



COPY

The "ULTIMATE" Contact Manager

Team #1

Processes for Object Oriented Software Development (COP 4331C) –
Spring 2026 – Section 3 with Dr. Aashish Yadavally

What is COPY?

COPY stands for "The **C**ontact **O**rganizer for **P**OOSD with **Y**adavally." COPY is the website built by **Team 1** for the **Small Project** assignment required by the Processes of Object-Oriented Software Development (aka "**POOSD**" or **COP 4331C**) at the University of Central Florida (UCF) in Orlando, FL. It's a simple implementation of a Contact Manager.

COPY was designed to be an easy way to manage your own personal contact list. COPY supports the following C-R-U-D features:

- Adding new contacts (C)
- Searching through contacts with partial matching (R)
- Editing existing contacts (U)
- Deleting existing contacts (D)

The website is at <https://copycm.com> and you can find the GitHub Repository at <https://github.com/ABetinsky/cop4331-sm-project>



Adam Betinsky
Project Manager & Frontend Developer



Andrew Reyes
API Developer



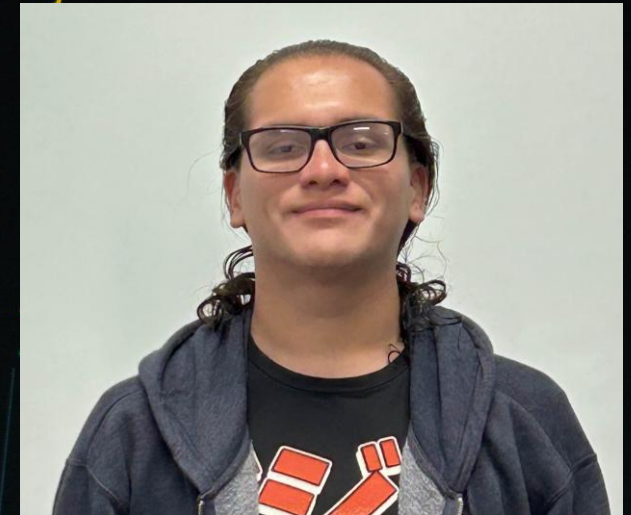
Darren Squires
*Database (Backend) and
Frontend Developer*



Pranav Cheruku
*Database (Backend)
and Frontend Developer*



Noah Gerard
API Developer



Benjamin Quintero
Frontend Developer

How Did We Make COPY?

```
background: url('cyber...');  
background-size: 100vw 100vh;
```

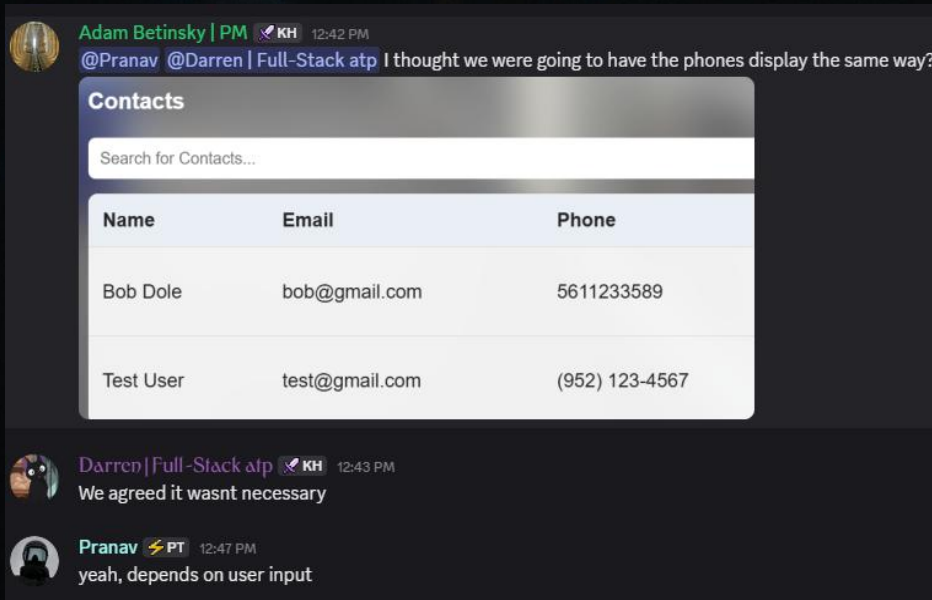
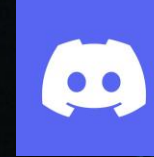
```
}  
.box{  
  position: absolute;  
  top: 50%;  
  left: 50%;  
  transform: translate(-50%, -50%);  
  width: 400px;  
  padding: 40px;  
  background: rgba(0, 0, 0, 0.5);  
  box-sizing: border-box;  
  border: 1px solid #fff;  
  border-radius: 10px;
```

```
20 .box h2{  
21   margin: 0 0 30px;  
22   padding: 0;  
23   color: #fff;  
24   text-align: center;  
25 }  
26 .box h3{  
27   margin: 0 0 10px;  
28   padding: 0;  
29   color: #fff;  
30   text-align: center;  
31 }
```



```
32 .box .inputBox{  
33
```

Communication Methods

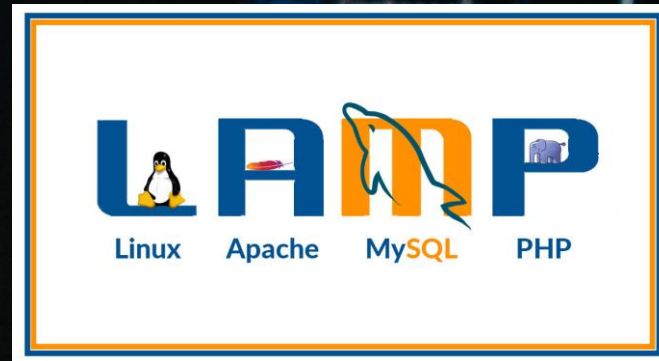
- Primary communication was in a **Discord Server**
 - We ensured to check it multiple times daily
- We held 4 weekly meetings virtually on **Zoom**



