to many parts of the country. However, the growth rates could lead to Bentonville and NWA becoming victims to their success because of the rising economic tide leaving many regional leaders concerned over the number of people living in the area vainly searching for an affordable home.

Bentonville is becoming less of the small town it once was decades ago as the average sales price for homes in downtown Bentonville over the past six years jumped from \$63 per square foot to \$192,

according to a recent study by the University of Arkansas commissioned by the Walton Family Foundation. The jump was enough for the foundation to begin considering how to support attainable housing for people with middle-class incomes, said a spokesman. Local buyers as such mainly want beautiful homes with less space and no yard maintenance, claimed Dana Renfrow, one of four co-owners of Lamplighter Restoration, a real estate business that has worked on projects downtown for decades and helped craft the prevailing aesthetic of new high-end properties. Excess housing inventory, both new and existing, has hurt businesses like Sam's Club that have taken at least a year to work through those problems, according to Deloitte Consulting chief economist Carl Steidtmann. The reported sales of U.S. retailers show an increase along with confirmed signs of a broad consumer slowdown stirring worry for the upcoming seasons, especially with consumer considerations of what to spend money on. To match supply and demand, Nelson Peacock, CEO of the NWA Council, believes Bentonville and NWA need people to keep moving to the area and strengthen the economic growth by filling up the unfilled jobs lacking the candidates to fill them. The idea of cooperation between business leaders and academic leaders, from high school to trade school to community college to university, ultimately comes in to help match the supply and demand. There is difficulty in making the area and downtowns more attractive for people who are coming in while supply and demand are not matching up completely. And every community that could address such issues but has not solved them well enough has either not done the best job in fixing the problem, did not address the problem well enough, or has done nothing to address or solve the issue. Regardless, NWA and cities like Bentonville are trying to get ahead of it, and the train must keep going.

Surging gasoline prices and a declining housing market have been slowing the train though, and share much of the blame, claims Mr. Steidtmann and various economists. Gasoline prices recently hit record levels during the summer and allowed for the fall season to lend relief while persistent sluggishness in home sales and construction continue to dampen consumer spending. Bill Burkart, owner of Burkart Construction, member of the research committee for the Walton Family Foundation, and member of the Bentonville City Council, said economists and regional leaders like Peacock have been debating over these issues relating to the housing problem for the past three decades and their relation to spending. But I believe that more must be done to contribute to the economic development and make the region more attractive as suggested by these experts. I think the socioeconomic problems should start being tackled and more policies developed to achieve affordable housing and make it more possible throughout cities like Bentonville. Because cities have not addressed the issue since the Great 2008 Recession caused by the housing market crash, the region's economic strength continues to be tested by the number of people moving into Bentonville and NWA. I do not believe it is not a bad thing that the three Fortune 500 companies, Walmart Inc. of Bentonville, Tyson Foods Inc. of Springdale, and J.B. Hunt Transport Services Inc. of Lowell, are the main reason for people moving into NWA. Rather, it could be a concern for, again, Arkansas' issues stemming from regional growth which also need to be addressed and taken care of, as emphasized by Peacock and Jebaraj.

Seven thousand people a year are expected to continue migrating to NWA and fuel the area's thriving job market in exchange for a space to live, but that space is going through housing development. Rogers firefighters cannot financially afford to live in Rogers, and Peacock once saw a similar situation transpire in the San Francisco area where colleagues of his were living as far as two hours due to that location being the nearest affordable housing for them. Subtracting from the quality of life by not living where you work is to be avoided as it is an inconvenience and not desirable for the community or critical

workforce. Sprawling is also a growing problem in Arkansas that could be so if not tackled soon because of the lack of transportation infrastructure and construction planning to accommodate those living 30 miles from Bentonville or Fayetteville. That means the availability of cheaper houses that far out would cause transportation costs to eat up a person's savings. So, if steps are not taken, Bentonville will see sprawling going on for the next couple of years, and the housing problem will get worse as the influx of people coming into new areas find themselves in an environment where homes are being bought in previously sparsely populated Lowell and Cave Springs as fast as they are being built. With new and costly demand for sewer, sanitation, electricity, and internet service appearing with the newly built homes, all the amenities that make NWA attractive to move to, like its affordability, could be lost if not enough attention is given to add, maintain, and keep the amenities. The continuous population growth will proceed to test the strength of Bentonville and NWA's infrastructure (like highways and roads) with added stress from other factors, which executive director of the Northwest Arkansas Regional Planning Commission Jeff Hawkins explains, need to be undertaken by infrastructure improvement before it gets too much to handle.

### **Proposed Program & Budget**

The program I have created and plan to put into effect with your support is called the Arkansas Housing Market Reset Program. In this program, attention will be given more to property and housing costs without avoiding other socioeconomic problems that the state is facing and contributing to the statewide issue and fixing the issues that Bentonville has. Because suppliers like Walmart are raising local housing prices, there must be talks with those suppliers to find ways to reduce those rising costs. They have directly caused the increase of cost in materials such as lumber, wiring components, and fuel, and while this is going on, we must have economists aid in determining how to better decrease the region's rise in housing where the rudimentary supply and demand is soaring with the population. I believe the growth rates will cause Bentonville and NWA to become victims of their success because of the rising economic tide. One of the ways to keep that from happening is to have many businesses, mainly the three Fortune 500 companies, Walmart Inc. of Bentonville, Tyson Foods Inc. of Springdale, and J.B. Hunt Transport Services Inc. of Lowell, controlling more of the continuous influx of people moving into Bentonville and NWA which are testing the region's economic strength. I find this to be a concern for Bentonville and Arkansas and must be resolved because of the many issues stemming from regional growth that need to be addressed.

The stellar population numbers in 2017 saw 540,000 people residing, the unemployment rate falling to 2.9%, and the gross domestic product being more than \$23 billion according to the Center for Business & Economic Research at the university's Walton College of Business. Two years later, the Northwest Arkansas Council announced in March that they would launch a workforce housing center supported by the Walton Family Foundation. They released a report detailing the housing dilemma and needs in the region during 2019, where an 11% increase in the price of the average home took place in 2020. The booming population and region growth since 1990 placed pressure on affordability and the climbing land prices where space is not a problem in NWA, where thousands of new arrivals move in each year, but rather as previously mentioned, affordability. The erosion of the small-town atmosphere and rise in housing prices has left many young, hardworking people unable to afford a home and while Bentonville's prices modestly appeal to East or West Coast homeowners. The building boom has had a

dramatic effect on the local market, with resale prices up almost 60% from 1990, according to the local Board of Realtors. And the number of homes sold annually has nearly quadrupled while the population of Bentonville climbed to 36% with 15,360 people. So, though the town in recent years has attracted some new businesses, most newcomers are Walmart vendors demanding upscale homes exceeding the expectations of various developers. Once at about 240,000 people, the number grew to more than 525,000 in 2017 and is projected to hit 580,000 by 2022.

Migration to NWA fuels the area's thriving job market in exchange for a space to live, but that space is going through housing development. This development creates an imbalance of supply, demand, and housing scarcity, meaning that investigating the infrastructure should decrease the effects of the rising economic tide and lack of land availability. The surging numbers have not only helped the mostly two-county area become a vibrant economic engine but also put a strain on the region's infrastructure, with the least of the problems being locating affordable places. The post-recession building boom that swept up the subdivision lots of years ago continues to drive demand for new lots as the Skyline Report puts the numbers of available lots in the second half of 2017 at 26,437 in 371 subdivisions for a 27-month supply. And as the lots became more expensive from compounding from rising construction, labor, and material costs, the average price of a home in Washington County rose to more than 5% to \$216,279 in the past year, while Benton County saw a nearly 2% jump to \$232,735. The Benton County numbers would be higher if Bentonville's average home sale did not drop to more than 7% from \$285,000 to \$265,000. The drop occurred because of an uptick in smaller home construction which left the price per square foot of those smaller homes generally the same, different from how the property value tends to increase in a lot purchase of \$20,000 more than a \$10,000 lot, which has a decreased cost.

The Walton Family Foundation's report, "Our Housing Future," painted a bleak picture for workers who earned the minimum wage or less and had hopes of finding an affordable place to live against the 500,000+ NWA residents (which could reach a population of 600,000 by 2023). The average sales price of a home in Benton County was more than \$293,000 in the second half of 2020, according to the Arvest Bank Skyline Report in March, while Washington County homes sold for an average of more than \$268,000. Not much can be done about the simple economics of rising land and related costs, and the municipalities in the region need to work together on creating more available and developable lots, especially around commercial thoroughfares where there is a loss of retail and an opportunity to change how they are. The land where people want to live is limited, and the way to have more people living there is to upzone as many as possible. Lots in the Lexington subdivision sold out ahead of schedule after going on the market in late 1994, and during the development of Hanover, houses kept getting bigger and grander, says Ms. Lehman, while in Stonehenge, where houses and lots are slightly smaller. Regardless, the 120 homes in that five-year-old project cost \$275,000 to \$300,000, and with the availability of residential lots in the two counties making up NWA being at their lowest since 2004, as concluded by Jebaraj, who is also the lead researcher for Arvest Banke's Skyline Report, a potential housing crunch in cities such as Bentonville could occur. CBER is working with the Walton Family Foundation and Northwest Arkansas Regional Planning Commission on a study of how the leaders of NWA can work together to get ahead of a potential housing crunch. However, regulations and red tape often cause housing development projects to take more than two years from conception to completion in a construction industry where time is money. The average sales price for homes in downtown Bentonville has jumped over the past six years, with a lack of support for attainable housing negatively

affecting people with middle-class incomes. I propose the construction of more homes after making the land to build them available, especially in Bentonville, where affordable housing should be closer, not excluding the other cities in NWA that the community and critical workforce need.

The median home prices in the school district of Bentonville and neighboring Rogers rose to \$200,750 last year, up 3.4% from 2016 and 20% over the past five years, stated local agent John Mayer. Sales in the top 10% of the market have stayed relatively steady over that time as population growth and Walmart's continued support of the technology workers helped counter the company's job cuts in other sectors as median prices in that top tier slipped to 1.5% last year after rising 2.5% the year before. The number of houses that sold for over \$500,000 grew to 226, up from 163 two years earlier and the homes in the \$500,000 to \$600,000 range are the most popular. Buyers in less-expensive homes trade up the homes in the region that are cheaper than other comparable cities, with the average price per square foot in Bentonville just being \$131, according to Realtor.com. The cost is a 52% increase since 2012 but is still lower than cities such as Seattle at \$824, Nashville at \$278, or Madison, Wisconsin at \$181. And aside from those already living there, the best that we can do for those moving into Bentonville and NWA is to strengthen the economic growth by having potential candidates from the group fill up the unfilled jobs. Sprawling is a problem too, which creates a lack of transportation infrastructure and construction planning that leads to transportation costs eating up savings. A low-hanging solution for sprawling that would impact the housing crunch is tweaking zoning regulations that allow for more houses per acre rather than sprawling westward in search of new lots. And in increasing the density, more homes would be in better locations, have lower land costs, removed impact fees, and speed up the construction process timeline. All of these would show quick dividends by lowering costs overall, especially with homes being bought in previously sparsely populated Lowell and Cave Springs faster than they are being built. This mostly leads to new and costly demand for sewer, sanitation, electricity, and internet service appearing with the newly built homes and amenities that make NWA attractive to move to, like its affordability. All of these could be lost if not enough attention is given to adding, maintaining, and keeping the amenities.

