COLLEGE OF COMPUTER AND INFORMATION SCIENCE

Academic Year 2024 – 2025

PRACTICUM NARRATIVE REPORT

Jonathan Russell De Pano BUNQUIN

Practicum Adviser: Prof. Michael James Gnilo

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In Partial Fulfillment of the Requirements for the degree of

Bachelor of Science in Computer Science

Overview of the Practicum Engagement

Company Background

Lattice Semiconductor Philippines is a regional branch of Lattice Semiconductor Corporation, a U.S.-based company known for its expertise in low-power, field-programmable gate arrays (FPGAs). Headquartered in Hillsboro, Oregon, Lattice Semiconductor has a global presence with operations in key locations including San Jose, Shanghai, Singapore, Penang, and Manila. The Philippine office, located in Muntinlupa City, serves as one of the company's operations centers, contributing to its mission of delivering smart, secure, and connected solutions across industries such as communications, computing, industrial, automotive, and consumer electronics. With a strong focus on innovation and efficiency, Lattice continues to empower its teams worldwide to solve complex problems from the Edge to the Cloud.

Nature of Tasks Given

During my internship, I worked on three main projects: developing a dashboard tracker for my team, creating a Python script to automate JIRA release notes, and using Python scripts to generate consistent images for their application.

The dashboard tracker is a challenging task. I had no direct guidance, and even within the team, no one had a background in software development or software engineering. I had to rely entirely on the knowledge I had gained throughout college—applying logic, designing and connecting databases, planning ERDs, and using software engineering principles. The only resource I was given was an Excel file. From that, I cleaned and prepared the data, then built the entire system from scratch.

The system is not going to be hosted, and is only accessible for the local user, allowing the team or the users to have their data confidential. For data visualization, I integrated Chart.js due to its flexibility, ease of integration with web technologies, and ability to create interactive and responsive charts. After a few weeks, I presented the

software to the team, gathered their feedback, and made improvements based on their suggestions.

The second project involved automating JIRA release notes. This is the most challenging task I have faced during this practicum. JIRA is a bug-tracking system used to log and monitor software issues. My task wasn't to resolve these issues, but to develop a Python script that could automatically generate release notes based on the issues filed. Each issue had a unique identifier and description, and the script helped streamline the process of compiling these into a structured Word document.

Lastly, I worked on solving inconsistencies in the images used for the FPGA libraries in their web application or the company's online help. The team had been facing issues with image sizes and formatting—some were too large or too small, and others had inconsistent text styles. To address this, I used Python scripts that generated standardized images. These images were then imported into Adobe FrameMaker using WebWorks ePublisher to ensure they displayed correctly on the web.

Total Hours Rendered

At Lattice Semiconductor Philippines, trainees are required to work from 8:00 AM to 5:00 PM during the weekdays. While Mondays are designated as work-from-home days, I often still choose to work onsite. The office provides a more spacious and comfortable workspace compared to my set-up at home. It also offers perks like free air conditioning, complimentary snacks, an extra monitor, and fast internet—making it a more productive environment for me. The time I received the projects needed for me, I started doing them since I only got a very limited time. Table 1 shows how the hours were distributed across the different projects I worked on during my practicum.

Table 1. *Hours allocation for projects*

PROJECT	TASK	HOURS ALLOCATED
Dashboard tracker	Data Preprocessing	8

Dashboard tracker	Data Modeling and System Design	16
Dashboard tracker	System Development	140
Generating Images and Adobe Framemaker Contents	Generate Image Using Python Script	40
Generating Images and Adobe Framemaker Contents	Adobe Framemaker Contents Clean Up and Images Importation	80
JIRA Release Notes Automation Using Python Script	Develop Python Script	40
TOTAL		324

As part of my practicum, I was expected to complete 40 hours per week, which should have taken around 8 to 9 weeks. However, due to holidays and school-related matters that required me to take occasional leaves, the duration of my practicum was extended, and the expected end date has been moved.

In total, I rendered 324 hours, successfully fulfilling the required number of hours for my course.

Presentation of Output

Dashboard Tracker

The Dashboard Tracker is a custom tool designed to monitor and manage tasks assigned to individual users—referred to as "writers"—within the software technical publication team. It allows each writer to view all their assigned tasks, including those that are pending, completed, or currently unchanged. Additionally, users can assign tasks to other writers, making it a collaborative and flexible tool for task management.

Each task entry in the tracker includes important details such as the document name, section, subsection, comments, assigned subject matter expert, task completion status, and a color-coded indicator that reflects the task's current state or required action. This visual and structured approach helps writers quickly understand what needs to be done, reducing the time spent navigating through raw data in Excel files.

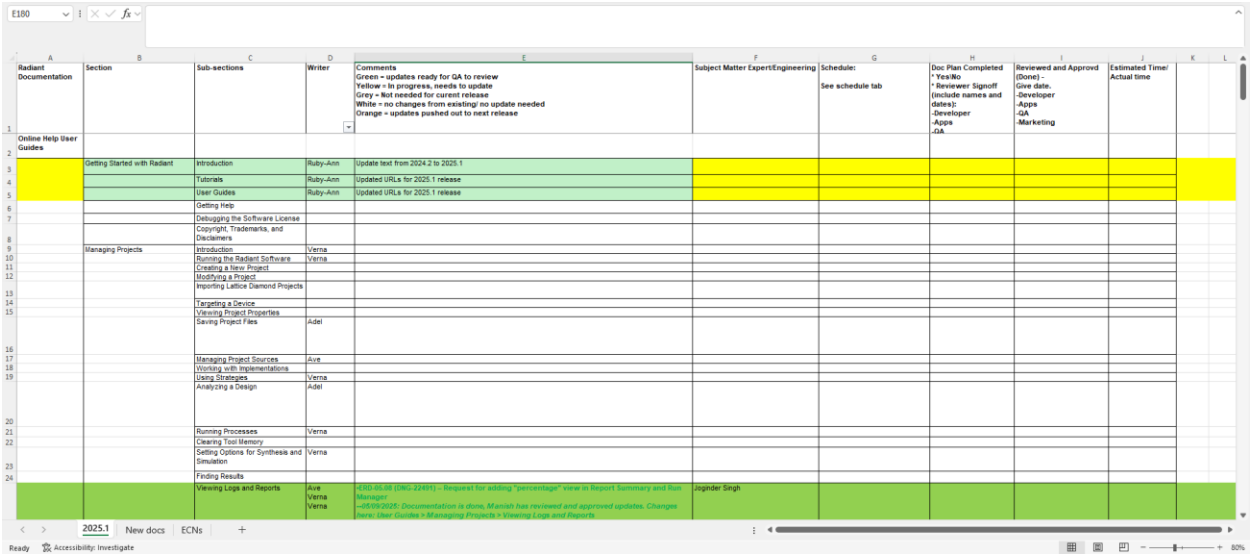
This tool significantly improves task visibility and efficiency for the team. It is specifically tailored for the software technical publication group I was assigned to during my practicum and is not used company-wide at Lattice Semiconductor. Nonetheless, it has proven to be a valuable resource for both the writers and the team manager, offering a clearer and faster way to track progress and responsibilities.

Preprocessing

The only resource provided to me was a raw Excel file, which required significant preprocessing before it could be used effectively. The dataset contained several issues: duplicate entries, blank fields, inconsistent formatting, and unnecessary whitespace. One major challenge was the inconsistency in how writer names were recorded. For instance, the same person might appear as "Jonathan" in one entry and "Bunquin" in another—making it difficult for the system to recognize them as the same individual.

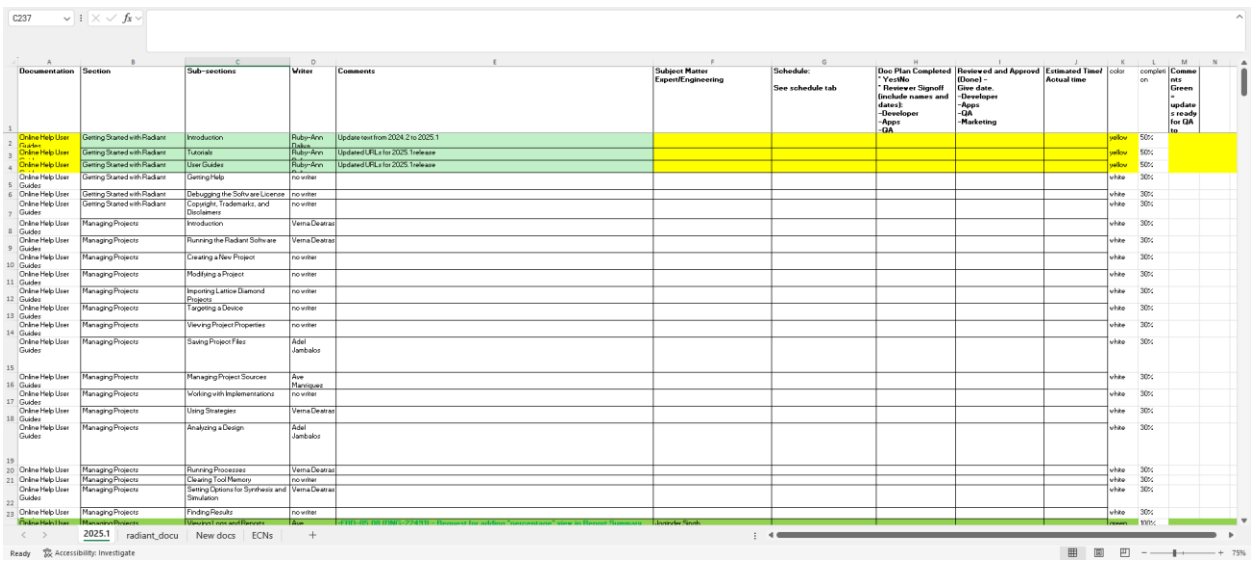
Another complication was the absence of a proper 'color' column. Instead of storing color data in a readable format, the original file used cell highlighting to indicate categories or statuses. This method is not efficient for automated processing. To resolve this, I created a new column labeled 'color' and manually extracted the cell highlight colors into this column. This allowed the system to interpret the data accurately and consistently.

Figures 1 to 2 illustrate the transformation from the raw dataset to the cleaned and structured version, highlighting the improvements made during preprocessing.