Coding Technologies

- Remote Server Hosting: **DigitalOcean** 
- Domain Purchasing and DNS Routing: **GoDaddy** 
- LAMP Stack:

- OS: Linux (Ubuntu 22.04)
- Apache 2.4.58
- Database: MySQL 8.0.45
- PHP 8.4.17



- Frontend-Specific:

- **HTML**
- **JavaScript**
- **CSS**



```
background: url(cybercity.jpg);
background-size: 100vw 100vh;

}

.box{
  position: absolute;
  top: 50%;
  left: 50%;
  transform: translate(-50%, -50%);
  width: 400px;
  padding: 40px;
  background: rgba(0, 0, 0, 0.5);
  box-sizing: border-box;
  box-shadow: 0 15px 25px rgba(0, 0, 0, 0.5);
  border-radius: 10px;
}

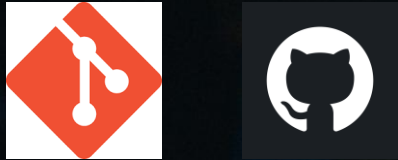
.box h2{
  margin: 0 0 30px;
  padding: 0;
  color: #fff;
  text-align: center;
}

.box h3{
  margin: 0 0 10px;
  padding: 0;
  color: #fff;
  text-align: center;
}

.box .inputBox{
```

Version Control

Git & GitHub



- We used a Git repository to easily keep track of any changes to our code
- GitHub also provided us real feedback to any conflicts, issues, or other concerns.
- Both platforms allowed for us to collaboratively see each other's changes (especially with new branches) and easily identify if each member was doing their own part
- Plus, we setup a listener on our VPS and Discord so that whenever we pushed to our Git repository, it would automatically sync on both platforms as well

The next slide has an example of how we used Pull Requests to ensure a new feature was accurate before fully implementing a change.

The screenshot shows the GitHub interface for a repository named 'cop4331-sm-project'. At the top, it indicates the repository is 'Public' and shows interaction buttons: Pin, Watch (0), Fork (0), and Star (0). Below this, a navigation bar includes a dropdown for 'main', '26 Branches', '0 Tags', a search bar 'Go to file', and buttons for 'Add file', 'Code', and 'About'. The main content area is a table of files and folders with their commit messages and timestamps. A pull request from 'DANNYSTARLORD' is highlighted at the top. The right sidebar contains sections for 'About' (repository description, README, activity, stars, forks), 'Releases' (no releases published), 'Packages' (no packages published), and 'Contributors' (6 contributors).

File/Folder	Commit Message	Time Ago
.github/workflows	fix deployment workflow	last week
.idea	Add contacts page and API wiring WIP	2 weeks ago
AIDisclosures	Removing HTML AI Disclosure	last week
docs	add user status endpoint to api documentation	yesterday
finalPresentation/Small Project Presentation	Made a folder to hold stuff for the presentation, and put in t...	yesterday
src	Made sure CSS files work on both mobile and tablets	13 hours ago
.env.example	add DB_PORT to .env.example	3 weeks ago
.gitignore	ADD,EDIT, DELETE ALL DONE :D	last week
Makefile	fix Makefile target dir	2 weeks ago
README.md	Adding TODO and README	last week
composer.json	create database connection util	3 weeks ago
composer.lock	load environment variables	3 weeks ago

Pull Request Example

Finishing touches #36

Merged ABetinsky merged 12 commits into `main` from `finishing-touches` yesterday

Conversation 1 Commits 12 Checks 0 Files changed 7

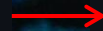


bmquin commented yesterday

Collaborator ...

Completed missing header in the About Us page, as well as adding button to return user either to the Contacts or Login page depending if they are logged in or not.

Also added minor compatibility fixes in index and contacts css files, and changed the header font color for the login page to white.



bmquin added 12 commits 3 days ago



create branch, added andrew pic

c38bf1e



added title and clock to header

285c6ff



added andrew bio

57dadee



added adam bio

4822524



added pranav bio

e3097ab



added ben bio

e322b39



add copier with no bg for about us

e3d06c0



added header button, will add actual functionality later bc im eepy

fb12a11



Merge remote-tracking branch 'origin/main' into finishing-touches

07bebfa



return button (finally) functional

be6323f



changed font color to white on login page

15bb9c1



fixed minor compatibility issues

ba3c605



DANNYSTARLORD approved these changes yesterday

View reviewed changes



ABetinsky approved these changes yesterday

View reviewed changes

ABetinsky left a comment

Owner ...

Looks good. Thank you for working on this.



ABetinsky merged commit 36006a6 into main yesterday

Revert



bmquin added a commit that referenced this pull request yesterday



Merge pull request #37 from ABetinsky/main

Verified

78977e5

Pull request successfully merged and closed

You're all set — the branch has been merged.