Nearly 70% of the population growth is migration, so of the 12,000 people added in a year, 70% are searching for housing, said Mervin Jebaraj, the director of the Center for Business & Economic Research at the University of Arkansas' Sam M. Walton College of Business in Fayetteville. The buildings spill outside Bentonville's borders to still-expanding developments such as the Bella Vista Village in unincorporated Benton County and Pinnacle Golf and Country Club in the nearby city of Rogers. At Pinnacle, developer Tallchamps L.L.P. plans to add at least 30 new homes to the existing 180 houses in the nine-year-old subdivision this year. Properties are being built near amenities where people want to live, and that causes home prices to go up as people move into the region. Tara Limbird, the principal broker at Limbird Real Estate Group in Bentonville, moved to NWA in 2000 and became involved in real estate a couple of years later and vividly remembers the sights of undeveloped ghost town subdivisions during the recession a decade ago, which are long gone now. Studies showed that NWA will nearly be a one-third minority by this year when just a few decades ago, it was almost 96% white until 168,000 minorities began moving into the area between 1990 and 2022. In substantial diversity growth that went as far as becoming reflective of the country, as stated by Peacock, Arkansas needs to make sure that everyone that comes feels welcomed, included, and part of the economy and community. Even then, the region is still trying to catch up with 40% fewer builders and workers in the wake of the housing crash as

concern grows for the housing squeeze and the difficulty it brings upon underpaid workers and the poorest families in the region.

Though, the way the builder could afford to build and make money is through the higher end with the low-interest rates. The lot crunch is a byproduct of the number of new arrivals looking to live somewhere, which led to downtown development surging in the four major cities of the area, Bentonville, Rogers, Springdale, and Fayetteville. The new Arkansans or residents of NWA look for amenities offered, both expensive and zoned for nonresidential uses, with a willingness to go for rezoned/upzoned nonresidential lots converted to a residential or mixed-use designation. While uptown Fayetteville oversees several developments mixing into residential apartments with retail and restaurants at the location, difficulty in the development of other areas of Fayetteville and cities in the region comes. Concerned by regional leaders over the search for affordable homes, CBER and the Northwest Arkansas Council, a non-profit organization, began comparing economic statistics to the more robust cities of the United States and found that there was impressive cooperation between competing cities, private businesses, and publicly traded companies in NWA. To get ahead of the potential housing crunches, CBER, the Walton Family Foundation, and Northwest Arkansas Regional Planning Commission utilize their reports to initiate a plan of their own that chokes growth and makes affordability less of a selling point and more of an advantage in moving to Bentonville or other cities in NWA.

The program should also better establish communication between itself, upcoming or current residents, businesses, and cities like Bentonville so that friends and family can live in a better, more sustained Arkansas. The NWA cities, though, need to address and act on issues that have been around since the Great 2008 Recession caused by the housing market crash and surging gasoline prices. To fix the housing market slowdown, the persistent sluggishness in home sales and construction needs to be amped up to ensure consumer spending is not damp. Cooperation between business leaders and academic leaders can aid in solving problems relating to supply and demand like excess housing inventory, both new and existing (which Sam's Club had problems with for a year). The connection ensures that with cooperation between this program, cities, businesses, and the people of Arkansas, they are helping each other out and moving Bentonville and NWA forward.

In terms of budget, what the program would need besides this information and these plans and solutions is about \$9,800,000,000 worth of money within the next five decades to solve the entire housing problem and most socioeconomic problems in the natural area of Arkansas. The budget plan is based on the housing shortage across the state of about 60,000 homes (Mercedes Mack, 2022, para. 1), each Arkansas household costing about \$160,000 (Samuel Stebbins, 2022, para. 3), and accounting for all other problems. Although, since this is Bentonville's problem which is rooted and mostly occurring in NWA, it would cost about \$330,000,000 to fix the issue in NWA. Or \$6,000,000 to fix that in Bentonville in the next five decades or even as soon as within a year. Though I believe adjustments can be made to meet the range of the Bentonville and NWA budget, reports also show how progress has been made in the Arkansas areas with the determined money and work. Regardless, the proposal provides information, a budget, and a solution for not just Bentonville, but NWA and Arkansas. I was able to calculate these numbers by applying the estimated cost of fixing Arkansas' problem within the next five decades and converting it into how much it would cost for NWA and Bentonville based on their different sizes in square miles. And since it was estimated that \$184,272.87 would be needed per square mile in Arkansas to fix such issues, the state of Arkansas is 53,182 square miles ([netstate.com](http://netstate.com), line 30), NWA (established to be Washington which is 942 square miles ([census.gov](http://census.gov), section 14) and Benton County

which is 847 square miles (usa.com, line 15)) is 1,789 square miles, and the city of Bentonville is 32 square miles ([www2.census.gov](http://www2.census.gov), line 54).

### Schedule

The Arkansas Housing Market Reset Program will be effective within a week, beginning January 7<sup>th</sup>, as focus and efforts are moving towards tackling the housing problem and issues that come with or cause the housing problem as well. The population growth that fueled the economic growth had put strains on housing, infrastructure, and the economy for a while, so the sooner the plan goes into effect, the better for Arkansas. The economy is robust enough that the area's leadership will take their time coming up with solutions that work best for everyone; however, my proposal cuts down on the time to do so and even within seven days of preparations. Many industries that the program will help are our banking, business, education (business schools), housing (prices and rates), and the market (with the trends, analysis, statistics, and research put into the program). Along with the real/residential real estate industry in the thriving region of Northwest Arkansas, centered on the four main cities of Washington and Benton counties, including Bentonville, communities, the economy and employment, infrastructure, population, and its growth, GDP (Gross Domestic Product), better management like the usage of taxes, lot availability, cosmopolitan amenities Bentonville of Northwest Arkansas, (sub)urban areas of Northwest Arkansas, and gasoline prices. And finally, the retail sales, consumer and their purchases, other systems, industries not mentioned, and the overall inventory, all play a part as factors in Bentonville, NWA, and Arkansas that need positive change so the Arkansas area can grow for the better.

### Qualifications

I am a concerned 19-year-old citizen of Fayetteville who grew up in Bentonville and is a current student at the University of Arkansas with basic knowledge of economics and matters in this state who is going into a Computer Science (STEM) major. I have an interest in helping solve the issues of the housing market in Bentonville and the Northwest Arkansas area, where growing up I used to hear my parents, friends, and fellow adult Arkansans discussing and complaining about the rising property value, which is still occurring today. And because many socioeconomic factors like the number of people moving into Bentonville have made this more of a problem, it needs more addressing and action to be taken. In proposing my program, I hope to not just solve the housing problem but other components that play a part in wearing down the natural state of Arkansas so that the housing issue is solved and Arkansas can continue to grow rather than the cost of a home.

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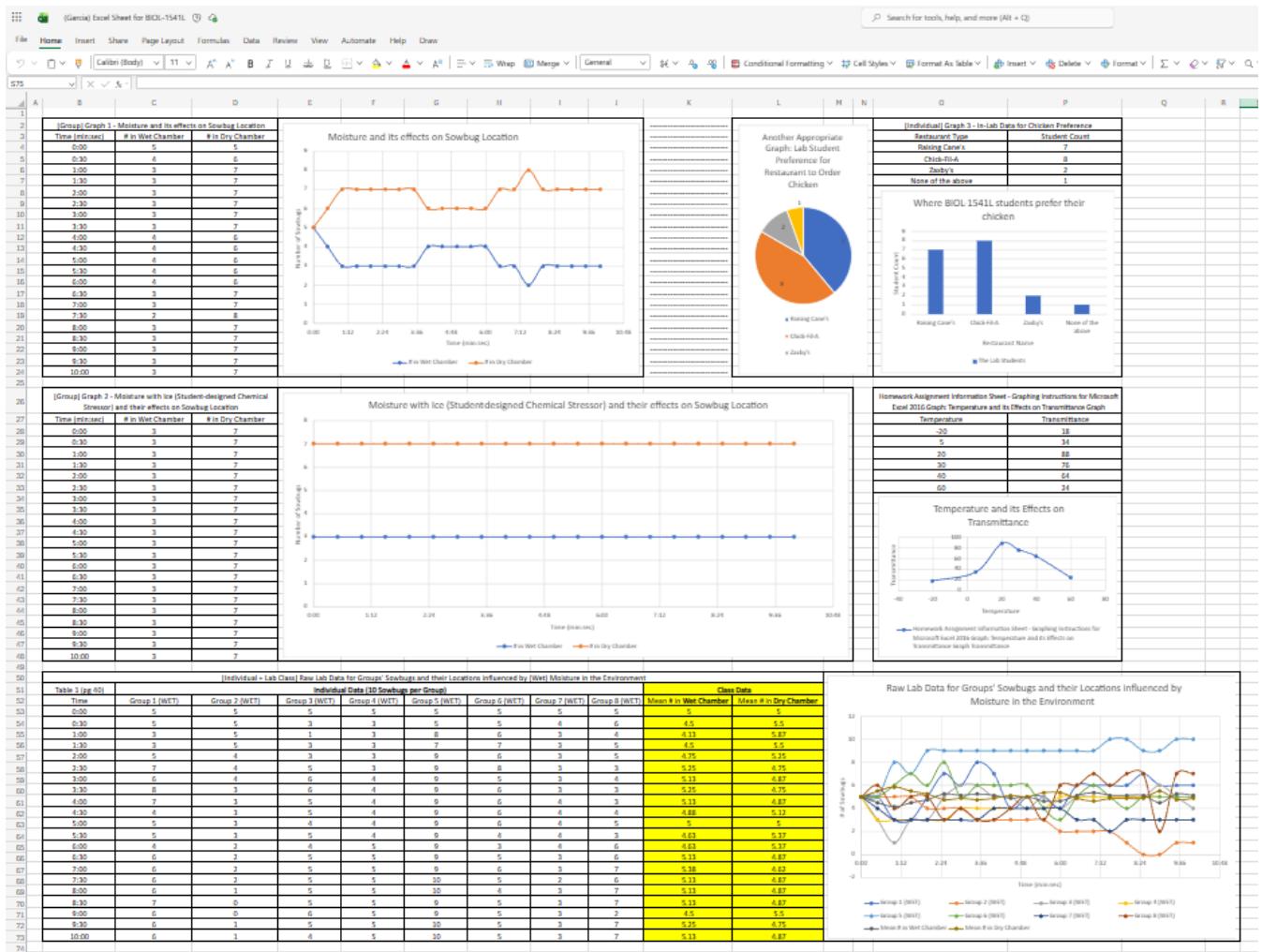
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November 7, 2022

(Garcia) Excel Sheet for BIOL-1541L



October 20, 2022

# The University of Arkansas

## MEMORANDUM

TO: Ms. Olivia Cash, ENGL-1033: Technical Composition II Instructor *MCJ*

FROM: Maximiliano Garcia, University of Arkansas Sophomore

DATE: October 20, 2022

SUBJECT: Major Project 2 – Extended Definition of Postmodern Films

### PROMPT

For the second major project of the ENGL 1033 course, Ms. Olivia Cash has asked the class to rhetorically write an extended definition and a memo following the instructions and expected structure/format. The rough draft must be turned in by September 23rd and utilize the components of rhetorical situations, as discussed in Grant-Davies' article, "Rhetorical Situations and Their Constituents." The article has definitions of exigence, the rhetoric, and the audience that will be used in the paper for communicating and discussing postmodernism and its constraints to the audience of (postmodern) films. For the memo, I am going to describe rhetorical strategies used for the paper. Peer revision for the classmates' rough draft papers (in the form of physical copies) happens on September 30th.

### ROUGH DRAFT

I began the rough draft by creating an outline of information from various sources on postmodernism however when turning in the paper for Weekly Assignment 5, it looks to be stuck in the rough draft phase as I am still trying to understand postmodernism well enough to put it into my own words and compress an amount of information into two pages. It is not an easy assignment, but this paper will be ready on October 21st before the end of Week 9 rather than Week 7, as I recently picked up Major Project 2 after some issues before Fall Break.