Radiant Documentation	Section	Sub-sections	Writer	Comments Green = updates ready for QA to review Yellow = In progress, needs to update Grey = Not needed for curent release White = no changes from existing/ no update needed Orange = updates pushed out to next release	Subject Matter Expert/Engineering	Schedule: See schedule tab	Doc Plan Completed * Yes/No * Reviewer Signoff (include names and dates): -Developer -Apps -QA	Reviewed and Approvd (Done) - Give date. -Developer -Apps -QA -Marketing	Estimated Time/ Actual time
Online Help User Guides									
	Getting Started with Radiant	Introduction	Ruby-Ann	Update text from 2024.2 to 2025.1					
		Tutorials	Ruby-Ann	Updated URLs for 2025.1 release					
		User Guides	Ruby-Ann	Updated URLs for 2025.1 release					
		Getting Help							
		Debugging the Software License							
		Copyright, Trademarks, and Disclaimers							
	Managing Projects	Introduction	Verna						
		Running the Radiant Software	Verna						
		Creating a New Project							
		Modifying a Project							
		Importing Lattice Diamond Projects							
		Targeting a Device							
		Viewing Project Properties							
		Saving Project Files	Adel						
		Managing Project Sources	Ave						
		Working with Implementations							
		Using Strategies	Verna						
		Analyzing a Design	Adel						
		Running Processes	Verna						
		Clearing Tool Memory							
		Setting Options for Synthesis and Simulation	Verna						
		Finding Results							
		Viewing Logs and Reports	Ave Verna Verna	<ERD-05.08 (DNG-22491) – Request for adding "percentage" view in Report Summary and Run Manager --06/09/2025: Documentation is done, Manish has reviewed and approved updates. Changes here: User Guides > Managing Projects > Viewing Logs and Reports	Jogjinder Singh				

Figure 1. Raw Data in Excel



Documentation	Section	Sub-sections	Writer	Comments	Subject Matter Expert/Engineering	Schedule: See schedule tab	Doc Plan Completed * Yes/No * Reviewer Signoff (include names and dates): -Developer -Apps -QA	Reviewed and Approvd (Done) - Give date. -Developer -Apps -QA -Marketing	Estimated Time/ Actual time	color	completion	Comments Green = updates ready for QA to
Online Help User Guides	Getting Started with Radiant	Introduction	Ruby-Ann Deluca	Update text from 2024.2 to 2025.1						yellow	50%	
Online Help User Guides	Getting Started with Radiant	Tutorials	Ruby-Ann Deluca	Updated URLs for 2025.1release						yellow	50%	
Online Help User Guides	Getting Started with Radiant	User Guides	Ruby-Ann Deluca	Updated URLs for 2025.1release						yellow	50%	
Online Help User Guides	Getting Started with Radiant	Getting Help	no writer							white	30%	
Online Help User Guides	Getting Started with Radiant	Debugging the Software License	no writer							white	30%	
Online Help User Guides	Getting Started with Radiant	Copyright, Trademarks, and Disclaimers	no writer							white	30%	
Online Help User Guides	Managing Projects	Introduction	Verna Deatrac							white	30%	
Online Help User Guides	Managing Projects	Running the Radiant Software	Verna Deatrac							white	30%	
Online Help User Guides	Managing Projects	Creating a New Project	no writer							white	30%	
Online Help User Guides	Managing Projects	Modifying a Project	no writer							white	30%	
Online Help User Guides	Managing Projects	Importing Lattice Diamond Projects	no writer							white	30%	
Online Help User Guides	Managing Projects	Targeting a Device	no writer							white	30%	
Online Help User Guides	Managing Projects	Viewing Project Properties	no writer							white	30%	
Online Help User Guides	Managing Projects	Saving Project Files	Adel Jambalos							white	30%	
Online Help User Guides	Managing Projects	Managing Project Sources	Ave Manriquez							white	30%	
Online Help User Guides	Managing Projects	Working with Implementations	no writer							white	30%	
Online Help User Guides	Managing Projects	Using Strategies	Verna Deatrac							white	30%	
Online Help User Guides	Managing Projects	Analyzing a Design	Adel Jambalos							white	30%	
Online Help User	Managing Projects	Running Processes	Verna Deatrac							white	30%	
Online Help User	Managing Projects	Clearing Tool Memory	no writer							white	30%	
Online Help User Guides	Managing Projects	Setting Options for Synthesis and Simulation	Verna Deatrac							white	30%	
Online Help User	Managing Projects	Finding Results	no writer							white	30%	
Online Help User	Managing Projects	Viewing Logs and Reports	Ave	<ERD-05.08 (DNG-22491) – Request for adding "percentage" view in Report Summary	Jogjinder Singh					green	100%	

Figure 2. Cleaned Data in Excel

Data Modelling

After completing the data preprocessing, I moved on to designing the database structure by creating an Entity-Relationship Diagram (ERD) using Lucidchart. The database was structured around three core tables to ensure clarity, scalability, and proper normalization. The first table, called writers, stores the names of all users in the system. Each writer is uniquely identified and serves as a reference point for task assignments.

The second table, tasks, contains all relevant task information, including the document title, section, subsection, comments, assigned SME (Subject Matter Expert), color coding, completion status, and the date the task was created. This table serves as the central repository for all task-related data.

To establish a many-to-many relationship between writers and tasks, I created a third table called tasks_writers. This junction table links the primary keys of both the writers and tasks tables, allowing the system to track which tasks are assigned to which writers efficiently.

Figures 3 to 4 illustrate the ERD and the corresponding models.py implementation developed in Visual Studio Code.

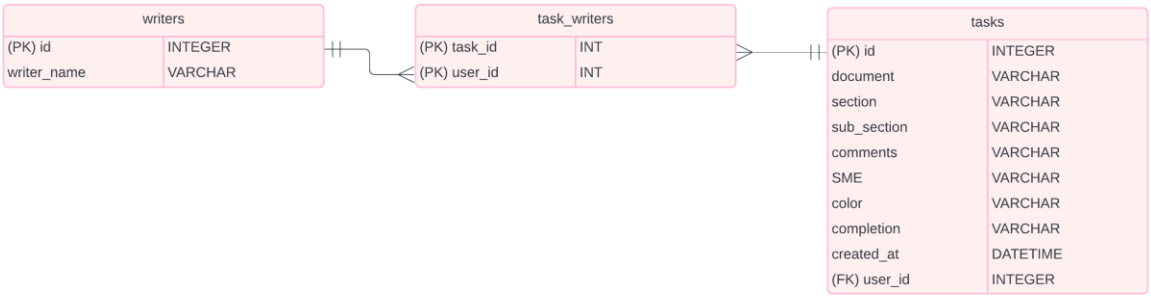


Figure 3. Entity Relationship Diagram of Dashboard System

```
Windsurf: Refactor | Explain
class Writers(models.Model):
    writer_name = models.CharField(max_length=255)

    Windsurf: Refactor | Explain | Generate Docstring | X
    def __str__(self):
        return f"{self.writer_name }"

Windsurf: Refactor | Explain
class Task(models.Model):
    document = models.CharField(max_length=255)
    section = models.CharField(max_length=255)
    sub_section = models.CharField(max_length=255)
    comments = models.TextField()
    SME = models.CharField(max_length=255, blank=True, null=True)
    color = models.CharField(max_length=50)
    completion = models.CharField(max_length=100, default='0%')
    created_at = models.DateTimeField(auto_now_add=True)  # Add this line
    Windsurf: Refactor | Explain | Generate Docstring | X
    def __str__(self):
        return f"Task {self.id} - {self.document}: {self.section} - {self.sub_section}"

Windsurf: Refactor | Explain
class TaskWriter(models.Model):
    task = models.ForeignKey(Task, on_delete=models.CASCADE)
    writer = models.ForeignKey(Writers, on_delete=models.CASCADE)
    Windsurf: Refactor | Explain
    class Meta:
        unique_together = ('task', 'writer')
    Windsurf: Refactor | Explain | Generate Docstring | X
    def __str__(self):
        return f"{self.writer.writer_name} ({self.writer.id}) assigned for {self.task.document}. ID: {self.task.id}"
```

Figure 4. models.py in Visual Studio Code

System Development

The Dashboard Tracker features two main pages: the Dashboard (or Home) and the Tasks page. Upon successful login, users are immediately directed to the Dashboard, which displays all tasks assigned to them. This design choice was intentional, as the primary users—referred to as "writers"—need quick and easy access to their task lists without having to navigate through multiple menus. The Dashboard provides a clear overview of their responsibilities right after logging in, streamlining their workflow. Figures 5 and 6 illustrate the layout and content of the Dashboard page.