SwaggerHub API Documentation

API Information:

- REST-style
- Strictly consumes and produces JSON formatted data
- All API responses follow the JSON format indicate on the right
- Include HTTP Response Code to categorize to response
- Handles user and contact operations through SQL queries
- Uses cookie-based session handling
- Validates and sanitizes request parameters
- All SQL queries for API operations occur on the remote server (search occurs on server)

Contact Manager App

1.0.0

OAS 2.0

[Base URL: copycm.com/api]

This is the API documentation for the COP-4331 Small Project Contact Manager App

[Contact the developer](#)

Apache 2.0

authentication

Operations for user authentication

POST

/user/signup.php

registers an account

POST

/user/login.php

logs user into account

POST

/user/logout.php

logs user out of account

GET

/user/auth_status.php

returns current session user status

contacts

Operations for contact management

GET

/user/contacts.php

returns a list of contacts of current session user with keyword

POST

/user/contacts.php

adds contact to current session user

PUT

/user/contacts.php

modifies contact of given user

DELETE

/user/contacts.php

removes contact from current session user

Success Response:

```
{  
  "success": true,  
  "message": "%success-message%"  
}
```

HTTP Response Code:

200 - OK

Error Response:

```
{  
  "success": false,  
  "error": "%error-message%"  
}
```

HTTP Response Codes:

400 – Invalid Input

401 – Invalid Session / Incorrect Credentials

403 – Already Logged In

405 – Method Not Allowed

409 – Credentials Already Taken

500 – Internal Server Error

Artificial Intelligence (AI) Usage

- Even though AI is becoming mainstream in software development, we tried to minimize using it
 - We used ChatGPT for all AI inquiries
 - When we did use it, we primarily used it for teaching
 - When we did use code generated by AI (which was about 5 times), we were sure to review it thoroughly and fill out an AI Disclosure



ChatGPT

Progression Timeline

```
background: url(cyberpunk2077.jpg);
background-size: 100vw 100vh;
```

```
6
7
8 .box{
9     position: absolute;
10    top: 50%;
11    left: 50%;
12    transform: translate(-50%, -50%);
13    width: 400px;
14    padding: 40px;
15    background: rgba(0, 0, 0, 0.5);
16    box-sizing: border-box;
17    box-shadow: 0 15px 25px rgba(0, 0, 0, 0.5);
18    border-radius: 10px;
19 }
```

```
20 .box h2{
21     margin: 0 0 30px;
22     padding: 0;
23     color: #ffff;
24     text-align: center;
25 }
```

```
26 .box h3{
27     margin: 0 0 10px;
28     padding: 0;
29     color: #ffff;
30     text-align: center;
31 }
```

```
32 .box .inputBox{
33 }
```

```
<div class="inputBox">
  <input type="text" />
  <label Nombre de Usuario />
</div>
<div class="inputBox">
```

```
<input type="email" />
<label Correo Electrónico />
```

```
<div class="inputBox">
  <input type="date" />
  <label Fecha de Nacimiento />
</div>
```

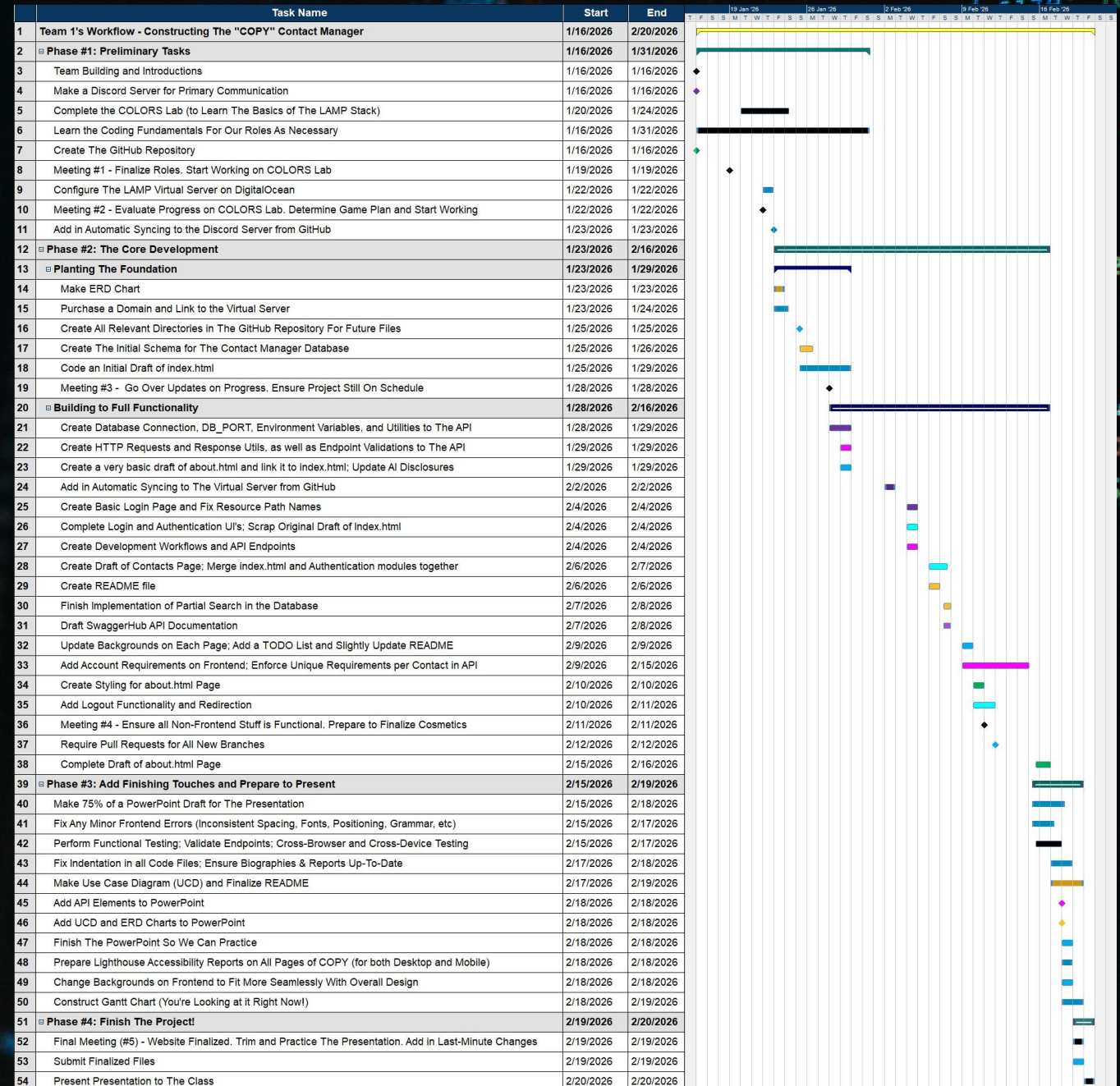
```
<input type="submit" value="Iniciar Sesión" />
<input type="button" value="Registrarse" />
```