Nevertheless, many rhetorical strategies were used in my paper, including graphic strategy where an image was used to illustrate and support the definition of postmodernism. Operation strategy provided more context and explanation of postmodernism while using the Truman Show as both a graphic and example strategy for postmodernism. The partition strategy was difficult as I broke down large chunks of information for the audience, from twenty pages worth of information down to two pages. Finally, the etymology strategy was used to explain the origins of postmodernism and the history of modernism.

### REVISIONS AND SUBMISSION

Upon turning in the first draft before it was due, I began to lose interest in my classes which led to a lack of progress for the pre-peer revision draft. However, before Fall Break began, I started getting back on track with my academics and went to focus on Technical Composition II when it ended. On October 20th, I began work to finish the final draft and accepted an offer from my close friend to peer review my paper since it was about movies, and he is a Chicago film student. After the peer review, I began applying criticisms and suggestions from my instructor and friend to Major Project 2 before turning it in on October 21st. I also contacted those who would have been my peer editors from Week 7 and offered to peer review their work before resubmission but received no response.

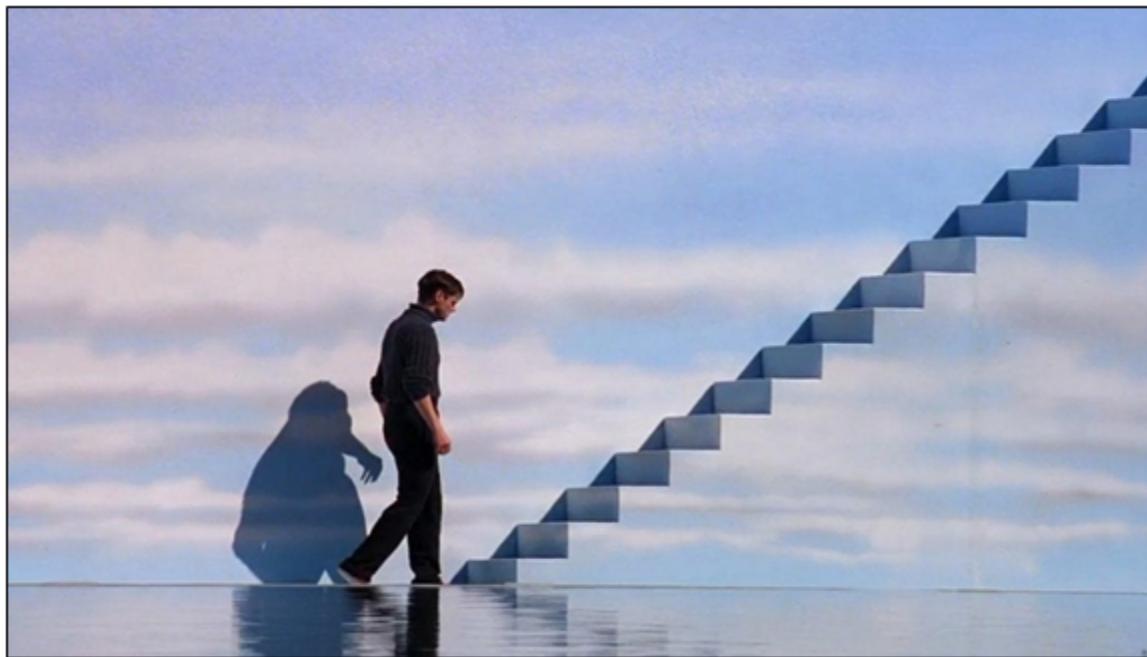
## Post-Modernism in Cinema and its Definition in Extension

Throughout media, there are limitations like conventions or walls that serve as barriers separating the fictional work from the audience, and function as a reflection of the work's awareness, by the creator who made it. But with most things set in stone, it is possible to test and break such ordinances or fourth walls to come up with something new and even expose the self-awareness in one's creation. In 1984, Fredric Jameson observed that contemporary culture began to express a new form of 'depthlessness,' which is a concentration on style and 'surface.' For Jameson, depthlessness, was a representation of the retreat from univocal narrative closure, and it soon came to be known as "postmodern text" that predicted the fragmentation of mass culture. In highlighting the end of a fixed system and loosening binary differences in art, such as good and bad, the modern consumer began to rise to the reconfiguration of multinational capital. Multinational capital is the productive force condensed in elements of fantastic cinema during the 1980s that held a relation to patriarchal power and called for (pre-)teenage boys to confront a disruptive force like ghosts or aliens. This reshaping of the multinational capital and evolution of the consumer and creator, combined with the growing interest in the postmodern genre, ultimately led to postmodernism's increase in popularity.

Postmodernism undermines the ideas of modernism in film, revolting against its traditions, views, and cultures as a means to innovate with something fresher and more refined. In combining various approaches in film with collections of graphic, literary, scenic, and visual arts, postmodernism creates a new work from art as a deliberation from its original source material for consumers of postmodern media. The revolution of the redefinitions and representations of art eradicated any variations of modernism that began with premodernism, a postulation taken over by religious beliefs with claims that every person is governed and influenced by their ideas. Premodernism demonstrates how an individual behaves according to their personal upbringing, while modernism justifies that people and their work are the roots of euphemism and certitude in the abstract narrative that the "real world" is more magnified and sensible than cinematic arts. Postmodernism, on the contrary, is a presentation of riposte to the merit of truth and recognition of realism being more than a reflection of what a person comprehends as "real." The establishment of a person's perception of characteristic truths could then begin to change and become dependent on the individual's practical knowledge of conceptual ideals and their solidification.

Because postmodernism focuses on standing for truth and its definition amongst the personal truths that affect every individual, it thrives in conveying things and the diverse nature and insights expressed in arts with various styles. As a result, postmodern films display a shift, not only in the mindset and manner of the actor's character portrayal but in the reasoning of a moviegoer as the film attempts to identify and challenge the difference between a "real truth" and a "fabricated truth". Postmodern films could also bend a lie into a truth, making an audience believe in the crooked truth offered by the film. Such postmodern films pursue an exigence within their genre to allow their audience to witness and come up with different conclusions resulting from relativism. Relativism (or absolute pluralism) in cinema is the belief that there is no absolute truth in an opposition to absolutism, where there is a singular truth leaving the rest as falsehood. The truths of an individual, either in relativism or absolutism,

can manifest themselves in conflicts and discussions between what is real and fiction within stories and narration. Objectivism, on the other hand, is the meaning given to things from the human and personal experience of both the rhetor and the audience. The involvement of characters in a plot that spectators forget to separate themselves from, the usage of hyperreality, and the creation of relationships through genre and intersexuality references are some characteristics that make postmodern films different from other types of films which could resonate with audiences more. Other traits of postmodernism in cinema include popular culture to spark an interest enjoyed by the masses, references, and representations that challenge known beliefs and aspects of life.



Different films which follow the criteria mentioned above include Quentin Tarantino's *Pulp Fiction*, Ridley Scott's *Blade Runner*, Martin Scorsese's *Taxi Driver*, Francis Ford Coppola's *Apocalypse Now*, Alan Pakula's *All the President's Men*, Quentin Tarantino's *Reservoir Dogs*, Robert Zemeckis' *Forrest Gump*, Studio Sunrise's *Cowboy Bebop*, and Peter Weir's *The Truman Show*, starring Jim Carrey. *The Truman Show*, being an absurdist, American, psychological, comedy-drama-thriller film, is genre-blending and introduces the audience to a man named Truman Burbank, who, despite being true to himself and the world he is living in, finds the environment to be a large set filled with actors and props for a television show. It is a thought-provoking premise with elements of dystopia and metafiction that push thematic concerns produced within postmodern cinema. The scenarios found in many postmodern films, such as *The Truman Show*, provide the viewer with a different perspective on life and, because of the nature of postmodernism, can cause them to clash with other interpretations. Considering the insertion of the realities of human experiences into a perspective where not just one truth is possible, the emergence of films of this kind can challenge us to think differently.

In existing as a new modernist concept through the ego death of modernism and the premodernism which came before it, the films of postmodernist media have criticisms stemming from self-reference and the undermining of concepts like creativity and freedom applied through artistic creativity borrowed from the avant-garde movement, which addressed the difference between realist and naturalist films. While there is potential in creating media through the postmodernist genre, it is

limited to those involved in the project. In explanation, critics such as Steven Connor and Linda Nicholson have begun to question the postmodern film's surface and context, along with how "free" the readers are in a position where there is no absolute truth. But, in examining those questions, the contradictions are brought about by absolute pluralism, exploring the limitations imposed by an absence of values that could lead to a rise in post-postmodernism or metamodernism. The steady growth of this metafiction seen developing in media and cinema from the self-awareness held by the authors and audience will, in turn, bring further innovation and evolution to mass media by challenging the concept of postmodernism and naturalism. The modern movement is to be thanked for the creation of postmodernism, as it would cease to exist without its evolution and the growing need for entertainment in our lives.

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October 19, 2022

Maximiliano Garcia

Ms. Olivia Cash

ENGL 1033 – Technical Composition II

10/19/22

### Weekly Writing Assignment #4 – Defining in Future Career

In my future career, which I anticipate having later in life, working for a corporation, I believe I will have the position of either a database administrator or information systems manager. Throughout my job, I will likely communicate information and result in conversations or discussions, emails, reports, and presentations to my coworkers and bosses. And in such tasks and briefings, as well as situations outside of the workplace, I am sure I would find myself in an instance where I would have to define my job. A database administrator's job is to create and administer databases by ensuring they operate efficiently, are tested, updated, and have the structure modified (even merging databases). An information systems manager oversees the IT department, manages the IT workers, handles budgets and schedules, and coordinates/manages business data through improving and implementing software systems in a business while ensuring an efficient workflow and implementing company policies and regulations.

Another instance defining an aspect of my future position is databases, a structured set or collection of data, information, and code stored electronically in a computer system containing hardware and software that allows it to function and complete tasks. The third instance where I would have to define a part of my desired job is servers which are devices with hardware and software that accept and respond to requests made over a network, responding with files asked for by the client. When defining such components and others as a database administrator or information systems manager, the audience and situation are to be considered and given importance.

September 20, 2022

Maximiliano Garcia

Biology Lab

BIOL 1541L

Carson Stacy

Research on Beetles

September 20, 2022

## EVOLUTION AND CLASSIFICATION OF BEETLES

*John F. Lawrence*

Division of Entomology, Commonwealth Scientific and Industrial Research Organization, Canberra, Australia

*Alfred F. Newton, Jr.*

Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts

### ORIGIN AND RELATIONSHIPS

#### *Sister Group Relationships and Position of the Strepsiptera*

Coleoptera are generally thought to be more closely related to the Neuropteroidea than to any other group of Holometabola. Possible synapomorphies of beetles and neuropterooids are: (a) presence of a gula in the adult, (b) oblique attachment of the forewings with an enlargement of the costal field (humeral and epipleural areas of the beetle elytron), (c) form of the ovipositor, (d) structure of the stemmata (larval ocelli), and (e) absence of cruciate cervical muscles (35, 51, 64, 81, 87a). Some of these features, however, have been examined in very few Coleoptera. Mickoleit (81) concluded that the beetle ovipositor represents the plesiomorphic form of that found in neuropterooids, so that Coleoptera could not be the sister group of any particular neuropterooid order; but Hamilton (48) argued on the basis of wing venation that Coleoptera and Megaloptera are sister groups. Evolution of beetles from megalopteran-like ancestors is supported by the elytral structure in Lower Permian beetles, where the venation resembles that of a megalopteran forewing, and a hindwing from the Upper Permian, which has characteristics of both groups (20, 35, 89, 90).