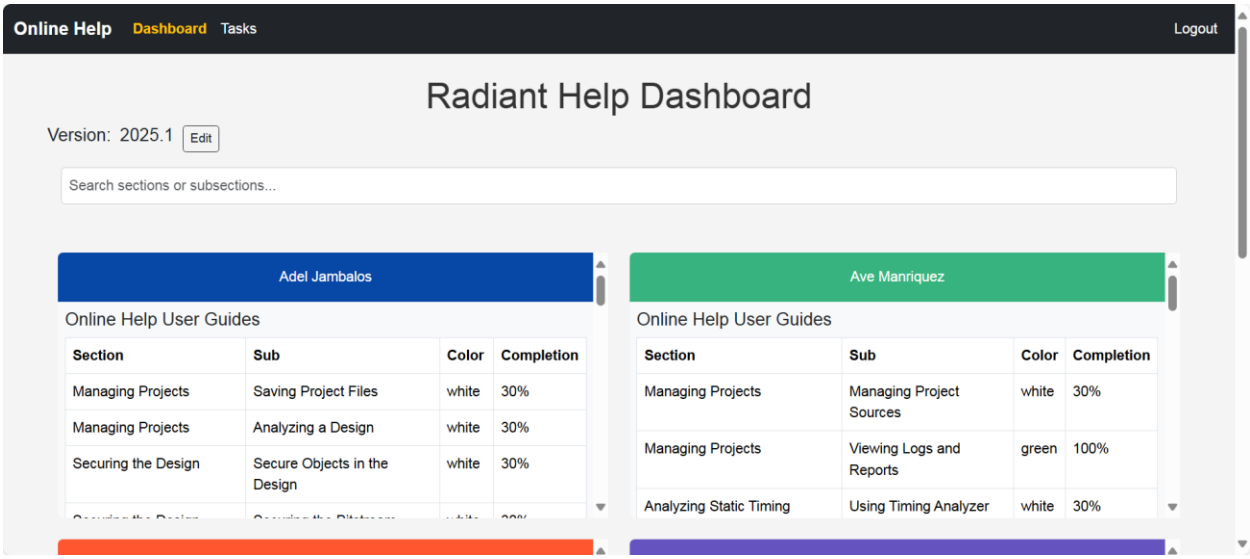


Figure 5. Dashboard Home Page – part 1

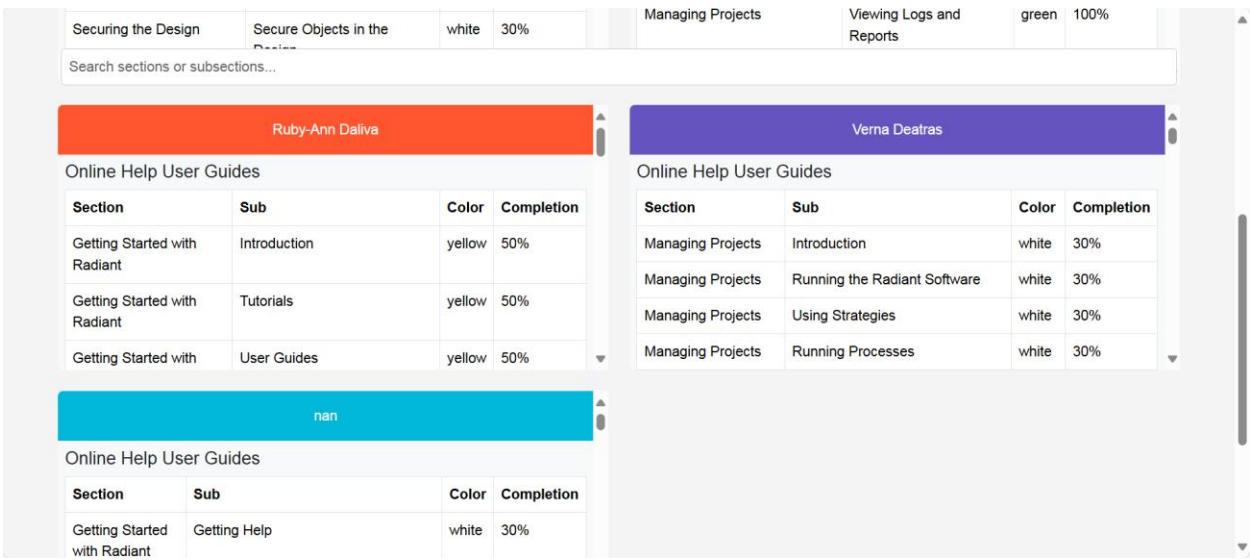


Figure 6. Dashboard Home Page – part 2

The page is organized into separate sections, with each writer having their own dedicated box displaying the tasks assigned to them. This layout allows users to quickly scan and identify their responsibilities. However, if a writer feels overwhelmed by the amount of information—especially since tasks for all writers are visible—they can simply click on their name. Each name functions as a clickable link that redirects the user to a personalized page showing only their assigned tasks. Figures 7 to 9 illustrates the redirected page that appears after a user clicks on their name.

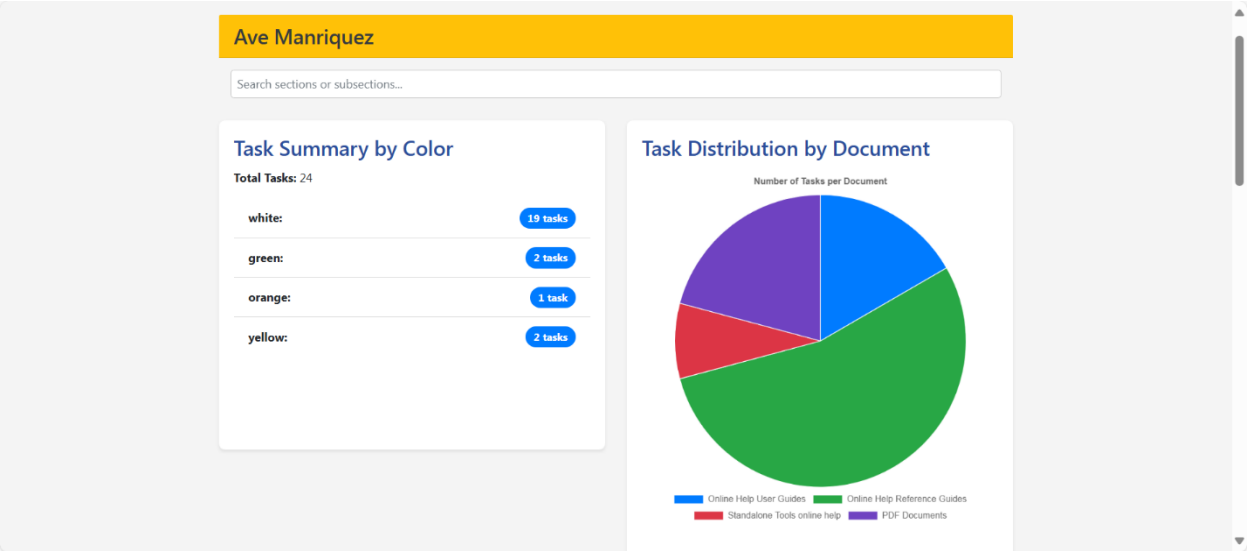
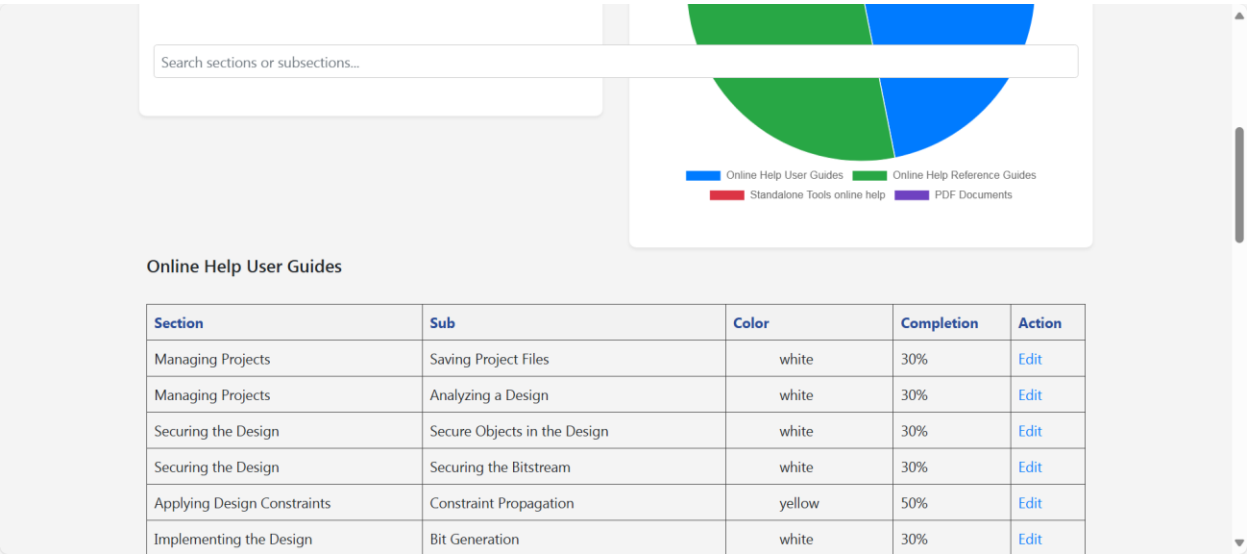


Figure 7. Tasks per user – part 1



Section	Sub	Color	Completion	Action
Managing Projects	Saving Project Files	white	30%	Edit
Managing Projects	Analyzing a Design	white	30%	Edit
Securing the Design	Secure Objects in the Design	white	30%	Edit
Securing the Design	Securing the Bitstream	white	30%	Edit
Applying Design Constraints	Constraint Propagation	yellow	50%	Edit
Implementing the Design	Bit Generation	white	30%	Edit

Figure 8. Tasks per user – part 2

Analyzing Static Timing	Using Timing Analyzer	white	30%	Edit

Search sections or subsections...

Online Help Reference Guides

Section	Sub	Color	Completion	Action
Strategy Reference Guide	Post-Synthesis Options	white	30%	Edit
Strategy Reference Guide	Post-Synthesis Timing Analysis Options	white	30%	Edit
Strategy Reference Guide	Timing Simulation Options	white	30%	Edit
Constraints Reference Guide	Lattice Synthesis Engine Constraints	white	30%	Edit
FPGA Libraries Reference Guide	Primitive Library - LFCPNX (CertusPro-NX) / UT24CP (CertusPro-NX-RT)	white	30%	Edit
FPGA Libraries Reference Guide	Primitive Library - LFD2NX (Certus-NX) / UT24C (Certus-NX-RT)	white	30%	Edit
FPGA Libraries Reference Guide	Primitive Library - LFMXO5 (Jedi-D6)	white	30%	Edit
FPGA Libraries Reference Guide	Primitive Library - LIFCL (CrossLink-NX)	white	30%	Edit
FPGA Libraries Reference Guide	Alphanumeric Primitives List	orange	10%	Edit
Tcl Command Reference Guide	Introduction	white	30%	Edit
Tcl Command Reference Guide	Launching the Tcl Console	green	100%	Edit

Figure 9. Tasks per user – part 3

On this page, users can click on individual subsections to update specific details such as comments, task completion status, and color indicators. As shown in Figure 7, a task summary is also displayed, providing an overview of the number of tasks in each category. These summary numbers are interactive—clicking on any of them redirects the user to a filtered view that displays only the tasks within that category. For example, if a user clicks on the number representing yellow-tagged tasks, they will be taken to a page showing only those tasks. This feature helps users quickly filter and focus on the tasks they want to prioritize.

Moving on to the second main section of the Dashboard Tracker—the Tasks page—this part of the system displays all tasks stored in the database. Unlike the Dashboard page, which is designed for users to view their assigned tasks, the Tasks page is primarily intended for assigning new tasks to writers. While users can still see which writers have existing assignments, they cannot edit task details such as completion status, color, or comments on this page. Its main function is to facilitate task assignment, not to update progress. Figures 10 and 11 present the layout and features of the Tasks page.