Gantt Chart

MindView



- We used a software called MindView to create our Gantt Chart.
- Although our complete Gantt Chart is on this slide, we will go through each portion (and show the relevant charts) on the next few slides.
 - Note that in all the following slides: The “Color Key” links colors to team-member in order of appearance



Gantt Chart - Phase #1: Preliminary Tasks

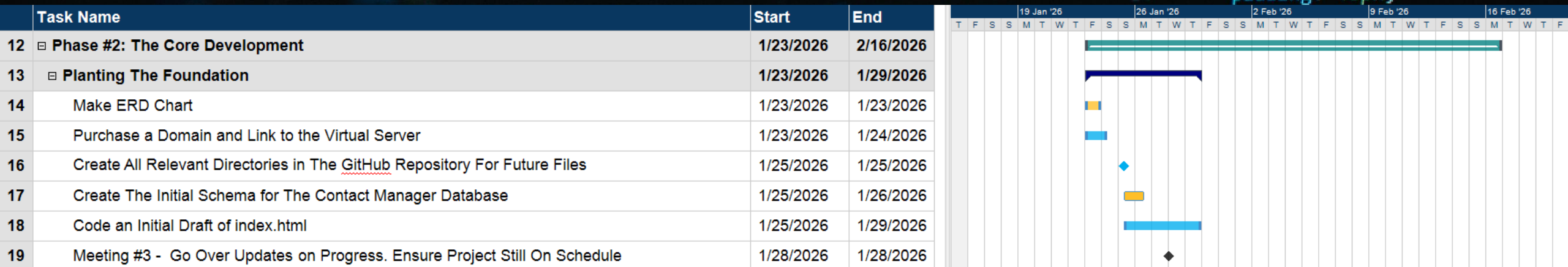


Color Key for Gantt Chart – Phase #1: Preliminary Tasks

- **Yellow** = Overall Project Timeline
- **Turquoise** = A Main Phase Timeline
- **Black** = A Task Completed by Everyone
- **Purple** = A Task Completed by Noah
- **Green** = A Task Completed by Benjamin
- **Blue** = A Task Completed by Adam

Gantt Chart - Phase #2: *The Core Development*

Part #1: *Planting The Foundation*



Color Key for Gantt Chart – Phase #2: *The Core Development*, Part #1: *Planting The Foundation*

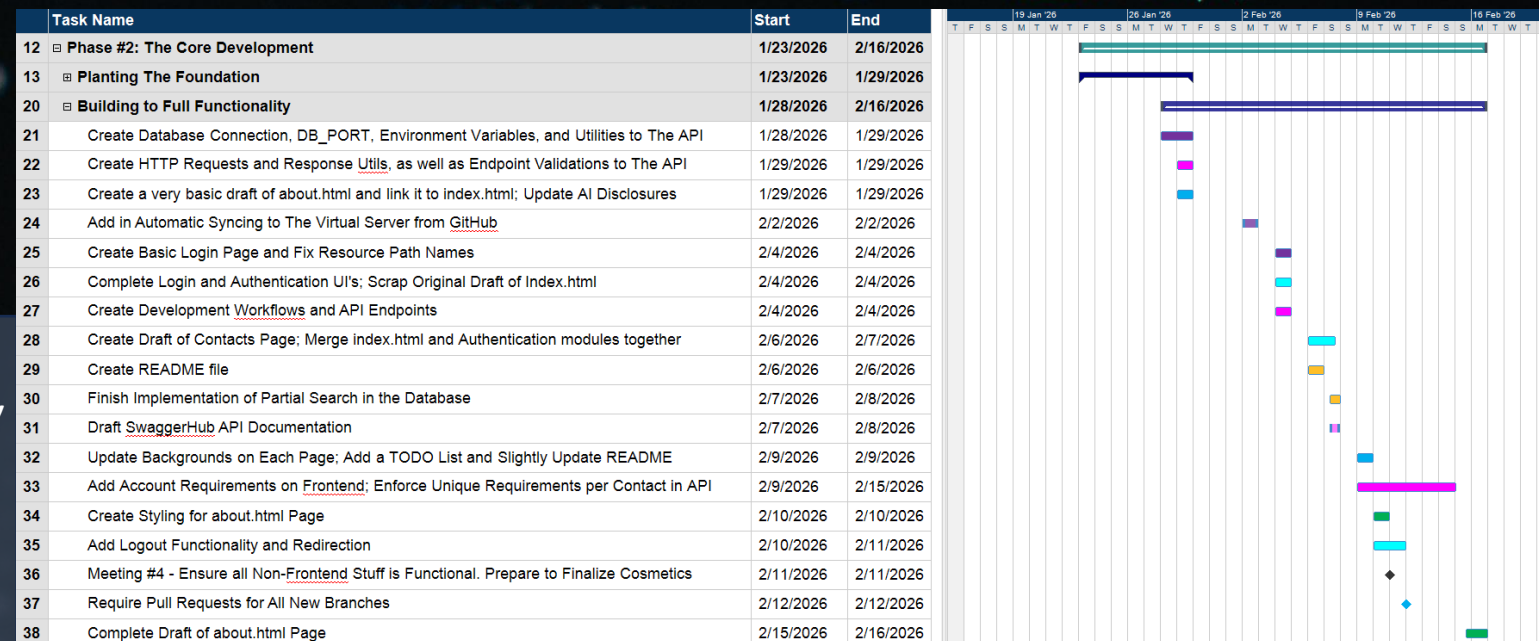
- **Turquoise** = A Main-Phase Timeline
- **Navy Blue** = A Sub-Phase Timeline
- **Orange** = A Task Completed by Darren
- **Blue** = A Task Completed by Adam
- **Black** = A Task Completed by Everyone