The position of Strepsiptera is still unclear, but the group is usually considered to be closely related to beetles based on the following evidence:

of wing venation that Coleoptera and Megaloptera are sister groups. Evolution of beetles from megalopteran-like ancestors is supported by the elytral structure in Lower Permian beetles, where the venation resembles that of a megalopteran forewing, and a hindwing from the Upper Permian, which has characteristics of both groups (20, 35, 89, 90).

The position of Strepsiptera is still unclear, but the group is usually considered to be closely related to beetles based on the following evidence:

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Throughout the world, there are many types of beetles with a wide variety of dietary needs and importance to the ecosystem they inhabit. And what is seen in the adult beetles, regardless of the species being the most common type of insect, is that they have 2 sets of wings and 3 pairs of legs from the hardy dung beetle to the weevil to the cute ladybug. In the identification of eleven main types, the length size, diet, and scientific names these are going to be the beetles explored before discussing the sister group relationships and position of the strepsiptera, an order of insects of endoparasite origin with nine extant families including 600 described species, about the beetle.

The Ladybug Caucasian (Coccinellidae) is a red seven-spotted ladybug with black and white spots on the elytra, long legs, and antennae rising on legs in the green inflorescence with these types of beetles have an omnivorous diet of fungus, leaves, beetle larvae, aphids, and other plant-eating pests. They have a size of 0.8-18mm and live in Asia, Europe, and North America where they are seen in colors of red, orange, yellow, black, grey, and brown. Squash Beetles (*Epilachna borealis*) though, like ladybugs

and can be confused as them, are similar to cucumber beetles due to their yellow to orange colors but have black spots on each wing covering and four smaller ones on their thorax. The Squash Beetles' diet is gourd or squash plants, thus giving them their name, and live in North America with a size of 7-10mm. Carrion beetles (Silphidae), however, are not so omnivorous as these ladybug beetles feed on decaying animals and plants in North America present in 21 species. The Carrion beetles' size is 9-30mm and their color is black, and similar to the carrion beetle type exists the Flesh-eating Beetle (Dermestidae) which feast on bodies that have been decomposing for weeks and has the unique ability to digest keratin, which can be utilized to clean bones for identification. Their size is 10-25mm and their colors range from red to brown and black, with long bodies. But rather than consuming fungus like the Ladybugs do, Rove beetles (Staphylinidae) live on fungi within the moist, humid environments around the world being about 1-35mm long, colors range from reddish-brown, brown, red, and yellow to black and iridescent green and blue. The diet of the Rove beetles is plant and insect-based.

The comes Weevils (Curculionoidea) which have long snouts, an oval or slender-shaped body, and are the size of 6mm of colors ranging from brown to black. There are 97,000 species of them, making the Weevils one of the most common types of beetles holding a diet of crops, which can alter specifically crops depending on the species. It is due to this that they live in crops, crop storage facilities, and homes. Unlike the Weevils though, Ground beetles (Carabidae) live in many habitats on the ground, have volatile defensive secretions which make loud popping sounds, and hold a diet of other insects, larvae, worms, snails, slugs, and seeds of plants including weeds. With 40,000 species around the world (more than half less than the Weevil) mostly having a metallic or shiny black, they come in a range of colors and sizes but all have ridged wing covers. Scarab beetles (Scarabaeidae) have stout bodies with mostly bright, metallic colors that 30,000 of their species have around the world at a size of 1.5-160mm.

Their scavenger diet is carrion, decaying plant matter, and Dung Beetles (Scarabaeoidea), which are brown to black colored, shiny beetles which feast on feces, live on all continents except Antarctica, and their size is 5-50mm. Stag beetles (Lucanidae) are a well-known European species and the largest terrestrial insect in the UK with large jaws which make for easy identification, 1,200 species exist, their diet consisting of plant sap, and a size of 0.5-5 inches with colors of red, brown, green, and black. Soldier beetles (Cantharidae), also called leatherwings, are a type of beetle that secretes a toxic defensive chemical and have soft wing cases and straight sides with 35,000 species existing and eating plants in sizes of 8-13mm and colors ranging from yellow to red with brown or black wings. And finally, there is the Firefly (Lampyridae), which, not many may know, but is a type of beetle named for their bioluminescence at night, giving them many names such as glowworms or lightning bugs. Fireflies live all over the world in various habitats with varying physical features with their diet depending on the exact species ranging from flower nectar or pollen to smaller fireflies and soft-bodied ground-dwelling animals.

Unto Coleoptera (since we have discussed various types), a specific name for beetles, are generally thought to be more closely related to the Neuropteroidea, clades sometimes placed at superorder level of holometabolous insects with over 5,700 described species (containing the orders Neuroptera, Megaloptera, and Raphidioptera) than to any other group of Holometabola (s superorder of insects within the infraclass of Neoptera) see possible synapomorphies of beetles and neuropteroids

being in presence of a gula in the adult, holding an oblique attachment of the forewings with an enlargement of the costal field (humeral and epipleural areas of the beetle elytron), having a form of the ovipositor, have a structure of the stemmata (larval ocelli), and have an absence of cruciate cervical muscles (35, 51, 64, 81, 87a).

These features, however, have been examined in very few Coleoptera, which are to be more specifically defined. Mickoleit (81) concluded that the beetle ovipositor represents the plesiomorphic form of that found in neuropteroids so that Coleoptera could not be the sister group of any particular neuropteroid order; but Hamilton (48) argued evidence of wing venation that Coleoptera and Megaloptera are sister groups and the evolution of beetles from megalopteran-like ancestors that is supported by the elytral structure in Lower Permian beetles resembling that of a megalopteran forewing, and a hindwing from the Upper Permian, which has characteristics of both groups (20, 35, 89, 90). Though I believe with enough research done on enough beetles, the families, and the orders of insects, we can find their connections and relations to one another as well as their place in their species and ecosystem.

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September 7, 2022

# The University of Arkansas

## MEMORANDUM

TO: Ms. Olivia Cash, ENGL-1033: Technical Composition II Instructor



FROM: Maximiliano Garcia, University of Arkansas Sophomore

DATE: September 07, 2022

SUBJECT: Major Project 1 – Business Correspondence: Student Orientation Claim Letter

to the Department Chair

### PROMPT

For the first major project of ENGL-1033, Ms. Olivia Cash has asked the class to rhetorically create a business letter (there are three kinds including inquiry, claim, and adjustment letters) and a memo as well as follow their format and structure. We will later be doing peer revisions for each other's rough draft papers in the form of physical hard copies. Before then I am to turn in the draft before September 9<sup>th</sup> as well as utilize the components of rhetorical situations as discussed in Grant-Davies' article, "Rhetorical Situations and Their Constituents," which includes the usage of exigence, my role as a rhetor, the understanding and communication to the (target) audience and working with alongside conveying my constraints that could have gotten in the way. Recently I was unable to turn in this course's Weekly Assignment #2 (the rough draft of Major Project 1) on time due to workload from other classes, but with discussion and talking to my instructor we were able to compromise on an extension period which only reaches the end of September 8<sup>th</sup>.

### ROUGH DRAFT

I began the rough draft by creating an outline that contained the writing prompts and warm-ups I have written in class for Technical Composition II, ideas I have been wanting to include in my business letter, information and dates involving the student orientation I went through emails from 2021 that were sent to my university email, and research from the University of Arkansas websites. With this information gained and put into words along with my style, I began writing about my experiences and memories of the student orientation before creating an introductory business letter paragraph introducing myself to the department head of computer science, Dr. Jia Di, who will be my (target) audience for this assignment. All while making it clear through this memo and the business letter that my instructor is also part of the audience as I am following what was asked of me by her and the major project. I went on to create the format for the business letter and merge the information from the outline into the business letter while making sure the ideas and writing flowed and connected to each other well without going too far off from the intended purpose of the major project. The purpose of the major project is to discuss the issues and solutions of dorm selection during the upcoming freshman's transition to the University of Arkansas as I find it to be flawed in my research and experience. While it does take a while to get to the focus of the major project, I believe the context to be essential and important to paper in order to keep the illusion up of me sending the business letter to Dr. Jia Dia which holds my stance with student orientation. However, upon reviewing the requirements for the major project, I can see that many parts of my paper will have to be deleted.

### REVISIONS AND SUBMISSION

Upon completion of the first draft after some hours of work and the creation of the conclusion paragraph which makes for a good business letter send-off, I reread the paper, applied adjustments where needed, and plugged my rough draft into grammar checking software before calling it a day. As previously mentioned, the rough draft will likely have to be cut down in length to 2 pages as there is a limitation to how long the Business Letter and Memo are supposed to be. The rough draft was printed on the day it was due (09/09) before the class where peer revisions took. Afterward, I began applying criticisms and suggestions from my instructor and peers to my work in order to create the Final Draft and ultimately turn it in on Blackboard.

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UarkSophmore.com

September 07, 2022

Dr. Jia Di

Department Head of Computer Science and Computer Engineering, Rodger S. Kline Chair

University of Arkansas

504 J.B. Hunt Building

Fayetteville, AR 72701

Dear Dr. Jia Di,

Enclosed is a rather conventional claim letter of exposition and evaluation for the student orientations which occur once a year and could cause more perpetual difficulty for the next incoming students if the problem remains unaddressed.

Hello, this is Maximiliano Garcia, and I am a Sophomore at the University of Arkansas pursuing a Major in Computer Science with the intention to gain a Bachelor of Science in Computer Science (B.S.C.S.) and a Business Minor in Information Systems (ISYS). I hope to acknowledge an issue I see present in the student orientation I have experienced and still see some students go through said problem to this day. I am planning to get Amber Roth, the Senior Associate Director of Admissions for Orientation, involved in the future as well. Student orientation can be a very important and crucial period before the beginning of an academic year at a university filled with events, but unfortunately, the one the University of Arkansas attempts to host in the middle of the summer is condensed into a single day. The event that is thought to be very exciting could be undermined by the tiredness following the hours of moving around a tenth of the campus as the parents accompany their kid who is about to enter the university in a few weeks, as was the case for me. As far as compressing various events, presentations, speeches,

and a barrage of information into a couple of hours can go with the possibility of it all going wrong, the University of Arkansas' student orientation surprisingly does not. In most cases, it would be expected that the time restraint would see many cons arise, and while sure, the whole orientation process is not without them, the day itself is close to being flawless due to its well-executed planning. Unfortunately, it was the end of the student orientation on June 9<sup>th</sup>, 2021, when my problems began to arise.

As my parents and I went to the Union Mall after Student Union Day, the optional tours for a single dorm of your choice began. They insisted on doing them despite my exhaustion from the student orientation and inability for us to find a tour for my dorm, Humphreys Hall. After some struggle, we learned that it was going through renovations, but they had the Yocom (the sister residence building to Humphreys) tour. While it was not the best-looking dorm and my parents were not too fond of it, I liked the name and cost of Humphreys too much to let it go so I decided to stick with it. And by the end of the dorm tour, for a dorm that was not mine, to begin with, it marked the true end of Student Orientation Day. So not only was my dorm going through renovations at the time, which was an issue for me, but I also did not get the chance to know what my room looked like in person. If I had known, I would have chosen a different dorm on the spot. Given that A-Week is a student orientation in itself serving as a reminder that Student Orientation Day could work better by being split into two days possibly occurring either near each other or in two different months rather than being put into one single, long day, that, Dr. Jia Dia, brings us to the main issue at hand I have been meaning to address. That issue is the flaws of the dorm selection process at the University of Arkansas and its consequences.