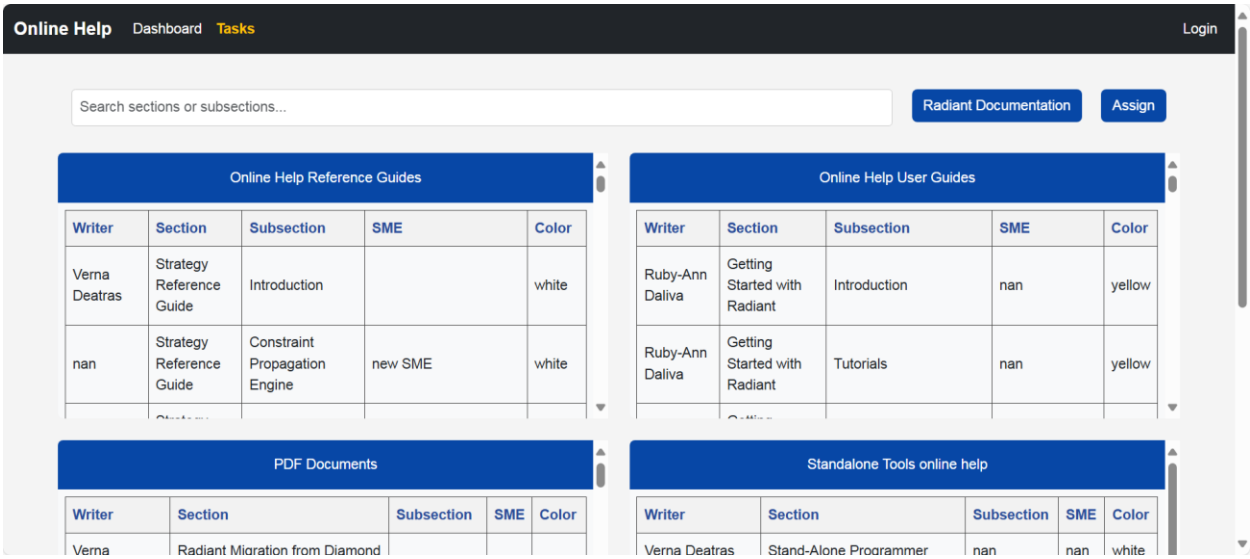


Figure 10. Tasks page – part 1

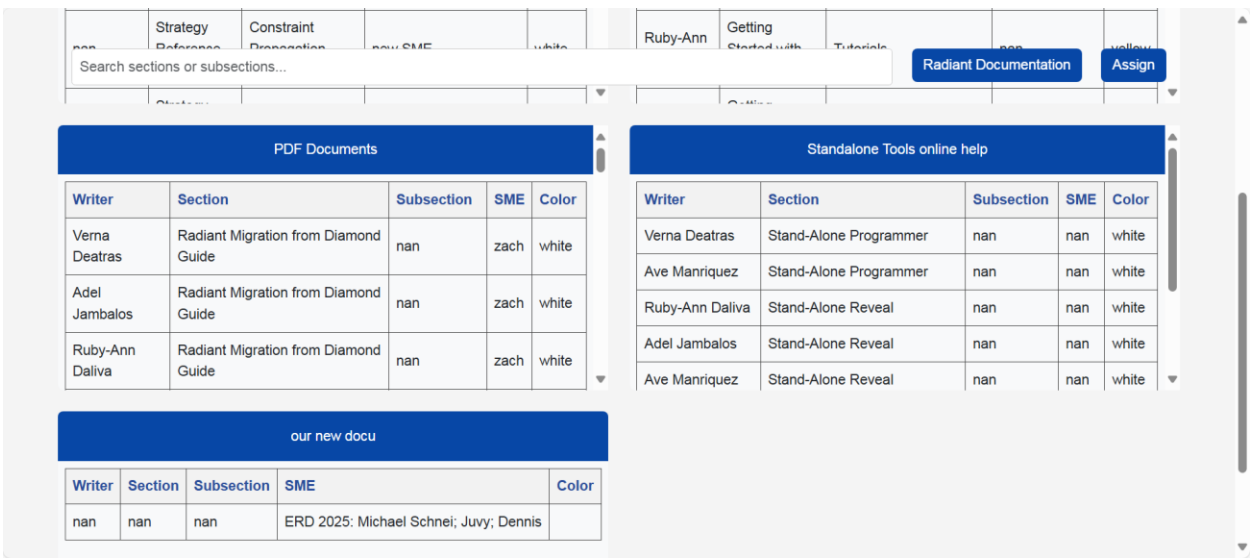


Figure 11. Tasks page – part 2

Each box on the Tasks page represents a document, and the name of the document serves as a clickable link. When clicked, it redirects the user to a new page displaying the sections within that document. These sections are also editable. Clicking on a section leads to another page that shows its corresponding subsections. From there, if a user clicks on a specific subsection, they are taken to a detailed view showing the writers and Subject Matter Experts (SMEs) assigned to that subsection. On this page, users have the ability to add or remove writers and update the assigned SME. This multi-level

navigation structure allows for efficient task management and detailed editing. Figures 12 to 17 illustrate the step-by-step functionality of this feature as users navigate through the different levels of the Tasks page.