Gantt Chart - Phase #2: *The Core Development*

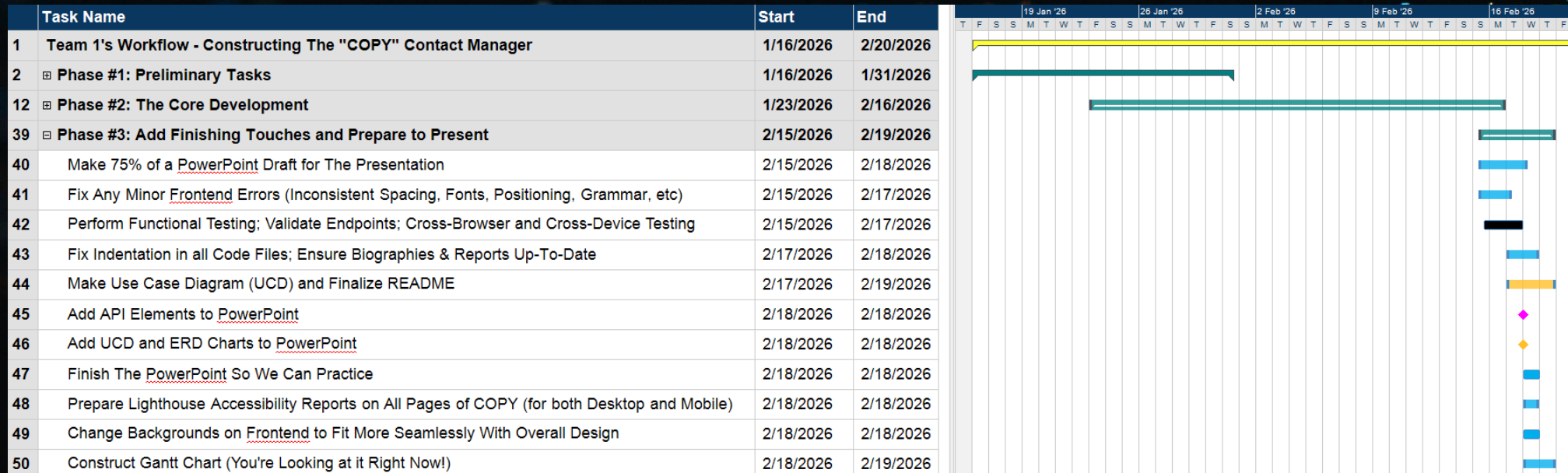
Part #2: *Building to Full Functionality*

Color Key for Gantt Chart – Phase #2: *The Core Development, Part #2: Building to Full Functionality*

- **Turquoise** = A Main-Phase Timeline
- **Navy Blue** = A Sub-Phase Timeline
- **Purple** = A Task Completed by Noah
- **Pink** = A Task Completed by Andrew
- **Blue** = A Task Completed by Adam
- **Ice Blue** = A Task Completed by Pranav
- **Orange** = A Task Completed by Darren
- **Black** = A Task Completed by Everyone
- **Green** = A Task Completed by Benjamin



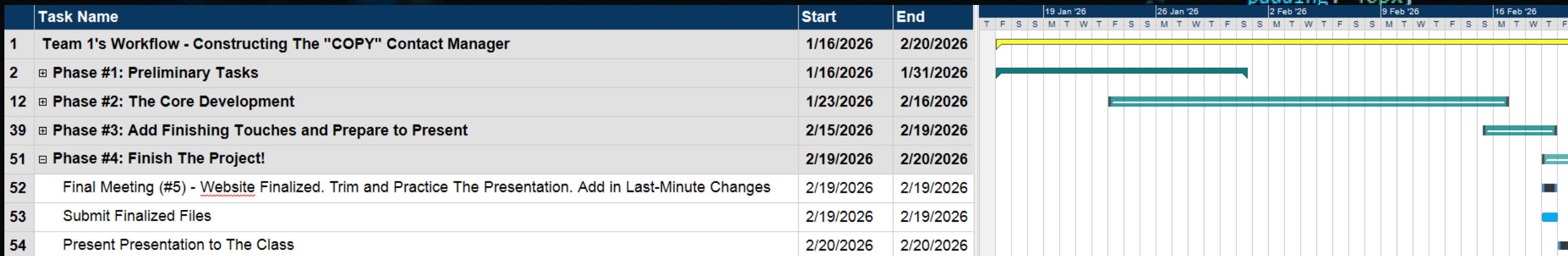
Gantt Chart - Phase #3: Add Finishing Touches to Prepare and Present



Color Key for Gantt Chart – Phase #3: Add Finishing Touches to Prepare and Present

- **Yellow** = Overall Project Timeline
- **Turquoise** = A Main Phase Timeline
- **Blue** = A Task Completed by Adam
- **Black** = A Task Completed by Everyone
- **Orange** = A Task Completed by Darren
- **Pink** = A Task Completed by Andrew