The complication of dorm selection is huge and should have more emphasis placed on it during the entire student orientation process, not just Student Orientation Day. A viable solution I propose is giving it its own day called "Dorm Tour Day." Why this is important is because the new freshmen of the University of Arkansas will be spending 1-2 semesters in these dorms which is about 5-10 months on campus, so it should be a concern for the University of Arkansas when a student ends up living in a place where they feel they do not belong in or should be and it could have been avoided. Now while you could have an in-person tour of all the dorms online via <https://housing.uark.edu/halls/>, which may likely be linked on the housing portal, and you could also choose one dorm tour to optionally go on after the end of the long student orientation day, there is not much of an obligation to do so unless there was a day dedicated to it. The idea of the Dorm Day Tour is different from the optional and reserved On Campus Tours that can take place almost any day of the year, as it is going to occur in the summer like Student Orientation Day, which has students and their parents going inside all the dorms (if they choose to), and could fix many issues with the student orientation process and, potentially, Student Orientation Day.

Upon attempting to search for any talks or information related to dorms through emails on both my university and main email account, there was none to uncover, proving my statement on the

lack of focus there is on the student's choice of dorms. Along with the Dorm Tour Day, there should be access to reviews (criticisms, suggestions, and shared memories) from the staff and students who lived in the dorms from the University of Arkansas which are to be included on the Dorm Tour Day, Housing Portal, and Residence Hall University of Arkansas sites so they can prove to be of use to the students and their parents. I believe that to obtain these reviews they would have to be gained from location ranking sites and resources such as Google Reviews and Facebook Reviews as well as University-of-Arkansas-required conducted surveys answered by the staff and students in order for there to be an improvement in the residence halls from the input and for the new students and their parents to make the right choice. It is through these reviews that the incoming students will learn more about the culture, environment, cleanliness, and experience to be expected in the dorm as well as the floor they will be staying in, and if they decide to go to another dorm, the process to transfer via the Housing Portal should be made easy.

Overall Dr. Jia Dia, these are my suggestions and ideas for resolving the dorm choice problem present at this university as those I have talked to like friends and acquaintances of mine likely have wished that they had a different dorm, but then again, a lot of that sentiment could potentially be due to various other factors such as location convenience, size, dorm community, parking, how new it is, and the costs that are to be paid for it. These have been my thoughts about the dorm situation, and I hope to hear from you soon as well as for the both of us to get these problems resolved and have a good one.

Sincerely, (Word to Google Docs formatting issue)

A handwritten signature in black ink, appearing to read "J. M. Garcia".

Maximiliano Garcia

Sophomore at the University of Arkansas

mg081@uark.edu

Enclosure: Student Orientation Issue

September 6, 2022

### SI Session Week #2 Worksheet Lactose

and Lactase:

- Lactose : a sugar in milk
  - “-ose” = Carbohydrates
- Lactase : an enzyme that breaks down lactose
  - “-ase” = Isomerase
- Lactose intolerant people do not produce the lactase enzyme needed to break down sugar

### Chemistry Overview

- Protons: Positively charged, located in the nucleus, atomic number
- Electrons: Negatively charged, located whizzing about/circulating the nucleus
- Neutrons: Neutral charge, located in the nucleus
- Isotopes are atoms of the same element with different numbers of neutrons
  - Nonpolar covalent bonding: share electrons between two atoms equally
  - Polar covalent bonding: share unequally between two atoms with oxygen
- Hydrogen bonding: the attraction between (-) oxygen and (+) hydrogen resulting in a hydrogen bond
- Functional Groups:
  1. Hydrogen bond - The attraction between (-) oxygen and (+) hydrogen resulting in a hydrogen bond
  2. Hydrocarbon bond - Organic molecules containing both (C) & (H)
  3. Carbon bonds - Have 4 electrons on the outer shell and can make up to 4 bonds

### PROPERTIES OF WATER

- High heat capacity
- High heat of resistance to temperature change
- Can dissolve many molecules
- Hydrophilic molecules: cling to other water molecules
- Hydrophobic molecules: cling to other polar surfaces
- Water has a high surface tension

### Carbohydrates

- Function: Quick fuel and short-term energy storage in organisms playing a structural role in plants

- Examples: Cell walls and wood

## Lipids

- Function of Fat: Usually of animal origin, solid at room temperature, store energy, insulate against heat loss, and form protective cushioning for internal organs (visceral fat)
- Function of Oil: Usually of plant origin, liquid at room temperature, and store energy in seeds
  - Saturated vs Unsaturated (What's the difference?):
    - Saturated fats are fatty acids with the maximum number of hydrogens which most animals have in their fat
    - Unsaturated fats are fatty acids containing 1+ double bond(s) which are bent, having one fewer hydrogen atom, and are not tightly packed
      - Double bonds cause oils to be liquid at room temperature

## Proteins:

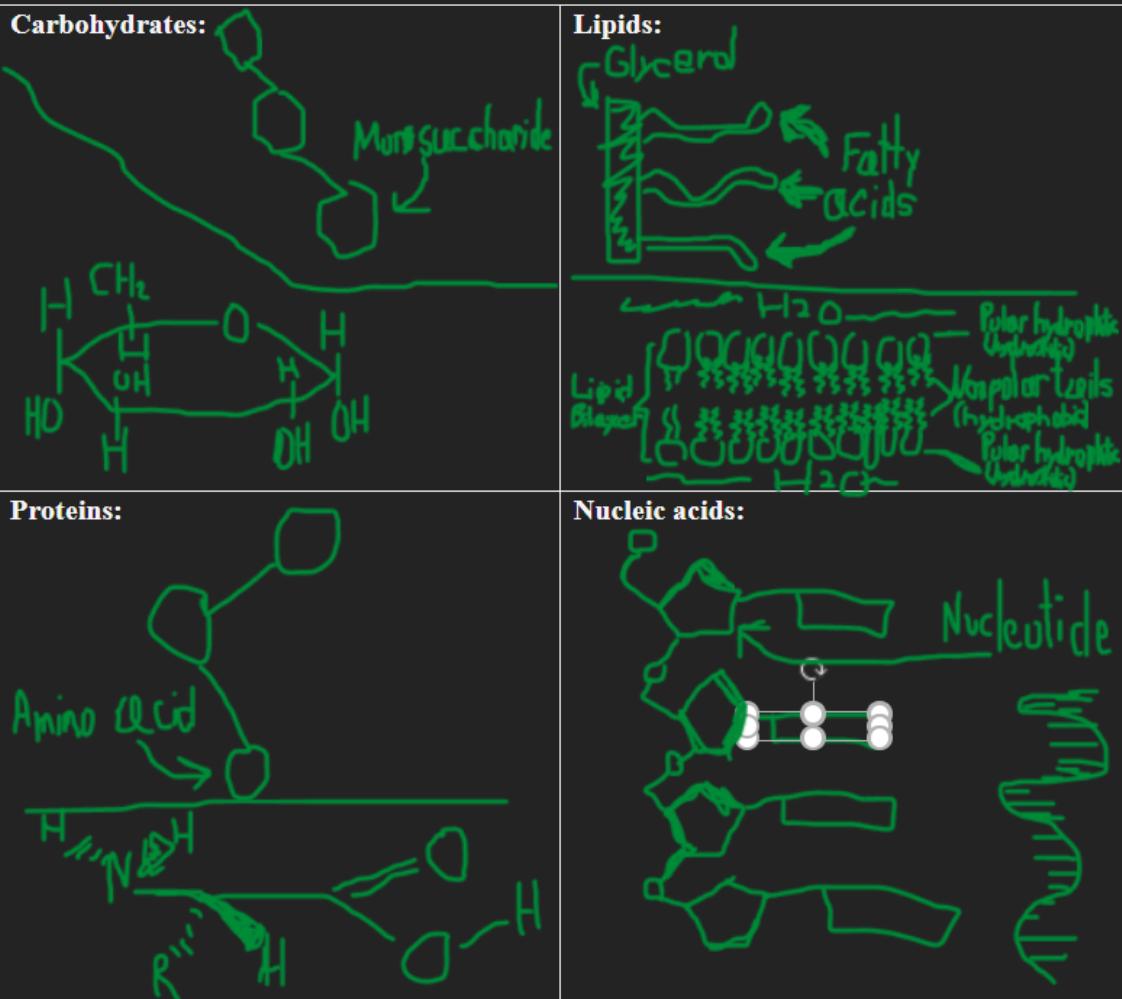
- Proteins are wide-range (in function and structures) polymers composed of amino acid monomers.
  - There are 2 types of proteins...What are they?
    - Structural proteins give support like keratin and collagen
    - Enzymes speed up chemical reactions
- List and describe the 4 levels of organization:
  1. Primary structure is the linear sequence of the amino acids
  2. Secondary structure occurs when the protein makes certain types of structures in different places which can occur in different proteins
    - a. Alpha helix and Beta sheet
  3. Tertiary structure is the final 3-dimensional shape maintained by various types of bonding between R groups
  4. Quaternary structure is found in proteins with multiple polypeptide chains
    - a. Separate polypeptide chains are arranged to give this highest structure while lactase contain 4 of the same polypeptides to gain its final structure

## Nucleic acids:

- Long chain molecule made up of nucleotides.

- Nucleotide is a molecule made up of phosphate, deoxyribose (sugar), and nitrogen-containing base.

**Draw out the 4 Macromolecules:**



July 14, 2022

# Old Chemistry Notes

## Fall Semester of 2019 for NWACA Chemistry

Taught by Mr. Golden at Haas Hall Academy Bentonville

Period Table of Elements Accurate Atomic Masses (A)																	
H	He	Li	Be	B	C	N	O	F	Ne	Na	Mg	Al	Si	P	S	Cl	Ar
1.008	4.003	6.941	9.012	12.011	14.012	15.00	16.00	19.00	20.18	22.99	24.31	26.98	28.09	30.97	31.99	35.45	39.91
Li	Be	B	C	N	O	F	Ne	Na	Mg	Al	Si	P	S	Cl	Ar	Ar	Ar
6.941	9.012	12.011	14.012	15.00	16.00	19.00	20.18	22.99	24.31	26.98	28.09	30.97	31.99	35.45	39.91	39.91	39.91
Be	B	C	N	O	F	Ne	Na	Mg	Al	Si	P	S	Cl	Ar	Ar	Ar	Ar
9.012	12.011	14.012	15.00	16.00	19.00	20.18	22.99	24.31	26.98	28.09	30.97	31.99	35.45	39.91	39.91	39.91	39.91
B	C	N	O	F	Ne	Na	Mg	Al	Si	P	S	Cl	Ar	Ar	Ar	Ar	Ar
12.011	14.012	15.00	16.00	19.00	20.18	22.99	24.31	26.98	28.09	30.97	31.99	35.45	39.91	39.91	39.91	39.91	39.91
C	N	O	F	Ne	Na	Mg	Al	Si	P	S	Cl	Ar	Ar	Ar	Ar	Ar	Ar
14.012	15.00	16.00	19.00	20.18	22.99	24.31	26.98	28.09	30.97	31.99	35.45	39.91	39.91	39.91	39.91	39.91	39.91
N	O	F	Ne	Na	Mg	Al	Si	P	S	Cl	Ar						
15.00	16.00	19.00	20.18	22.99	24.31	26.98	28.09	30.97	31.99	35.45	39.91	39.91	39.91	39.91	39.91	39.91	39.91
F	Ne	Na	Mg	Al	Si	P	S	Cl	Ar								
19.00	20.18	22.99	24.31	26.98	28.09	30.97	31.99	35.45	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91
Ne	Na	Mg	Al	Si	P	S	Cl	Ar									
22.99	24.31	26.98	28.09	30.97	31.99	35.45	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91
Na	Mg	Al	Si	P	S	Cl	Ar										
24.31	26.98	28.09	30.97	31.99	35.45	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91
Mg	Al	Si	P	S	Cl	Ar											
26.98	28.09	30.97	31.99	35.45	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91
Al	Si	P	S	Cl	Ar	Ar	Ar	Ar	Ar	Ar	Ar	Ar	Ar	Ar	Ar	Ar	Ar
30.97	31.99	35.45	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91
Si	P	S	Cl	Ar	Ar	Ar	Ar	Ar	Ar	Ar	Ar	Ar	Ar	Ar	Ar	Ar	Ar
31.99	35.45	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91
P	S	Cl	Ar	Ar	Ar	Ar	Ar	Ar	Ar	Ar	Ar	Ar	Ar	Ar	Ar	Ar	Ar
35.45	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91
S	Cl	Ar	Ar	Ar	Ar	Ar	Ar	Ar	Ar	Ar	Ar	Ar	Ar	Ar	Ar	Ar	Ar
39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91

The Periodic Table of the Elements is a grid of elements arranged by atomic number. Elements are color-coded by group: alkali metals (pink), alkaline earth metals (light blue), transition metals (purple), post-transition metals (orange), halogens (yellow), and noble gases (light green). The table includes element symbols, atomic numbers, and atomic masses.