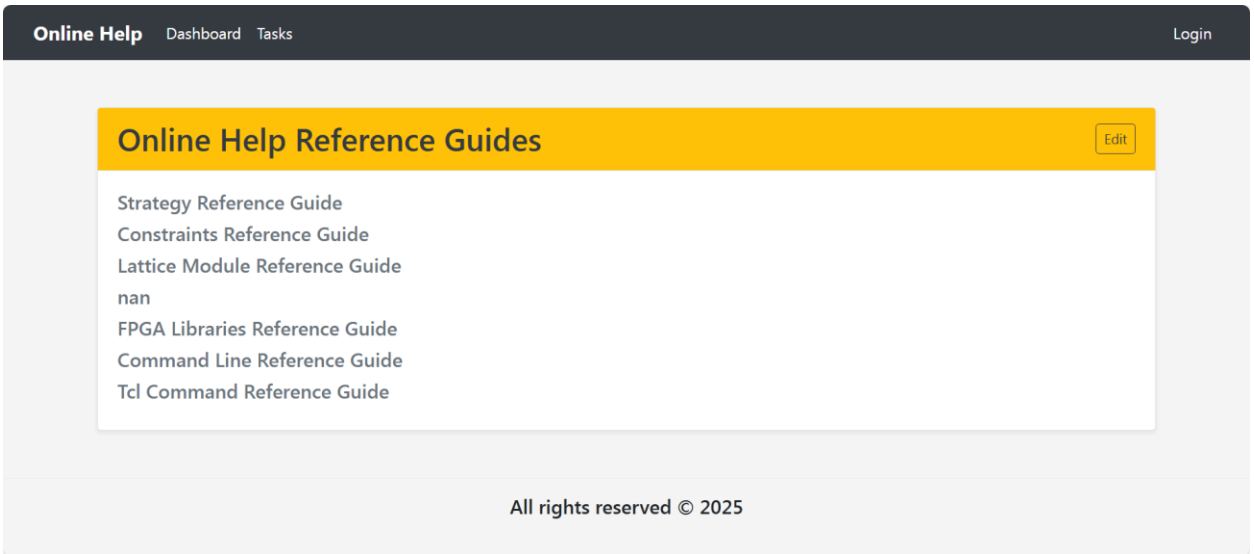


Figure 12. Sections Displayed After Document Selection

Figure 13. Section Editor

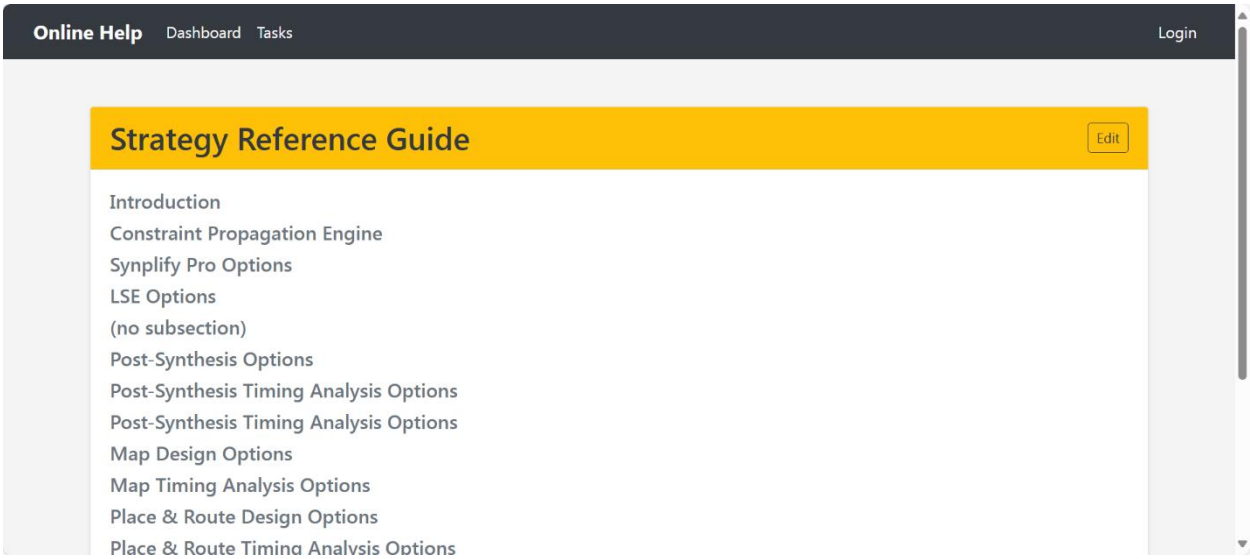


Figure 14. Subsections Displayed After Document Selection

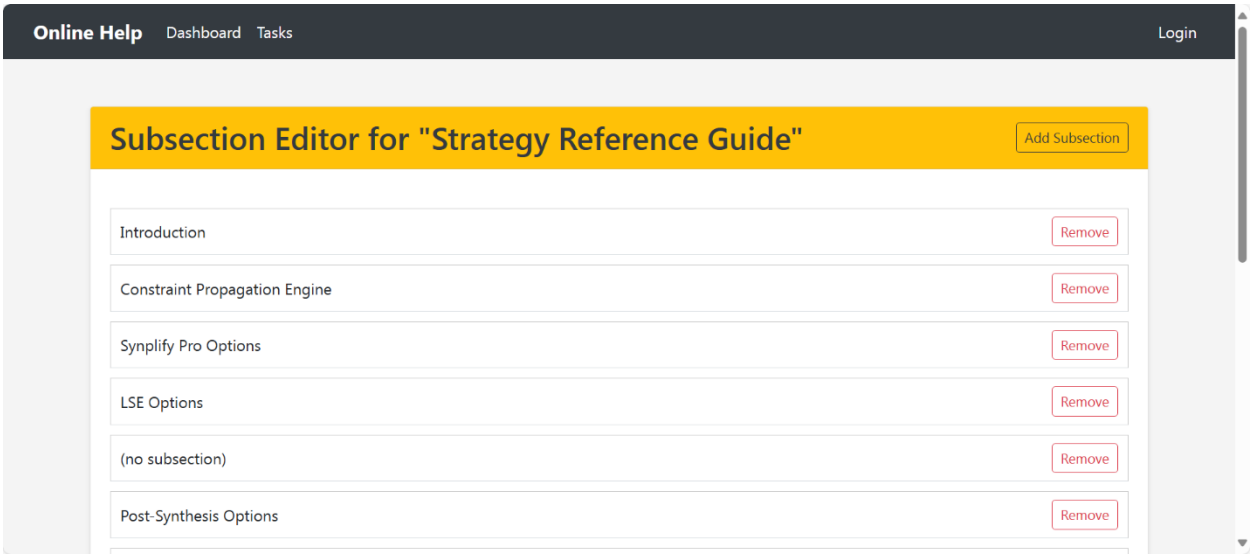


Figure 15. Subsection Editor

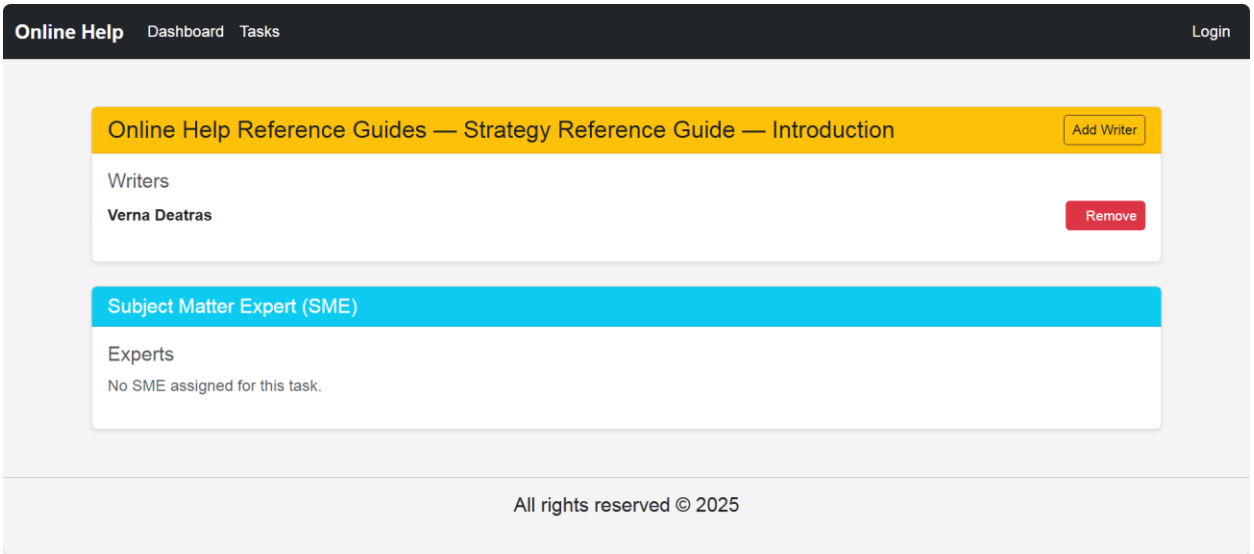


Figure 16. Writer and SME Editor After Subsection Selection

Figure 17. Assigning Task to Writer

Python Scripting for JIRA release notes

Python Scripting for FPGA Libraries

Although I was already familiar with Python, using it specifically for scripting tasks was a new experience for me. In our project, the software developer on our team created Python scripts designed to generate images for the FPGA libraries—particularly for the Alphanumeric Primitives List. These scripts were executed on a Linux server, which we accessed remotely using Exceed TurboX (ETX), a web-based remote desktop platform for Linux environments.

To work within this setup, we used Visual Studio Code on the remote server via ETX. This allowed us to run the scripts and generate the required images efficiently. Figures 18 to 23 illustrate the full process—from logging into ETX to executing the Python scripts and producing the final image outputs.