Gantt Chart - Phase #4: *Finish The Project!*

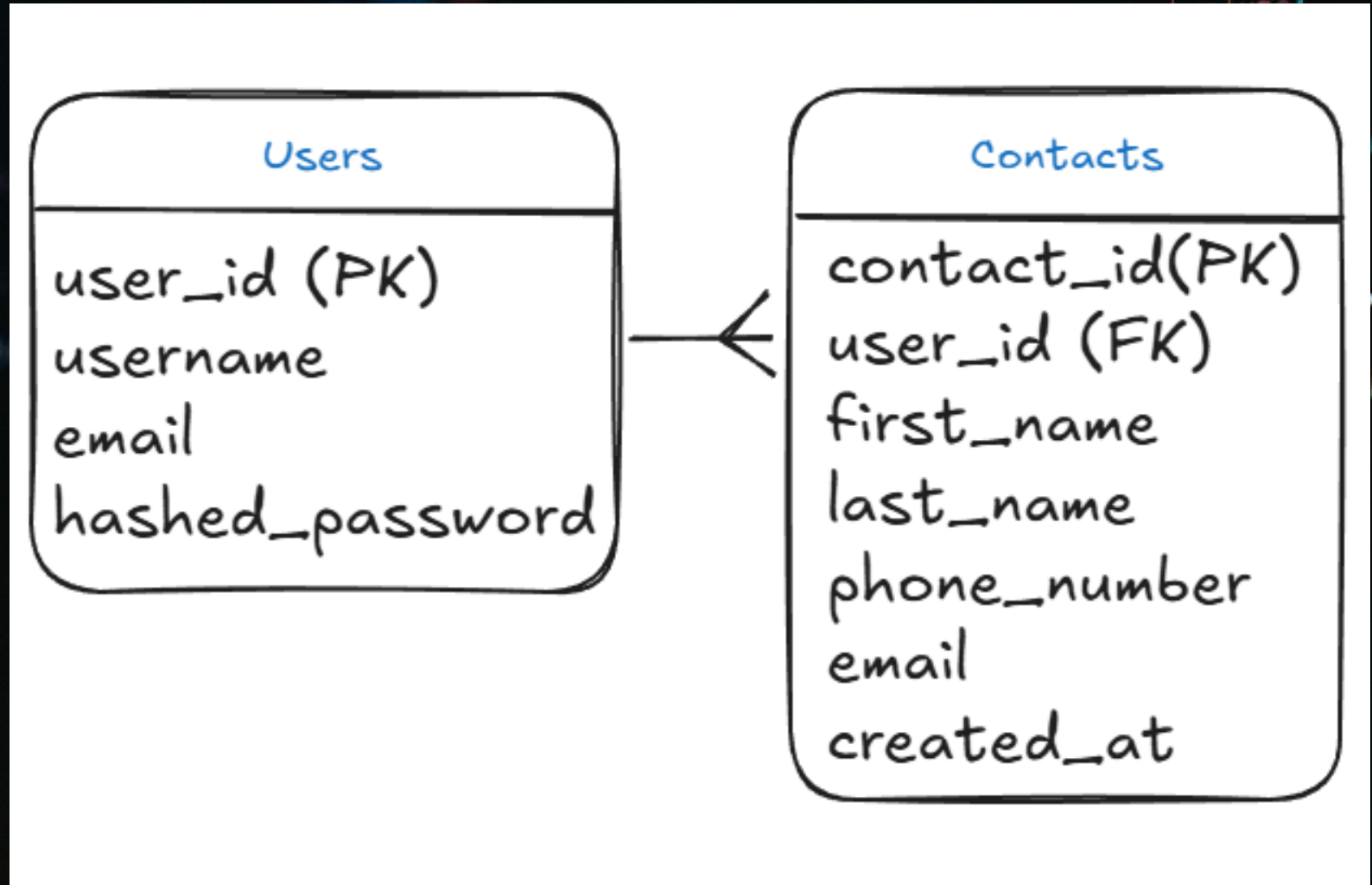


Color Key for Gantt Chart – Phase #4: *Finish the Project!*

- **Yellow** = Overall Project Timeline
- **Turquoise** = A Main Phase Timeline
- **Black** = A Task Completed by Everyone
- **Blue** = A Task Completed by Adam