**Avogadro's Number/Constant**  
 $N_A = 6.022 \times 10^{23} \text{ mol}^{-1}$

**Molarity Stochiometry**

A periodic table where elements are sorted by their ionic charge trends. The table shows a color gradient from +1 to -1 across the rows and columns, with a legend indicating the range for each color.

**Percent Composition**

Finding the Percent Composition (by Mass) [the example in this problem will be Aluminum Oxide]

- Formula:  $(\text{Mass} / \text{Total Mass}) \times 100\%$
- $\text{Al}_2\text{O}_3$ :  $(26.98 \times 2) / (26.98 \times 2 + 16.00 \times 3) \times 100 = 52.93\%$
- $\text{Al}: (\text{Al} / (\text{Al} + \text{Al} + \text{O} + \text{O})) \times 100 = 52.93\%$
- $\text{O}: (\text{O} + \text{O} + \text{O}) / (\text{Al} + \text{Al} + \text{O} + \text{O}) \times 100 = 47.07\%$

$\text{Mass \%} = \frac{\text{Mass}}{\text{Total mass}} \times 100\%$

**Empirical Formula**

52.14% Carbon  
13.13% Hydrogen  $\rightarrow \text{C}_2\text{H}_6\text{O}$   
34.73% Oxygen

**Ideal Gas Law**

$PV = nRT$        $1 \text{ L} = 1000 \text{ mL}$   
 $K = T_c + 273$   
 $\text{atm} = \frac{L \cdot atm}{mol \cdot K}$   
 $\ell = 0.08206 \frac{L \cdot atm}{mol \cdot K}$   
 $1 \text{ atm} = 760 \text{ torr} = 101.3 \text{ kPa}$

Room Temperature is 25°C  $\rightarrow K = C^\circ + 273.15$   $\rightarrow C^\circ = F - 32/9$

**Heat Capacity Formula**  
 $q = m \times C_p \times \Delta T$   
Temperature change ( $^{\circ}\text{C}$ )  
Specific heat capacity ( $\text{J/g} \cdot ^{\circ}\text{C}$ )

As all things should be... Perfectly balanced...

February 18, 2022

Maximiliano Garcia

Mrs. Nicole Rikard

ENGL 1023 – Composition

18 February 2022

### Impact of Digital Stories and Atmospheric Methane

On an Earth with limited resources, time, effort, and space, it seems that humanity has been taking their home for granted. As most organisms, people, and objects have an expiration date, it can leave you wondering how much time this planet has before it does meet its end and if we will go down with it or before. Many scientists and people say that its end could be caused by the catastrophes such as the sun exploding in half a billion years, warfare, global climate change, our intelligence (for creating tools that could be misused and lead to our downfall), resource crises that could lead to resource exhaustion by 2050, ecological, political, environmental, or societal collapse, pandemics, and asteroid collisions. All of this is a lot to think about and can be very overwhelming when you think too much about it. Late 2020 was an interesting time for me personally as a pandemic negatively affected my life and the globe around that time, and still does today. I was just beginning to look at the news and most of it ended up being generally pessimistic during that period, seeing as negativity is what usually makes the headlines rather than short wholesome stories about charities or innovations in science that can help us in the future when we implement them. It overwhelmed me and for some time I did believe that to ignore the bad things about this world would be a bad thing in of itself, making me another problem because I would be participating in ignorance. But yet, after months of giving up on looking through the news and giving some time to myself after Late 2020, I found that it was, ironically, ultimately ignorant of me to overindulge myself in the negative thoughts, beliefs, and media consumption, because it destroyed me and took some time to come back from. But was it the fault of the world, humanity, media, or my own?

With various forms of media, what are digital stories if they are not told in person, and how has it changed the storytelling medium? Digital stories are types of stories that connect and reach the audience through scripts, audio, and pictures through practice of the creator's digital and computer (editing) tools. Digital stories focus on various topics including motivating change in people's lives and improving the beliefs of others. Authors of digital stories can do this by sharing their experiences, messages, and information with the Internet. The digital age has allowed for people across different locations and countries to have their voices amplified and heard, their health and wellbeing aided, and the chance for strangers to interact with one another, befriending or even falling in love. How the Modern Age relates to digital stories, being a relatively new multimedia project present throughout the Web, are how it serves its place in collecting this world's telling of others' publishes, cultures, and memories, while preserving it for as long as the article remains up on the site and leaving behind the writer's legacy and preserving a part of history. The structure in these digital writings encompass technological literacy (skills to use an electronic device for publicizing the work), visual literacy, media literacy (ability to access and evaluate music, audio, graphics, and images), and information literacy (ability to retain and analyze information). The viewing of these digital stories, though not in paperback or physical format, can be now easily accessible through the internet and provide knowledge and enlightenment within the 2-10 minutes of reading of these narratives, brought straight from the storyboard to life through the screen.

Worrying digital stories that have recently been blowing up in popularity throughout news platforms the past couple of days are about the relevant dilemma of climate change that humanity has been facing for years since the early 1980s, particularly the uphill trend in atmospheric methane ( $\text{CH}_4$ ). Atmospheric methane is a powerful and important greenhouse gas that has been accumulating for the past 200 years as it was a 21<sup>st</sup> century shift from fossil-fuel that nearly tripled since preindustrial times. The rise of atmospheric methane means that in a feedback

loop created with other factors of climate change scientists would have to run more stabilization tests to solve the emissions of methane before global or nationwide scale(s) are put into action to reduce the gas which is dangerous and hazardous in the quantity that is being produced. With the help of satellites and aircraft to track and report the methane levels in the different atmospheres like the stratosphere, environmental scientists have so far been able to conclude that it is 28 times as potent as carbon dioxide (CO<sub>2</sub>) and discover the many sources of its potency and growth in the environment. Maps of these findings have even been calculated and projected by NASA computers which show that even if traces of methane are important on our planet to trap a significant amount of heat as well as keep it warm and inhabitable. The sources of these problems leading to atmospheric methane include industrial pollution from gas and oil emission expansion, heat and pressure generated from fossil fuel extractions, carbon-based fuels, enlarging herd livestock of agricultural ruminants, rice cultivation, landfills, ice cores (mainly in the Arctic), and biomass burnings which have been used as a biomass energy source. Bacteria and microprobes present mostly in oxygen-poor environments such as natural wetlands or marshes have all been accountable for the 85% of methane emission growth the past 15 years and continue to exponentially rise, even if methane makes up .00017% of the Earth's atmosphere. Unfortunately, during this time "according to the University of Washington's Alex Turner, an atmospheric chemist, trends have proven to be "enigmatic." He added there are no convincing answers."

Global warming could be imminent as though many researchers are looking into this issue and searching for practical solutions to apply in the future, they come to similar speculations as Alex Turner as the clock ticks and time is not waiting for the human race in a world where the global average temperature is rising. And though there may be 1,900+ parts of global methane concentrations per billion caused by the upsurge in 2007 and "warm feeding the warm," as put by University of London Earth scientist Euan Nisbet, where it has been causing rising sea levels, floods, and worsening droughts worldwide not all hope is lost. Looking through three articles by Premium Times, Common Dreams, and Global Monitoring Laboratory, while putting into consideration all the other various articles I researched to give an idea of how to tackle the problem and how different publishing sites view, analyze, and demonstrate information on the increase of atmospheric methane.

Starting off with Premium Times, which published the article today, states in the headline that "Scientists alarmed over 'dangerously fast' spike in atmospheric methane" while emphasizing on term climate change. The Premium Times article begins to introduce the reader to the situation as scientists being in a panic and worry over the issue of the numerous spikes in recent findings to information about its slow growth and "Enigmatic patterns" as described by Mr. Alex Turner. What this article does different from the others is that they describe to the audience what Nigeria and their government have been doing to reduce short-lived climate pollutants like methane and their cooperation with the International Intergovernmental Panel on Climate Change (IPCC). The Premium Times Article also goes into the measures which the United States, in their global methane pledge with other countries, have taken to prepare for curbing methane, which has greatly affected the country, by having the U.S. National Oceanic and Atmospheric Administration (NOAA) stating that "scientists already have enough knowledge to help governments take action." Even so, the article goes into the Carbon Mapper and the Environmental Defense Fund releasing a statement that oil and gas facilities, such as the 30 southwestern ones they drew findings from which emit about 100,000 tons of methane per year (equal to the annual warming impact of half a million cars), must be reduced as quick as possible. The Common Dreams article takes a similar approach to the Premium Times talking about the fear of scientists and the "fresh government data" of the problems we are facing today with the subject of methane. The Common Dreams article was also published today on February 9<sup>th</sup>, though unlike Premium, it mentions the feedback loop, what an "observer" has to say, and thawing permafrost as a cause of methane emissions. The Common Dreams article goes to say that what we are all doing and US President Biden's plans to cut down U.S. methane emissions amidst the COP26 with the European Union are not enough as the United States remains the second-largest emitter of methane gas in the world. The Common Dreams article, like Premium Times, finds a not a permanent solution to the problem, but a way to effectively cease the potentially unstoppable global warming that may result as stated in two statements by McNamara, deputy policy director of the Climate and Energy Program at the Union of Concerned Scientists. "Oil and gas operations continue to release untenably high and entirely

preventable methane emissions ...[and] Swiftly reducing methane emissions...will result in significant and much-needed near-term climate progress." The third and final article by Global Monitoring Laboratory is different from the previous two as unlike those, it serves more as a scientific report filled with heavy terminology and diction, many findings, and a lot of data about the methane emissions trend represented through different charts and graphs. The target audience that this article aims it would very likely be more towards those into science being able to understand the vocabulary being used and go through the data with a lot of understanding as well as those researching the topic such as I. While the first two were aimed more towards a general audience who is interested in reading the news, the world's problems, and about environmental science. Overall, the similarities between these articles are the urgency to solve atmospheric methane as efficiently and soon as possible whilst giving very informative and valuable information on the environmental topic.