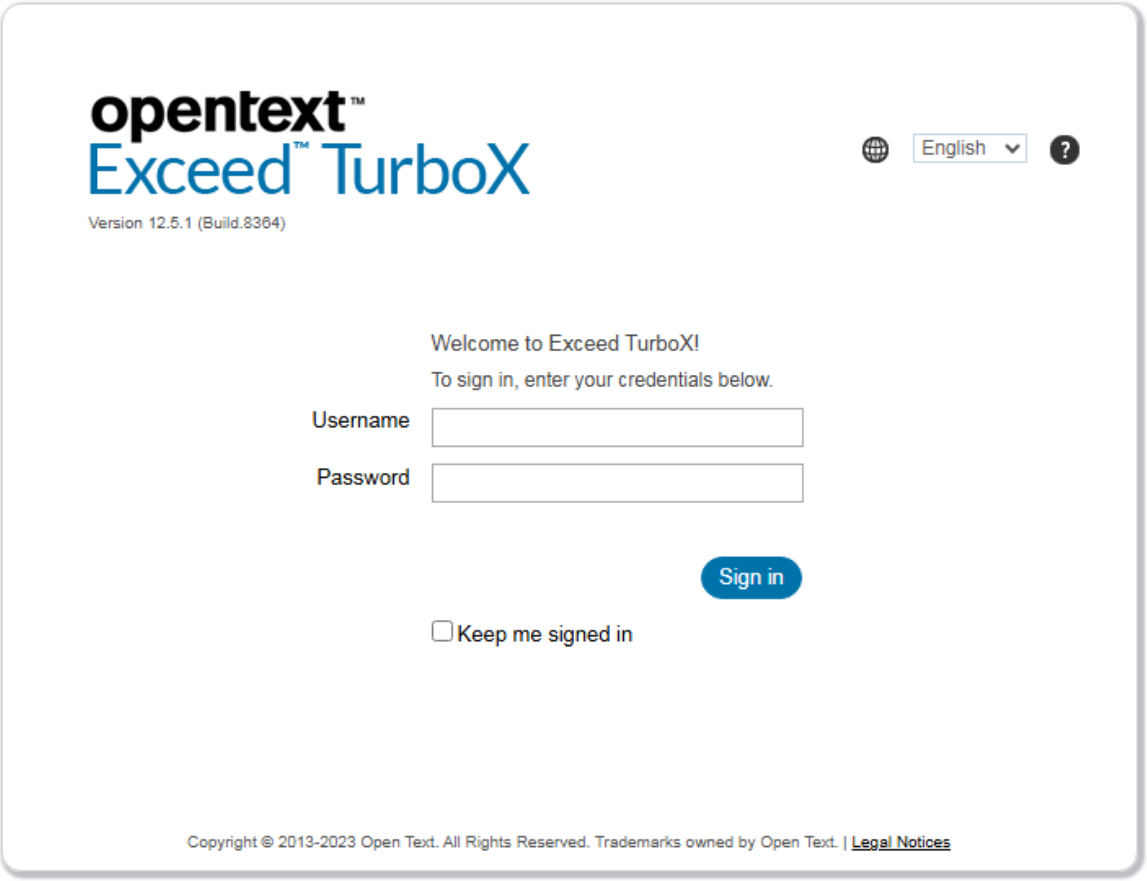


Figure 18. Logging into ETX

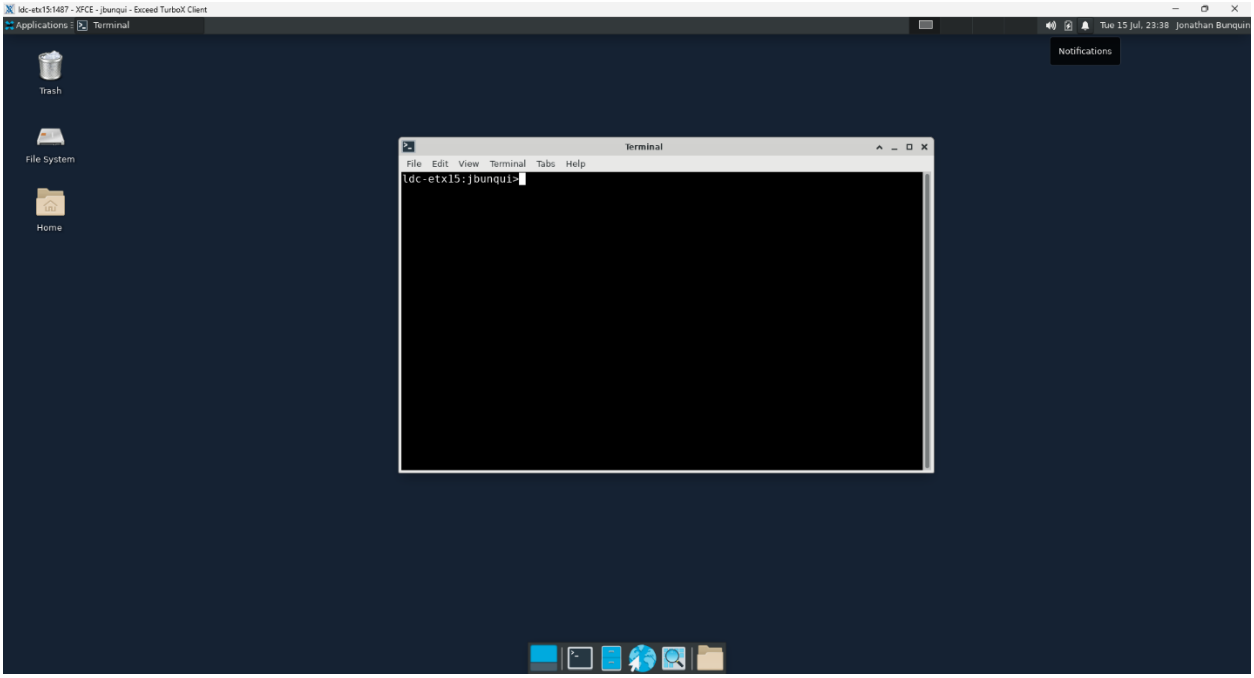


Figure 19. Linux Remote Desktop

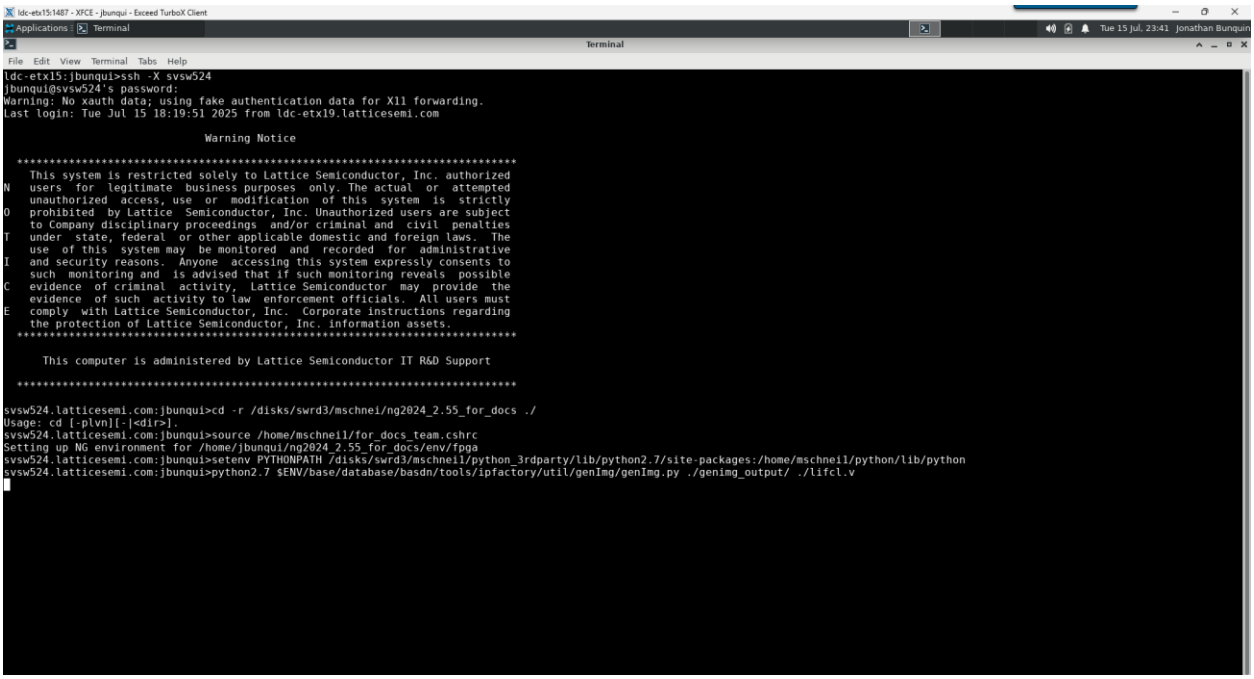


Figure 20. Python Script Generating Images – part 1

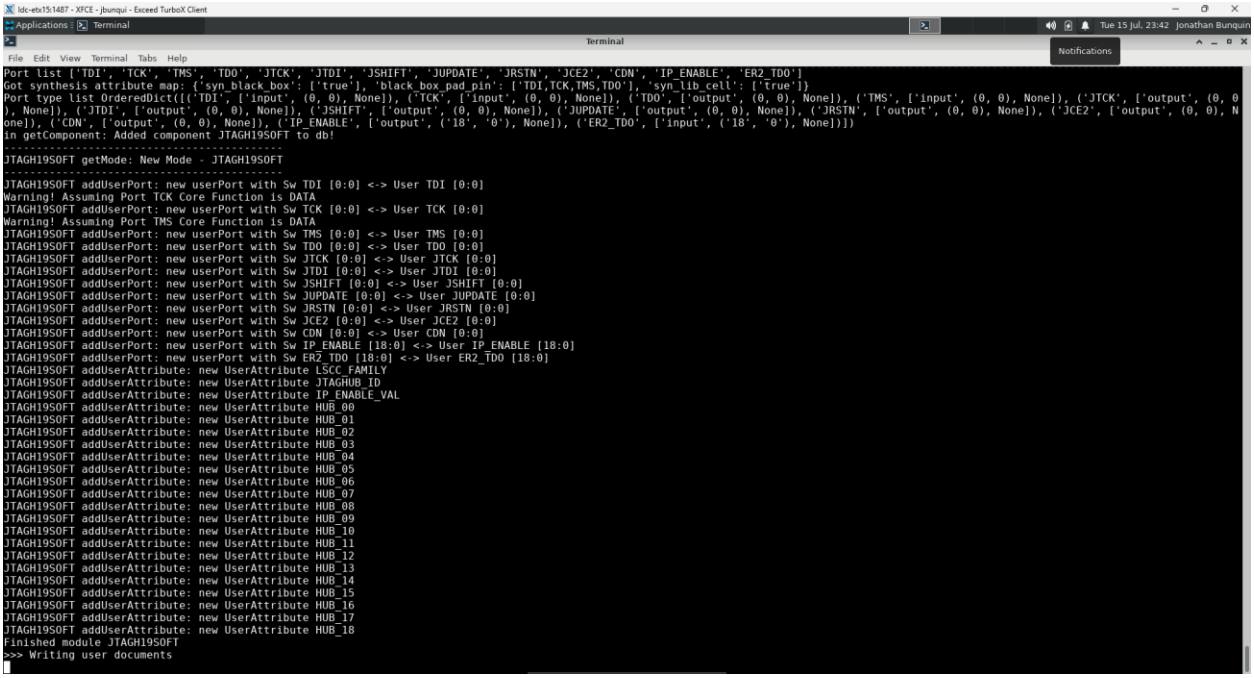


Figure 21. Python Script Generating Images – part 2

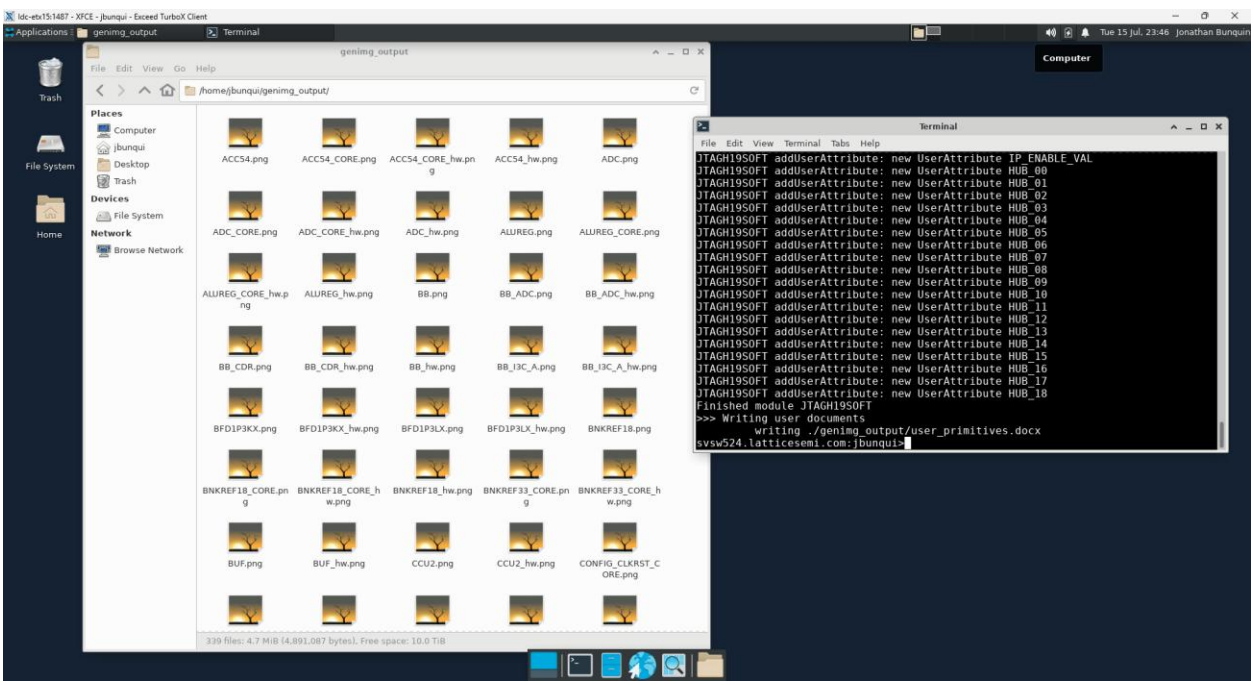


Figure 22. Output folder of Generated Images

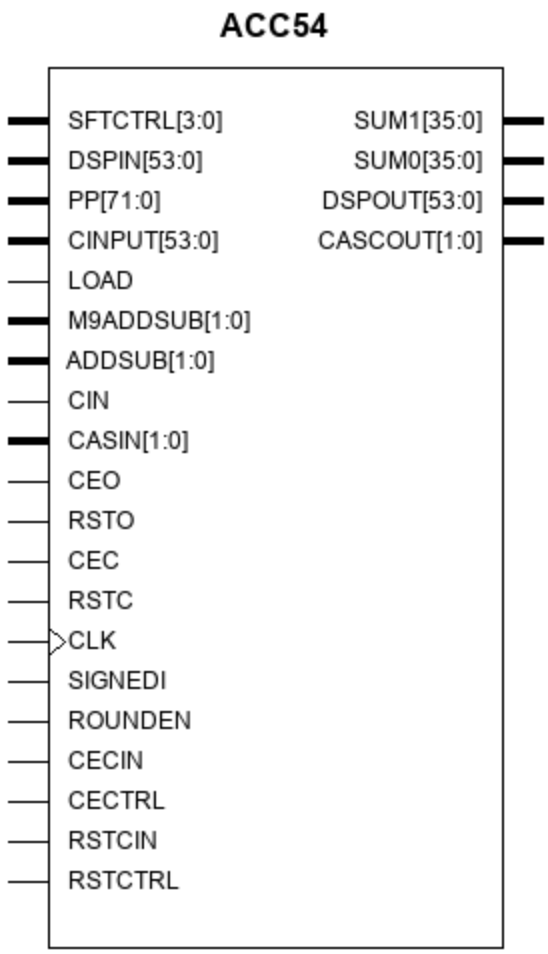


Figure 23. Sample Output of Generated Image

After generating the necessary images using the Python scripts, I imported them into Adobe FrameMaker, where I adjusted their sizes to match the required layout and formatting preferences. This FrameMaker file serves as the source content for the Online Help documentation of the Alphanumeric Primitives List in the FPGA Libraries.

Once the images were properly integrated and formatted within FrameMaker, we used WebWorks ePublisher to convert and publish the content to a web-based format. This tool allowed us to seamlessly display the FrameMaker content, including the newly added images, in the Online Help system.

Figures 24 to 26 illustrate the process—from importing the images into Adobe FrameMaker to publishing and viewing them on the web.