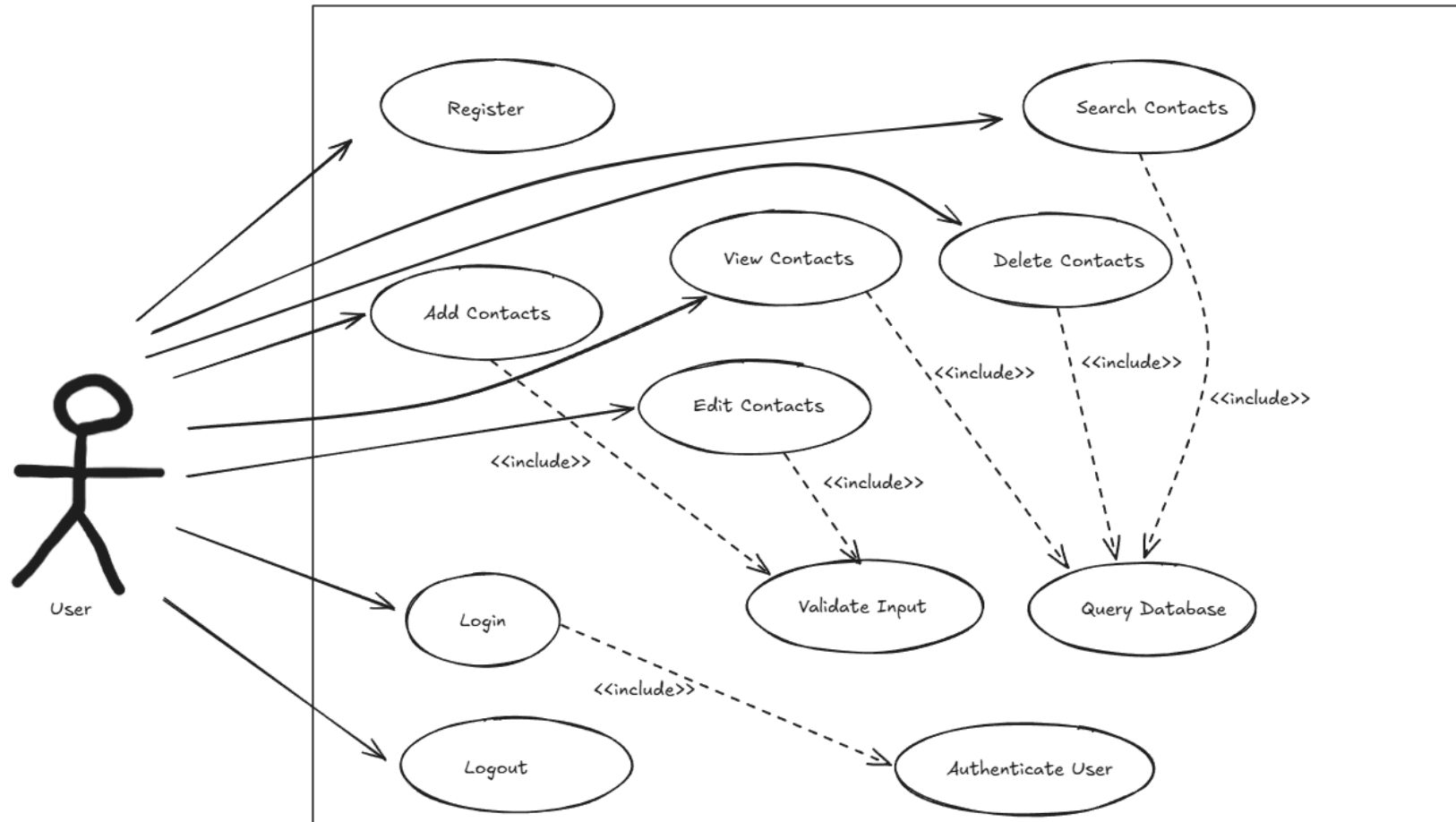
ERD Chart

- The database is structured around two core entities: **Users** and **Contacts**.
- A **one-to-many relationship** is used because one user can have many contacts, but each contact belongs to exactly one user.
- The `user_id` in the `Contacts` table is a **foreign key** that enforces data ownership and prevents cross-user access.
- Separate tables were used to maintain **data isolation, security, and normalization**.
- Passwords are stored as `hashed_password` to follow basic security best practices.
- The structure supports all CRUD operations efficiently while keeping the schema simple and scalable.



Use Case Diagram

- The diagram centers around a single user actor
- All contact operations map directly to CRUD functionality
- `<<include>>` was used for shared processes like validation, authentication, and database queries
- This design improves modularity and reflects how the backend logic is structured



Overall Things That Did Go Well

- We got to work right away at the beginning of week 2
- We made sure to reach out to each other if we had different ideas, issues, or general concerns
- We ensured that we made decent progress to keep the project on schedule
- Assisting each other as much as possible when we we're stuck



Our first (and very bad) draft of index.html

Overall Things That Did NOT Go Well

- We had conflicts from time-to-time
 - Whether it be about different ideas for the website design, how to organize the Git repository, or arguing over who should do a task, it was inevitable
- We had a few occasions where some group members slacked a little and didn't do their part
- We had some miscommunication and confusion at times with the project requirements and/or implementation



Adam Betinsky | PM  KH Yesterday at 8:03 PM

@here Accept PR plz

Darren | Full-Stack atp KH Yesterday at 8:03 PM

oh yeah

what if i dont

 @Adam Betinsky | PM KH @here Accept PR plz

ben | frontend Yesterday at 8:03 PM

what are u changing in the about page bc i literally could've just done it myself



 @ben | frontend what are u changing in the about page bc i literally could've just done it myself

Adam Betinsky | PM KH Yesterday at 8:04 PM

I made C O P Y red

ben | frontend Yesterday at 8:04 PM

why did u need a whole branch to do that 🥲

u could've just asked 🥲



Adam Betinsky | PM  KH Yesterday at 8:04 PM

Because otherwise it won't sync since we need a PR



ben | frontend Yesterday at 8:04 PM

????



 @Adam Betinsky | PM KH Because otherwise it won't sync since we need a PR

Darren | Full-Stack Yesterday at 8:04 PM

you can merge to same branch



ben | frontend Yesterday at 8:04 PM

i literally could've just made it red myself and made another pr

Website and API Demonstrations

```
background: url(cyber...);  
background-size: 100vw 100vh;
```

```
}  
.box{  
  position: absolute;  
  top: 50%;  
  left: 50%;  
  transform: translate(-50%, -50%);  
  width: 400px;  
  padding: 40px;  
  background: rgba(0, 0, 0, 0.5);  
  box-sizing: border-box;  
  box-shadow: 0 15px 25px rgba(0, 0, 0, 0.5);  
  border-radius: 10px;  
}
```

```
20 .box h2{  
21   margin: 0 0 30px;  
22   padding: 0;  
23   color: #fff;  
24   text-align: center;  
25 }
```

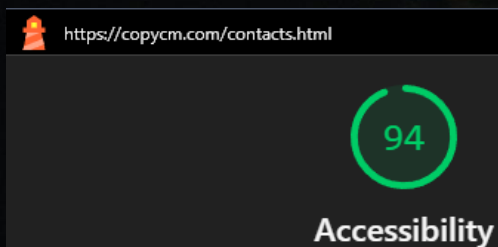
```
26 .box h3{  
27   margin: 0 0 10px;  
28   padding: 0;  
29   color: #fff;  
30   text-align: center;  
31 }
```

```
32 .box .inputBox{  
33
```

```
<input type="email" value="Correo E:" />  
<div class="inputBox">  
  <input type="password" value="Contraseña" />  
  <input type="submit" value="Iniciar Sesión" />  
  <input type="button" value="Registrarse" />  
</div>
```