Based on what can be gathered from all these articles as that the current best method seen fit by global climate experts, atmosphere researchers, and environmental scientists to overcome the environmental complication is to reduce, change, and improve our atmospheric chemistry, hydroxyl consumption, tropospheric ozone generation, water vapor formation in the atmosphere, and our human activities. Methane production cannot be avoided, but to dramatically reduce and remove methane with the same commitment and focus that is given to carbon dioxide and its billions of dollars invested for removing CO<sub>2</sub>, along with our understanding to move into development and act are the necessary steps that need to be taken instead of thinking about it if we already have the methods for our planets treatments, even if they are not cures. We may not be scientists in a world where a third of its nature has been destroyed and may be doomed to be ruined at some point, but it is important not to lose hope and begin helping in valuable ways. We can by supporting organic farming practices, eating less red meat, supporting farms that use digesters, converting greenhouse gas pollutants into energy with others (if possible), and becoming active in our communities. Everything about this issue could be brought back to the beginning, the question and argument of who the problem and cause of all the unfortunate events and crises is going around in the world today, before, or in the future. I believe the answer to problems beyond our control is no one's fault, things are just the way they are, have been, or are about to become. Individually when facing an issue like this, instead of finding someone or something to blame, find a solution to the temporary problem instead of worsening it because sometimes, the problem is not always a bad thing. Perhaps the problem is an overabundance of a good thing, and without moderation or control to keep it in check, it goes out of control and becomes a negative thing. Like digital media, the news, negativity, or methane in the atmosphere. To come to understand world issues like methane and not be fooled by misinformation can teach a person how to take care of themselves even if they are in a tough position, just like how though humanity has jeopardized its future for now, it can still make the push to save itself and change things for the better because they can be. University of Washington Astronomy Professor and astrobiological research leader Donald Brownlee once said, "People really should have an understanding of the fate that lies ahead," and I believe in that. In Brownlee's investigations of Earth's life-sustaining systems, biology, astronomy, and paleontology, he found that if everyone could comprehend the grand scale of issues that the planet is facing rather than narrowing it to just our own, humanity can educate themselves and make an effort to potentially push towards saving what we have left. And that is how we can save ourselves.

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January 23, 2022

Maximiliano Garcia

Mrs. Rikard

ENGL 1023 – Composition

01/23/22

Weekly Writing Assignment #1: Prompt #2 – Metal Gear Solid 2 (video game)

My friend, it is nice to see you again though you do leave me curious after you told me that you do not like video games like Metal Gear Solid 2: Sons of Liberty. So, I am just wondering, why if you have not played it? (1) Perhaps you did not get the chance to play other “Tactical Espionage Action,” war/gun violence, stealth, action-adventure, dystopian, blockbuster, surrealist, and dark story-driven titles like those in the Metal Gear Solid series yet. So I am going to tell you the reasons why this game is a masterpiece. Created in 2001 for the PlayStation 2, as the highly anticipated sequel to Metal Gear Solid (1998) for the PlayStation 1, it was groundbreaking at the time for its innovative graphics showing the community that this was a game of the likes that no one has seen or played before. Sons of Liberty, though exhilarating, ludicrous, introducing new mechanics, controls, and being ahead of its time, took the series in a different direction in terms of storytelling and where the following games would progress from that point. At the time it made a very subversive decision of changing the protagonist you played throughout the entire series after the end of the first chapter, the Tanker Incident. This led to heavy criticism upon release from many fans who wanted to play Solid Snake, arguably the best character in the franchise. What the player is given was Raiden, a Fox Hound rookie, who, although was a very well-written character with many struggles and underwent a lot of development in this game, was hated by most. It was a tough blow for the game and Raiden, as it took a long time for him to become a beloved character by fans after very drastic changes in later installments and fans choosing to revisit the game. The dialogue is interesting as it allows the player to connect with the characters, sympathize with the villains and heroes, and allows for most of the surprises to hit close to home. Sons of Liberty even has debatably one of the darkest, most terrifying, and compelling plot twists in gaming history, leaving you pondering over humanity’s technological achievements over the past several decades and where that leaves us in the future based on the good and bad things it has allowed people to cause. Who knows Friend #1, you may find yourself in love with this game, the series, and the stealth action genre if you do choose to take on this experience.

Well, excuse me my good friend, but someone is knocking on the door so I must go check. But as I was saying I very much recommend this game to you, and oh- Would you look who it is, it's Friend #2. How are you doing? I was just having a talk with Friend #1 about Metal Gear Solid 2 as I just finished it earlier today. They have not played the game yet so I was telling him a bit about it and to consider checking it out. Wait, what's that? You've played the first one? Friend #1, you are going to want to listen to this because there is a lot more information about this game I want to talk about as well as many complex topics later. Oh, he's busy going to a university English class with his VR headset on right now, never mind. (2) Friend #2, I honestly find it astounding that a video game like this even exists, revolutionizing the whole industry of gaming and providing us with yet another solid story on the likes of MGS1. Even though it seemed like it was playing to our nostalgia of the first game and rehashing material from the first game, it was genius how it all came into play later in the game's story and film

section of compiled cutscenes which add to a runtime of around 5 hours and 25 minutes. While there was a lot of content to see in this game compared to the former installment in the series or other stealth genre games at the time, there was a lot to play in the lengthy two chapters as well. I would say the whole playthrough was worth over 24 hours and very much worth my time. In Metal Gear Solid 2: Substance, an updated release of Sons of Liberty, there are many VR Missions and an extra story mode called “Snake Tales.” I personally believe that Snakes Tales solved all the problems for the hardcore fans who were not prepared for the legendary soldier to pass down the torch to newcomer Raiden, who underwent hundreds of VR Missions (not making the player not all too different from him as both are playing a game), believing it prepared him for the Big Shell Incident chapter, and further desensitize human life. Now Friend #2, I know you are disappointed that I could not wait for you to play this game with me and that you “really” wanted to try it out, but I just had no idea that you were coming to drop by. We could have planned out the day, where we take turns on the game for a while and then go downtown to get something to eat and hang out. But hey, maybe some other time since Friend #1 is busy trying to become a better writer by following through some kind of Mark Twain simulator at the moment. Anyways.

Moving on to the game’s heavy topics, I do not mean to ruin the game for you but given that you heard a lot about this game series already you probably know a couple of spoilers. So, in getting wrapped in the convoluted plot of Solid Snake and Hal Emmerich, a character from the previous game, creating an organization dedicated to denuclearizing and destroying every country’s supply and access to powerful bipedal, anthropomorphic, mobile nuclear weapons known as “Metal Gears,” you come across a greater enemy. Artificial Intelligence and a secret organization of influential conspirators called The Patriots who both have control over the entire United States’ politics, trends, media/entertainment, history, etc. They even have control over the player, but that will be explained later. Tragically, as the player, you watch Raiden end up becoming the “bad guy” in this story after going through his brainwashed backing of being a child soldier in a war-torn country returning, being placed into virtually simulated missions to become “the ultimate soldier” in the likes of Solid Snake but at the cost of his individuality, watching many people die and failing to save them, and realizing that the people he was talking to in the mission through Codec transmission and working for, including his lover and colonel, were just artificial intelligence created by The Patriots which was using him and you, the Player, into completing their mission. Raiden ends up being put in a situation to kill his godfather, codenamed Solidus Snake, the supposed the main villain in this game, because of what he put Raiden through as a kid in Liberia, the assignment that the AI and The Patriots need him to carry out after dehumanizing him (the AI had very chilling talks with Raiden/the Player criticizing humans as well as revealing their intentions to control humanity and their history by rewriting it and creating context) in order to stay in power, an important character’s child (it gets complicated), and for Raiden’s survival.

In protecting his life and those around him (for now), allowing himself to be persuaded by The Patriots, and killing his father for personal motives, Solidus never got to fulfill his true objective which was to destroy The Patriots and free the American people from their control, ultimately giving back their freedom. However, Solidus’ death meant that The Patriots would continue to rule over the United States. Overall, I have been talking for quite some time now Friend #2, and you can probably see how much this existentialist game has to offer, and I’m simply giving a proportional overview. In such a work of fiction diving into the consequences of simulation, artificial intelligence, technological advancement,

censorship, misinformation, media consumption, politicization, the digital age, war, virtual reality, differences/disagreements in ideologies, not knowing your purpose/lack of understanding, trends, and nationwide control over the masses, it all can get you thinking about the world we are living in now opposed to over 20 years ago where technology and the ability to use it was not as advanced as it is today. The unfortunate part is that today, it is seen being misused by various countries and those in power to control the masses like sheep (and possibly the United States as well, whether you look at what the government or corporations have done before and could very well be doing today). And yes, this fictional game does go into existentialism and implements Western Philosophy into its work, very much touching upon the atmosphere, plot, each character's beliefs, conflicts, and giving them all a resolution. For Raiden, he was left questioning his purpose and the environment at the end of the game not knowing what to trust or believe anymore until Snake appears and assures him that reality and truth, though fictional and only as real as your brain tells you, is worth pursuing and fighting for to create understanding and purpose. To decide for yourself and what to do for the future, your legacy, and what you pass on to others rather than someone else doing it for you. Through words, ideas, movies, games, assignments, essays, writings, analyses, stories, culture, poetry, connections, emotions, and experiences these things from other people teach and show you them, and you also can leave these things behind to share with the future. That is what I leave to you my friends, #1 and #2, and English professor.

(3) My purpose for my first audience was different from the second on the basis that I tried not to spoil anything and give them a broad idea of what the game was like for someone who never played any of the MGS series or a genre similar to it. This was because I would like this first friend to experience the entire game all for themselves and go into it without much being given away. However, for the second audience, I had a more interesting discussion about the game as they played the genre before a previous entry. Friend #2 was somewhat familiar with this game to an extent, so I was fine with going into the story a bit, even if the first overheard, but they were distracted with technology. I would say that the first audience felt like a recommendation while the second felt more like an exchange.

(4) My constraints with the first audience were to not scare them off or tell them what the game was about completely, or they would lose interest and not play it, especially since it gets very crazy and somewhat convoluted. As a result, I gave them surface level and background information so they can have a gist of what Metal Gear Solid 2 is, while for the second audience I got into the game, its story, and deep topics it presents to the player. The reason I gave more information to the second friend was due to fewer constraints considering that they would know what I was talking with them about, no introductions were needed but rather a talk about the game's details and what mainly stuck out to me without going too in-depth. Now, I did not use the same material from the first or copy-paste it to the second paragraph, but rather turned it into a storyline of the other friend suddenly showing up to simply connect the two and make what I wrote more linear with a smooth transition from Part 1 to Part 2.

(5) The exercise has helped me warm up for this class since I have not written in a while and though it was not a well-written rhetorical essay, it was a hypothetical situation where I feel like I was talking to two different audiences about the same situation. I did try to put the two together as I usually do in an essay, but to have them separated as they do give me a good understanding of different points and

methods to display the information I write about to the reader in a somewhat rhetorical manner. To understand and respond to a rhetorical situation is to know what you are talking about before analyzing it and sharing your knowledge of it to the different audiences.

January 31, 2022

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Mrs. Rikard

ENGL 1023 – Composition

01/31/22

Weekly Writing Assignment #2 - Music Artist Prompt: Jeff Buckley and his album, Grace (1994)

Jeff Buckley's story begins in Orange Country, California on November 17, 1966, as the son of cult songwriter and psychedelic folksinger, Tim Buckley, and classical music-talented mother, Mary Gilbert. As a kid growing up, he moved around often and stated in interviews that this childhood experience had taught him how to identify the kind of people the strangers he met were, especially his father who sadly passed from a drug overdose. Buckley knew something was wrong with the man since the first and only time he got to meet him was when he was 6 years old as Tim was too busy working at his desk to pay attention to his biological son or interact with him. Since then, Jeff has made sure to avoid whatever path his father took so he did not end up like him and though his encounter with his father personally affected Buckley growing up, it also gave him the career opportunity to begin creating albums. It began with a performance he did to serve as a tribute to his father, giving him recognition in the music community and garnering interest from record labels who were eager to do business with Buckley, but that occurs later on.