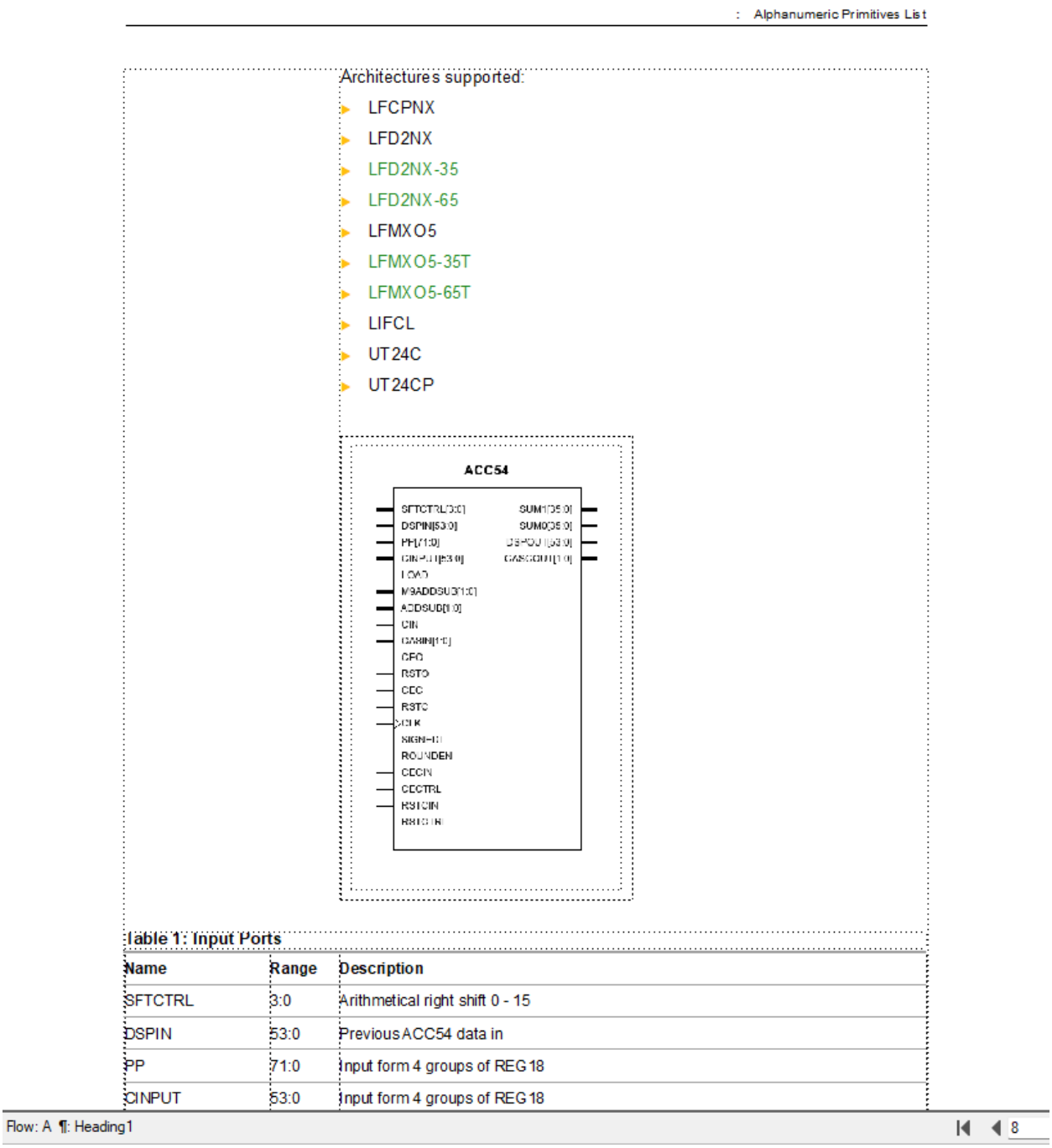


Figure 24. Importing to Adobe FrameMaker

Insert image ng webworks

Figure 25. Webworks showing contents

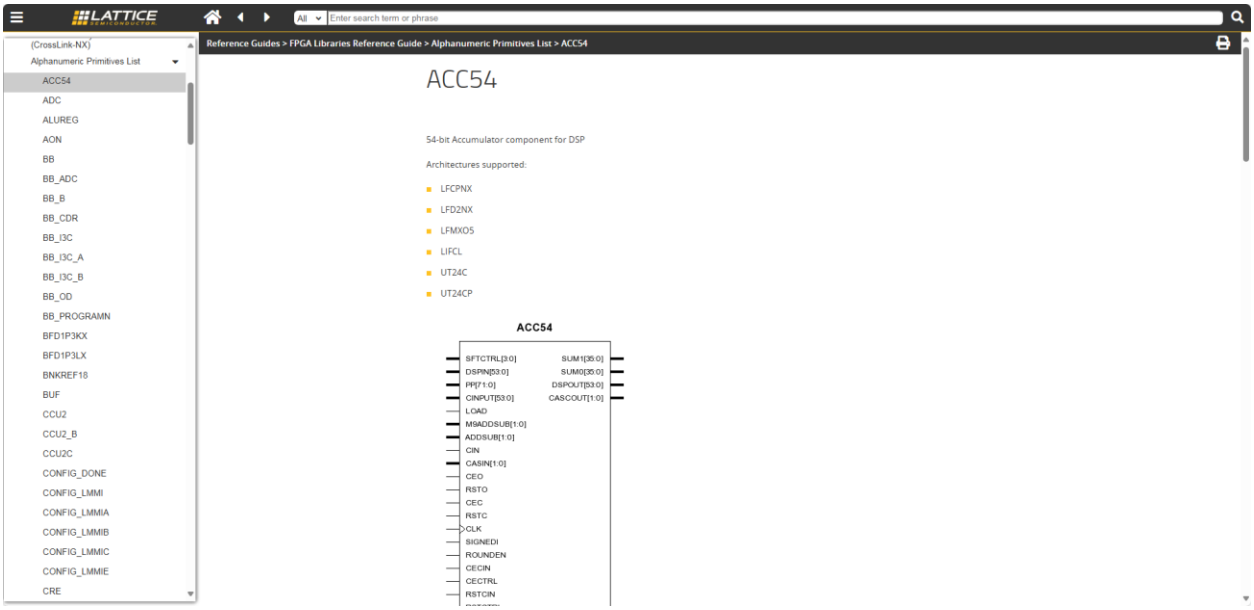


Figure 26. Generated Image Showing in Online Help

In conclusion, these three main projects represent the core of my contributions during my practicum. Each addressed specific challenges faced by the team and provided practical, long-term solutions. The first project tackled the issue of inconsistent image formats in the Online Help documentation, ensuring a more standardized and professional presentation. The second project replaced a cumbersome Excel-based task tracker with a more structured and efficient system, improving task management and data accuracy. Lastly, the third project streamlined the process of generating and integrating content for release notes, reducing the need for manual input and increasing productivity.

Overall, these initiatives significantly benefited the team by enhancing workflow efficiency, improving data consistency, and reducing manual effort.

Synthesis of the Practicum Engagement

Learnings

I learned a lot during the practicum engagement at Lattice Semiconductor Philippines. First, I got better at talking and working with my teammates, which helped me improve my people skills (soft skills). I also realized that even if you already know how to do something, there's always more to learn. I picked up new tools like WebWorks ePublisher, Perforce, Linux and Unix systems, Jira, and Adobe Framemaker.

I also saw how fast things move in the corporate world. When you're given a task, you're expected to do it right away. I try to, but sometimes I get delayed because it takes me a bit longer to learn new things. My dad once told me not to wait for instructions from my boss or my manager—he said I should take initiative and ask what I can do, even if no one told me yet. That advice really helped. It showed my manager that I wanted to help and be part of the team.

Realizations

I've come to realize that I tend to work more slowly, especially in software development. When there are changes in the system, I often panic because I know the requests can be quite challenging. This makes me question whether I'm truly suited for a career in software development—at least, not unless I continue to improve my skills.

School projects are very different from practicum experiences. In school, you usually work with a group, and your teammates can help you with your tasks. Deadlines are also more flexible. But during practicum—and even more so in the real world—you're often on your own, and deadlines come much faster.

For example, it took me several weeks to develop the dashboard tracker that's currently being used by my team in the company. That made me wonder: what if one day my boss gives me a tight deadline? Would I be able to deliver?

Additionally, there was one thing I didn't like, though during the practicum engagement. It took a long time to get access to the tools and accounts I needed, and that made me feel stressed since I had less time to finish my work. This is the challenging part of my practicum

since I only have 324 hours to do the tasks that were given to me. You know that feeling when you want to do something but you just can't. Also, it is not your fault that you still don't have the access or accounts to some of the tools. So you just have to wait and wait until it becomes available.

Conclusion

In conclusion, because of these challenges and experiences I felt during the practicum, I feel that software development in a corporate setting might not be the right fit for me. However, I'm not giving up. I still want to pursue software development, continue building my skills, and create my own projects—just not necessarily in a corporate environment. Still, I did my best in this wonderful experience, and this practicum taught me so much—about both work and myself.

Appendices

Appendix A

Competency-Based Curriculum Vitae (CV)

JONATHAN RUSSELL BUNQUIN

+63 9672340770
NATBUNQS29@GMAIL.COM
/IN/JONATHAN-BUNQUIN
SAN PEDRO, LAGUNA

EDUCATION

- August 2021 - Present **Bachelor of Science in Computer Science**
  Mapua Malayan Colleges Laguna

  Cabuyao, Laguna

RELEVANT COURSES IN EDUCATION

- Data analytics
- Data structures and algorithms
- Software Engineering
- Automata Language Theory
- Web Development
- Machine Learning

AWARDS

- A.Y. 2021-2022 1st Term Dean's Lister
- A.Y. 2021-2022 1st Term Dean's Lister
- A.Y. 2022-2023 1st Term Dean's Lister
- A.Y. 2022-2023 2nd Term Dean's Lister
- A.Y. 2022-2023 3rd Term Dean's Lister
- A.Y. 2023-2024 1st Term Dean's Lister
- A.Y. 2023-2024 2nd Term Dean's Lister
- A.Y. 2023-2024 3rd Term Dean's Lister

SKILLS

- Python, C#, JavaScript, HTML, CSS, Bootstrap
- Microsoft Excel
- SQL, MySQL, SQLite
- Plotly, Matplotlib, Seaborn
- Tableau, Power BI
- Weka
- Unity, Django, Flask

PROJECTS

- **Lattice Radiant Online Help Dashboard Tracker**
  - July 2025
  - Designed and implemented a task-tracking dashboard for the Software Technical Publication team under the Research and Development department during my internship at Lattice Semiconductor Philippines.
  - The dashboard enables users to assign, update, and remove tasks, with customizable fields including document name, section, subsection, comments, and assigned writer.
  - Built the dashboard using Python and the Django framework, with MySQL as the backend database. Integrated Chart.js to visualize task progress and workload distribution across team members, enhancing project transparency and monitoring.
- **PREDICTING CA19-9 LEVELS USING MACHINE LEARNING**
  - December 2024 – Present
  - A web application for visualizing and predicting CA19-9 levels.

    - CA19-9 is a biomarker commonly used in cancer diagnosis, particularly for pancreatic cancer. The application utilizes ensemble learning for predictions
    - The front end is built using HTML, CSS, Bootstrap, and JavaScript, while the backend is developed with Django and Django REST Framework. Plotly is used for data visualization
- **TB Burden Country Dataset Dashboard**
    - February 2025
    - Developed an analytics dashboard to analyze TB-related deaths, TB-HIV co-infections, and incidence rates, identifying regions with the highest burden helping users recognize areas requiring urgent intervention and understand contributing factors.
    - Created a global heat map visualizing country population to examine potential correlations between population size, TB incidence, deaths, and prevalence.
- **Balaji Fast Food Dataset Analytical Dashboard**
    - February 2025
    - Developed an analytics dashboard to determine the optimal time for sales helping the fast-food business anticipate peak customer traffic.
    - Conducted time series analysis of sales trends, providing insights into the highest sales periods and their underlying factors.
    - Identified the best-selling and least popular menu items, enabling data-driven decisions on promotions and inventory management.
- **Mapua MCL's Blue and Silver Bookshop Dashboard**
    - May 2024 – July 2024
    - Developed an interactive analytics dashboard to display key performance indicator (KPI) reports for the bookstore.
    - Assisted bookstore staff in tracking sales trends and inventory performance.
    - Designed data visualizations that enhanced user reporting and analytical insights.
- **MMCL Online Bookshop System**
    - December 2023 – June 2024
    - The project is a web application designed for MMCL, allowing students to reserve items online at the Blue and Silver Bookshop.
    - The application uses HTML, CSS, JavaScript and Bootstrap for the frontend, MS SQL for the database, and ASP.NET MVC for the backend. Chart.js is used for data visualization. Project management is handled through GitHub, and the application is hosted on Azure.

Appendix B

Endorsement Letter

MAPÚA MALAYAN COLLEGES LAGUNA

COLLEGE OF COMPUTER AND INFORMATION SCIENCE
MAPÚA MALAYAN COLLEGES LAGUNA

10 May 2025

MR. JAY R. ESPIRITU
HR, Talent Acquisition, Lattice Semiconductor Philippines
11F Aeon Center, Alabang-Zapote Road, N Bridgeway,
Muntinlupa, Metro Manila

Dear Mr. Espiritu,

The BS Computer Science program of Mapúa Malayan Colleges Laguna requires their students to undergo a Practicum program for a minimum of 324 hours during the third term of our academic calendar.