Accessibility: Lighthouse Scores

- 90+ (“Excellent”) Lighthouse scores on all 3 pages
- Only possible issues are for users that use screen readers
 - For example, we could improve the contacts page with a single main landmark




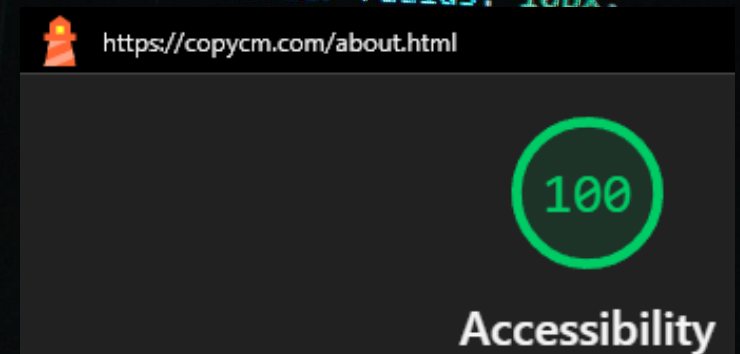
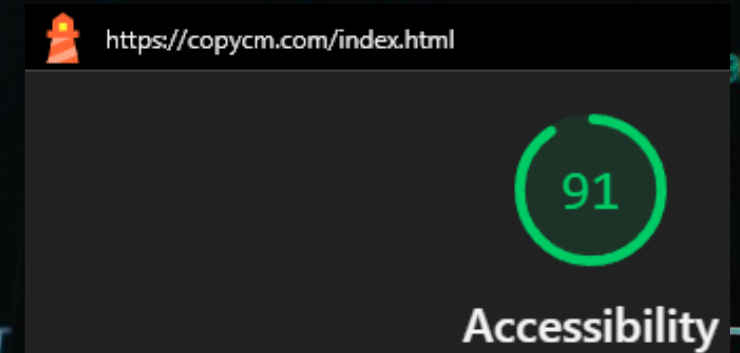
BEST PRACTICES

▲ Document does not have a main landmark.

One main landmark helps screen reader users navigate a web page. [Learn more about landmarks.](#)

Failing Elements

	html.hydrated
--	---------------



Any Questions?

```
background: url(cyber.jpg);  
background-size: 100vw 100vh;
```

```
}  
.box{  
  position: absolute;  
  top: 50%;  
  left: 50%;  
  transform: translate(-50%, -50%);  
  width: 400px;  
  padding: 40px;  
  background: rgba(0, 0, 0, 0.5);  
  box-sizing: border-box;  
  box-shadow: 0 15px 25px rgba(0, 0, 0, 0.5);  
  border-radius: 10px;  
}
```

```
.box h2{  
  margin: 0 0 30px 0;  
  padding: 0;  
  color: #fff;  
  text-align: center;  
}
```

```
.box h3{  
  margin: 0 0 10px 0;  
  padding: 0;  
  color: #fff;  
  text-align: center;  
}
```

```
.box .inputBox{
```

```
<input type="email" value="" />  
<label Correo Electrónico />
```

```
<div class="inputBox">  
  <input type="password" value="" />
```

```
<input type="submit" value="Iniciar Sesión" />  
<input type="button" value="Registrarse" />
```


Outside Images Used in This Presentation

- Main Background: <https://www.pexels.com/photo/lines-of-code-2653362/>
- Discord Logo: <https://www.vecteezy.com/vector-art/6892625-discord-logo-icon-editorial-vector>
- Zoom Logo: <https://1000logos.net/zoom-logo/>
- LAMP Stack: <https://www.geekboots.com/story/lamp-stack-and-its-advantages>
- Git Logo: <https://www.google.com/imgres?q=git%20logo&imgurl=https%3A%2F%2Fgit-scm.com%2Fimages%2Flogos%2Fdownloads%2FGit-Icon-1788C.png&imgrefurl=https%3A%2F%2Fgit-scm.com%2Fcommunity%2Flogos&docid=CMTH9vchny6mPM&tbnid=jpq4xLgv36ZQ1M&vet=12ahUKewjlx6X8muKSAXWKmmoFHdFvE2QQnPAOegQIIBAB..i&w=383&h=383&hcb=2&ved=2ahUKewjlx6X8muKSAXWKmmoFHdFvE2QQnPAOegQIIBAB>
- GitHub Logo: <https://pixabay.com/vectors/github-github-logo-github-icon-6980894/>
- ChatGPT Logo: <https://logovent.com/blog/chatgpt-logo-history/>
- MindView Logo: <https://ul.gpii.net/content/mindview-7>
- DigitalOcean Logo: <https://en.wikipedia.org/wiki/DigitalOcean>
- GoDaddy Logo: <https://www.logo.wine/logo/GoDaddy>
- HTML/JavaScript/CSS Logos: <https://www.sitepoint.com/community/t/what-is-the-official-javascript-logo/365775>

Thank You!

```
background: url(cyberpunk2077.jpg);
background-size: 100vw 100vh;
}
.box{
  position: absolute;
  top: 50%;
  left: 50%;
  transform: translate(-50%, -50%);
  width: 400px;
  padding: 40px;
  background: rgba(0, 0, 0, 0.5);
  box-sizing: border-box;
  box-shadow: 0 15px 25px rgba(0, 0, 0, 0.5);
  border-radius: 10px;
}
.box h2{
  margin: 0 0 30px;
  padding: 0;
  color: #ffff;
  text-align: center;
}
.box h3{
  margin: 0 0 10px;
  padding: 0;
  color: #ffff;
  text-align: center;
}
.box .inputBox{
```