Before reaching that point of making alternative, folk, and blues rock (all types of hybrid rock music created around the 1960s-70s from independent underground music) Jeff Buckley was learning to play music in high school and studied it (as well as music theory) in the Los Angeles Musicians Institute, ultimately playing in several jazz, reggae, heavy metal, and funk bands. After graduation, he emerged from New York City's club scene in the 1990s as one of the most remarkable musical artists of his generation, acclaimed by audiences, critics, and fellow musicians alike. So, taking inspiration from Led Zeppelin's Robert Plant, Van Morrison, Queen, Jimi Hendrix, The Who, Kiss, and Pink Floyd, he used what he admired about them and learned from his music background to build a strong, and well-remembered short-lived career. In signing a contract with Colombia Records, his performance began with Mick Grondahl, Matt Johnson, and producer Andy Wallace after the December 1993 release of his four-song Colombia Records EP, Live At Sin-é. All of which was before finishing his upcoming album, Grace (1994), and starting a solo career he was touring clubs, lounges, coffeehouses in North America and Europe with his group until the album released on August 23rd and changed everything.

Grace ended up earning Jeff Buckley the "Gran Prix International Du Disque – Academie Charles CROS - 1995" prestigious award as well as a couple of gold record certifications while he was still alive and working on his second album, "My Sweetheart, The Drunk", early in 1997 just before tragically dying on May 29, 1997, in Memphis, Tennessee near Mud Island Harbor from a drowning accident. While a friend was with him at that time and they were enjoying themselves, Buckley decided to spontaneously go swimming in the Mississippi River but the friend, worried about the radio getting wet, focused on putting it some place far from the water and when he turned around he saw that Buckley was gone and taken by the current. Jeff Buckley was only 30 years old, and it was a shock for those close to him (even

the manager) who could not believe what happened, but all recalled that weeks before the incident, he was not acting like himself, but rather impulsive, careless, erratic, energetic, and unusually intrigued with the concept of death. Inevitably, the posthumous release of Sketches took place a year later after his death, serving as a gloomy reminder of the artist's vast potential and talent which was able to be preserved in its 10 tracks that carried on the dreary elements from the first album (with a mix of pop sensibility).

Moving onto the debut album Grace (1994), exploring love, death, pain, and heartbreak, it was an intense record of which not many musicians have heard before, and truly made Buckley one of the most popular alternative artists of the 1990s. The tracklist includes Mojo Pin, Grace, Last Goodbye, Lilac Wine, and So Real, the first five songs of Grace which are about a man who misses their woman and desires for them to return, but knows it cannot happen due to their communication has ended. It turns the man into someone who believes after losing the lover, they have lost everything and got nothing else to lose as they resort to alcoholism as their world burns. The tone and atmosphere go from a flame bursting with great intensity to a compassionate, slow, and sad state of composure where the lilac wine the singer drinks does not relax the person as expected but rather causes him to miss the lover more. For the next four songs, I believe to make up the second part of this album, see the So Real, a cover of Leonard Cohen's Hallelujah, "Lover, you should've come over", and a cover of Benjamin Britten's Corpus Christi Carol. In comparison to the first section of the album, unlike being an introduction to the pain and unhealthy habit of the singer that goes on when a breakup is first taking place and happens, this part goes into the search for answers and how to overcome the loneliness. The singer explains that in trying to find someone who is out of your life, you will become further lost and broken for a longer period of time, thus making the process of acceptance and understanding more difficult than it is supposed to be. But rather than going through this necessary process, the musician, making this album based on his own romantic experience with a past lover, shows the listener that putting his faith in religion, blaming his youth and inexperience, and getting inspiration and peace from nature, while continuing to wait for her to make him whole again does not work.

The final proportion of the album is the last three songs, Eternal Life, Dream Brother, and Forget Her reveal frustration and anger, similar to the second track, Grace, returning temporarily in Eternal Life as the singer directions his problems to the world and romance for everything that is wrong with them and the wrongs that were done to him, believing that they are digging his grave when it was just himself. After the criticism he begins to curse the two concepts, including the religion and nature he tried to find tranquility in but failed to, leading to questions about emotions (happiness), humanity, nature, love, God, the afterlife, and the world being exclaimed as no one answers his cries for help. The passionate agony lessens from the end of Eternal Life to Forget Her, where he calms down as a result of development from this whole emotional experience which was mostly caused by the musician. The last song, in my opinion, being the most realistic, understandable, and balanced song in an album filled with interesting stories, locations, themes, changes in intensity and tone, and great heights and lows takes us to a closure where the man's restless and loud nights and days are going away, and his feelings and misjudgment start to settle down. He realizes that in being the fool and allowing his powerful emotions to cloud his senses as well as stir misdirection, he allowed his stability and broken heart to worsen instead of fixing it, accepting the reality of his situation, and letting go of all that cannot be returned or given back. In the new comfort of his company and loneliness, is moving on but cannot help but blame

his former lover for being the reason his heartaches still hurt him, thus being unable to forgive her. But as he starts to forget her, his “still,” empty, sad heart slowly fades away and heals, meaning that he is giving himself the time (fade) and effort (heal) to cure their broken heart.

Overall, this is the end of the 11-track album, with the message depicting that a person in a failed relationship will continue to struggle from it as long as there is no forgiveness, forgetting, self-care, or resolution with the former lover who is out there somewhere already moved on or going through a similar process. It shows that if you are not careful or know what you are doing, then romance can sadly end up damaging the heart and mind of somebody whether it is unintentional (foolish) or intended (toxic/wicked). A friend of Jeff Buckley, who knew a lot about what was going on with him, would say he lived a very complex, private, and sad (romantic) life which would have been interesting to see dived into in the albums he could have created either about his childhood, previous lovers, or other experiences. Whether he is at fault or not for his failed romantic relationships depends on whose side of the story you look at which brings the only main constraint of this album is the lack of perspective from the woman’s side. Because we do not know who is completely right or wrong and if was one-sided or not, it can only be generally agreed upon that the two lovers could not make what they shared function so it had to end whether either one wanted or not, leading to suffering occurring to the both (it is implied that the lover of Buckley cried for him but not much is known on how intense her emotions were in contrast to his in the real world or depicted in the album). Even so, the greatly appreciated album reached number 174 on the Billboard charts the same month of its release date, People magazine labeled Jeff Buckley as one of the 100 most beautiful people, and the record reached 2+ million sold in just the US by 2007. Rolling Stone and many big names in the music industry (including David Bowie and Robert Plant) proceed to recognize the musician and their work as one of the greatest in the music world despite the number of years since Buckley’s death. The legacy of Jeff Buckley continues to grow along with his fanbase of rock legends, new artists, loyal followers, and entirely new generations of music lovers with this cult following keeping Jeff Buckley’s music as vivid and unforgettable as it was on the day of release.

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October 20, 2021

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HIST 2013 – History of American People 1877-Present

10/20/21

### Midterm Exam Essay: Question #3 Response – The Plains Indians

Before 1840s America, there was a time when the West was viewed as a desert inhabited by savages and wilderness. But soon, the idea of the West was about to change. After the 1840s, the West became this place of opportunity, adventure, and rugged individualism following U.S. victory in the Mexican-American War in 1848 and the California Gold Rush in 1849, which saw many Americans traveling to the desolate land recently acquired from that war. The West, filled with natural resources, space, and diverse geographic and climatical regions, saw many immigrants and a capitalistic economy run by the federal government placing military, land grants, and subsidies upon it. Before the 1840s, the West originally belonged to Native American tribes such as the Plains Indians, Sioux, Lakota, Kanton, Dakota, Pueblos, Navajo, and Apache. Fundamentally, there was bound to be a conflict between the United States military and Native Americans over this land that the tribes were trying to protect from the expansion of American territory.

The Plains Indians began to increasingly clash with American citizens and the U.S. military after the Civil War ended in 1865 because of the U.S. government further encroaching onto their lands, culture, and tribes. When the Native Americans were defeated by the U.S. military (due to the lack of unity, technology, and immunity to diseases), the Natives had no option but to give up most of their property to the United States. The loss did not mean that the Natives gave up completely, even after giving in to government demands and being told that they were a vanishing people, soon to go extinct. Rather, the remaining 250,000 Natives by the end of the 19<sup>th</sup> century managed to challenge federal control, keep their tribal cultures, adopt modern modes of life, and assimilate as individuals into white society. In other words, instead of “walking the white man’s road,” they walked a road of their own that took a lot of time and effort to pave.

The assimilation of Plains Indians into modernization (initiated by the U.S. government and its citizens) began with treaties for more land in return for less money than was asked for, “goods and services”, and partially counterproductive programs that promoted modernization, civilization, and Christianity. These treaties, on the other hand, also did not give Natives independent access to economic or natural resources, nearly led to the extinction of bison, and overlooked the injustice taking place with the government who were unable to provide the rations to the Indians needed to survive (an example being 20% of the Blackfeet population dead from winter starvation). The government did not do much against the U.S. military either. The military was still killing tribe members in incidents like the Wounded Knee (1890), in which 300+ Natives were murdered. Yet, during this rough and cruel time for Natives, their tribes

became a fascination and attraction to the American public in their Native reservations because they believed the Native Americans, an inferior savage race, would undoubtedly die out or go extinct soon (during the time). The tribes would have to learn to adapt to many different environments and circumstances taken over by the Whites, such as the Glacier National Park, where the Blackfeet had to treat the visitors well, wear clothing to appease the tourists, and oblige to rules that denied them of their treaty rights to hunt or fish in their territory.

The same unfairness can be shown, especially in the Dawes Severalty Act of 1887, which was a government effort to turn Natives into individualized American family farmers during a widespread white movement of ranchers, farmers, and miners moving into Native American land. The Native farmers would be given about 160 acres of land unfit for farming for 20 years which was to become all theirs if they succeeded, however, because the Act was poorly planned it failed. Such Acts like Dawes faced the same issues where they had a premise that benefitted the government and Whites, but not so much the Natives (who were taken advantage of), nor did they account for the economic and environmental realities. These catastrophes meant that the federal acts were more challenging than a help to the Natives hence placing them in a tough position. They had to come up with an alternative method of survival against the government's assimilation plans, so the Natives' solutions were dances and celebrations, created to attract, sway, and appeal to the American public in huge masses with the Ghost and Sun (moved to the Fourth of July) dances. By doing this, the Native Americans could retain their tribal dignity as the tribes, and their culture became popular in American media and modernized with the idea of the West.

The interest in the Native Americans, cowboys, and the "Wild" West ultimately led to the romanization of the West, in which they became subjects of photography, films, shows like Buffalo Bill, dime novels (Billy the Kid, Wild Bill Hickok, and Tombstone), novels (Mark Twain), their history, and other forms of entertainment/media. It was also the romanization of the West which was said to be the end/decline of the wars and casualties between Native Americans and the U.S. government/military but was still far from the legal battles between the two that would ensue to this day. Because admiration is the furthest notion from understanding, the romanticism of the West was not able to shed much light on the harsh reality of what Natives had to go through, the injustices they faced, and the gritty, dangerous reality of what it was like to genuinely live in the West. After all, it was not until 2010 where Elouise Cobell's Federal Lawsuit was settled and finally gave a full accounting of the century-long oversight of native lands, amends from the U.S. government's failure to honor the autonomy of Native American tribes, and an honest economic settlement with the allocation of the \$3.4 billion and 160 acres of reservation land that was agreed. Yet despite all the government's efforts today to correct itself and make things right between themselves and the Native Americans, history does not forget.