We would like to request that Mr. Jonathan Russell Bunquin be permitted to have his training in your company. We believe that your company can provide the relevant exposure necessary for our students to achieve the intended learning outcomes for the BS Computer Science program. We are confident that he will be able to acquire the practical knowledge and skills expected from a Computer Science graduate which, in turn, would guarantee a continuous supply of CS professionals needed by your company.

We thank you for your favorable action and we look forward to a more meaningful linkage that is mutually beneficial to our students and your company.

With warm regards,

JONALYN G. EBRON
BS Computer Science Program Chair
College of Computer and Information Science
Mapúa Malayan Colleges Laguna

jgberon@mcl.edu.ph
(049) 832-4076

Address : Pulo Diezmo Road, Cabuyao City, Laguna 4025
Trunkline : +63 (49) 832-4000
Fax : +63 (49) 832-0017, +63 (2) 8520-8975
Email : mclinfo@mcl.edu.ph

mcl.edu.ph MapuaMCL mapuamcl

Appendix C

Practicum Acceptance Form

REVISION NO.: 00
REVISION DATE: May 10, 2016

MAPÚA
MALAYAN COLLEGES
LAGUNA

PRACTICUM CONFIRMATION AND ACCEPTANCE FORM

IMPORTANT INFORMATION

- STUDENTS ACCEPTED FOR PRACTICUM IN A HOST COMPANY WILL HAVE TO ACCOMPLISH THIS FORM.
- ASK THE PRACTICUM SUPERVISOR/ COMPANY REPRESENTATIVE TO FILL IN THE DETAILS OF THE TRAINING.
- SUBMIT TO THE PRACTICUM ADVISER/COORDINATOR PRIOR TO THE START OF TRAINING.

NAME OF STUDENT	Jonathan Russell D. Bunquin	STUDENT NUMBER	2021150113
COURSE CODE	CS199F	SY/TERM ENROLLED	A.Y. 2024-2025/3T

This is to certify that Jonathan Russell D. Bunquin *(name of student-trainee)* has been accepted for practicum at LATTICE SEMICONDUCTOR CORPORATION *(name and address of establishment)* and will be attached to the SW TECHNICAL PUBLICATIONS - R&D department/s for a minimum of, but not limited to 324 hours. Training will commence on May 13'2025 and is expected to end on July 9'25. Attached is the list of requirements.

COMPANY REPRESENTATIVE:

AVE M. MANRIQUEZ	TECHNICAL PUBLICATION MANAGER
Signature over Printed Name	Official Designation
SW TECHNICAL PUBLICATIONS - R&D	ave.manriquez@latticesemi.com/0999-3433605
Department	Email and Contact Number/s

NOTED BY:

Signature over printed name of Practicum Coordinator	5/10/2025
	Date

COPY: (1) STUDENT; (2) HOST COMPANY; (3) PRACTICUM COORDINATOR

FORM OVPAA 030B

THIS FORM IS AVAILABLE AT THE OVPAA.

REVISION NO.: 00
REVISION DATE: May 10, 2016

MAPÚA
MALAYAN COLLEGES
LAGUNA

PRACTICUM CONFIRMATION AND ACCEPTANCE FORM

IMPORTANT INFORMATION

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- ASK THE PRACTICUM SUPERVISOR/ COMPANY REPRESENTATIVE TO FILL IN THE DETAILS OF THE TRAINING.
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NAME OF STUDENT	Jonathan Russell D. Bunquin	STUDENT NUMBER	2021150113
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COMPANY REPRESENTATIVE:

AVE M. MANRIQUEZ	TECHNICAL PUBLICATION MANAGER
Signature over Printed Name	Official Designation
SW TECHNICAL PUBLICATIONS - R&D	ave.manriquez@latticesemi.com/0999-3433605
Department	Email and Contact Number/s

NOTED BY:

Signature over printed name of Practicum Coordinator	5/10/2025
	Date

COPY: (1) STUDENT; (2) HOST COMPANY; (3) PRACTICUM COORDINATOR

FORM OVPAA 030B

THIS FORM IS AVAILABLE AT THE OVPAA.

Appendix D

Liability Waiver

MAPÚA
MALAYAN COLLEGES
LAGUNA

REVISION NO.: 00
REVISION DATE: May 10, 2016

STUDENT TRAINING AGREEMENT AND LIABILITY WAIVER

IMPORTANT INFORMATION

- THIS FORM IS TO BE ACCOMPLISHED AND SUBMITTED BY STUDENT TRAINEE TO THE PRACTICUM ADVISER BEFORE STARTING THE PRACTICUM.
- READ AND UNDERSTAND THE PROVISIONS OF THIS AGREEMENT AND WAIVER.
- ENSURE THAT ALL SIGNATORIES SIGN THE FORM.

I, Jonathan Russell D. Bunquin, and a student of MALAYAN COLLEGES LAGUNA (hereinafter referred to as "MCL", do hereby voluntarily undergo on-the-job training at Latitice Semiconductor Corporation, hereinafter referred to as the **"Host Company"**, located at 11F Aeon Center, Northgate, Alabang, Muntinlupa, under the following terms and conditions:

a. That the practicum training will commence on May 13 2025 and ends on July 9 '25 and will have to complete a minimum of 324 hours required for the on-the-job training;

b. That I shall observe proper decorum and act professionally at all times and abide by the Company's rules and regulations and comply with those imposed for the training program, otherwise, I shall be excluded from further participation;

c. That in the course of my training program, I may have access to information which may be of confidential in nature and proprietary to the Company, for which I may be required to execute a confidentiality and non-disclosure agreement as a prerequisite to my participation in the training program;

d. That the time I will spend on the training program in the completion of my on-the-job training requirements will not and should not be interpreted or construed as working hours and should be regarded as non-compensable. Provided that, the Company may, as a unilateral act of liberality or generosity on their part, provide me with meal, travel, transportation allowances, accommodations, etc.;

e. That I fully understand that notwithstanding the allowances enumerated in the preceding section which I may receive, there exists no labor-management and/or employer/employee relationship between me and the Company where I will undergo my training;

f. That I shall exercise due care and diligence in the tasks assigned to me and personally be made answerable for any and all liabilities for damage to property or injury to third person, which may be occasioned by my intentional or negligent acts during the course of my on-the-job training;

g. That I shall likewise hold the Host Company and MCL free and harmless from any and all liability and responsibility for any sickness or injury to myself and third parties and damage to property which I may sustain and/or may occur at any time during the training program, including time spent in traveling to and from any and all premises and locations where I may be required to go to as part of my training program;

h. That the Company reserves the right to discontinue my training on reasonable grounds upon written notice to MCL and myself. Additionally, in the event my training program is discontinued for reasons attributable only to myself, I may be made to reimburse the Host Company for any/all the allowances, stipends, etc., which I may have received from them during and prior to the termination of my training program;

i. That in addition to my liability under section *g* and for the pre-termination of my training program provided for under section *h* hereof, I may be subjected further to disciplinary action in accordance with the school's student manual and/or be a ground for disqualification from graduation;

Signed on this 9 day of May 2025.

Jonathan Russell D. Bunquin
Signature over printed name of **Student Trainee**

WITH OUR CONSENT:

Signature over printed name of **Parent/Guardian**
(for minors only)

NOTED BY:

Printed Name and Signature of **Practicum Adviser/ Coordinator**

AVE M. MANRIQUEZ
Printed Name and Signature of **Host Company Representative**

COPY: (1) STUDENT; (2) HOST COMPANY; (3) PRACTICUM ADVISER; (4) PRACTICUM COORDINATOR

FORM OVPAA 030C
THIS FORM IS AVAILABLE AT THE OVPAA.

Appendix E

Training Plan

MAPÚA MALAYAN COLLEGES LAGUNA

REVISION NO.: 00
REVISION DATE: May 10, 2016

TRAINING PLAN

NAME	Jonathan Russell D. Bunquin	COURSE CODE	CS199F
PROGRAM & STUDENT NO.	BSCS 2021150113	COURSE TITLE	CS PRACTICUM

STUDENT OUTCOMES

CO1. Identify, analyze, and design business process solution to the problem faced by the organization

CO2. Apply the different concepts of system analysis and design, software engineering and programming courses in the problem solving process in the organization

CO3. Acquire new knowledge and experience while in the organization

AREAS / PHASES OF TRAINING AND TIME ALLOTMENT

1. Improve Python Scripting for Image Generation of the FPGA User Library Guide - 42 hours
2. Standardizing Diagrams in the User Library Guide and Radiant Online Help - 42 hours
2. Automating Release Notes from Jira - 90 hours
3. Enhancing WebWorks HTML - 100 hours
4. Other tasks and activities to improve the online help (user interface enhancement and incorporate interactive elements). - 100 hours

EVALUATION GUIDELINES & COURSE OUTCOMES

DEMONSTRATION OF SOFT SKILLS (40%)	DEMONSTRATION OF TECHNICAL SKILLS (60%)
KEY AREAS **COMMUNICATION SKILLS (20%)** Relate to co-trainees/supervisors terminologies and rules Recite procedures and instructions needed for the tasks Identify and describe safety signs and symbols Ask critical questions related to the tasks Produce well-written regular and incident reports Prepares and presents reports using Information and Communication Technology (ICT) **PROFESSIONAL DEPORTMENT (20%)** Observes proper grooming and attire Reports to work regularly on time and as necessary, even beyond prescribed working hour Acts according to the job description given by the company Willing to accept new tasks apart from the usual routine and responsibilities Delivers quality output on time Demonstrates respect for different individuals **INITIATIVE (+5%)** Volunteers to perform tasks beyond routine tasks	**KEY AREAS** software development SKILLS (X%) 40% • Delivers bug-free modules on time (20%) • Integrates and implements new modules (10%) • Applies good UI/UX principles in module development Technical documentation SKILLS (Z%) 20% • Prepares project scheduling documents (5%) • Prepares testing activity documentation (5%) • Prepares user manual (5%) • Prepares technical documentation (5%) **INITIATIVE (+5%)** Volunteers to perform tasks beyond routine tasks

CONFORME	CONSENT (FOR MINORS ONLY)	NOTED BY	ENDORSED BY	APPROVED BY
JONATHAN RUSSELL BUNQUIN May 10 '25		AVE MANRIQUEZ	Jonathan G. Estoria	Jonathan G. Estoria
SIGNATURE OVER PRINTED NAME OF STUDENT / DATE	SIGNATURE OVER PRINTED NAME OF PARENT OR GUARDIAN / DATE	SIGNATURE OVER PRINTED NAME OF PRACTICUM SUPERVISOR / DATE	SIGNATURE OVER PRINTED NAME OF PRACTICUM ADVISER / DATE 5/24/10	SIGNATURE OVER PRINTED NAME OF PROGRAM CHAIR / DATE

COPY: (1) STUDENT; (2) HOST COMPANY; (3) PRACTICUM COORDINATOR

FORM OVPAA-030D

THIS FORM IS AVAILABLE AT THE OVPAA.

Appendix F

Complete Journal – (May 26 to July 28, 2025)

Appendix G

Daily Time Record