

Please note that we didn't change, add, or remove anything from the branch we forked from the repo, so there was nothing to commit. Dr. Turner is aware of our project's unique situation, so please ask him if you need more information or confirmation.

Concerto Final Semester Summary

Setup and Installation

Cloning and Initial Environment Setup

- Forked the Concerto GitHub repository and cloned it locally in a file on desktop.
- Ran all necessary commands to get the development server running after in the the concerto directory:

bundle install --path vendor/bundle

bundle exec rake db:migrate

bundle exec rake db:seed

bundle exec rails server

- Set up a local Rails server at localhost:3000, allowing for full testing of templates, user creation, and layout experiments.

System and Package Installation

Installed system-wide dependencies required for Ruby, document processing, and media display:

sudo apt-get install -y build-essential apt-transport-https libapache2-mod-passenger ruby-full ruby-dev libruby imagemagick ruby-rmagick libmagickcore-dev libmagickwand-dev libssl-dev zlib1g-dev libsqlite3-dev default-mysql-server libpq-dev default-mysql-client ruby-mysql2 default-libmysqlclient-dev apache2 libxslt1-dev nodejs git

Then:

gem install bundler

sudo add-apt-repository ppa:libreoffice/ppa

sudo apt-get update

sudo apt install -y libreoffice ghostscript libgs-dev gsfonts poppler-util

- Used sudo apt update and sudo apt upgrade as needed to resolve dependency and compatibility issues.
- Resolved a handful of installation errors through package upgrades and reconfiguration.

Raspberry Pi Remote Desktop Setup

- We configured SSH and VNC/Remote Desktop for remote access, and utilized a VPN for off-campus connectivity. This setup allowed us to manage the Pi from anywhere, improving flexibility and remote troubleshooting capabilities.

Frontend Work – HTML, CSS, and Templates

- Customized Concerto's CSS display templates.
- Modified text alignment, font sizes, layout spacing, and media containers to improve visual readability.
- Designed new layout experiments for:
 - Calendar events
 - Weather feeds
 - Embedded video
- Used basic HTML to add and update placeholder sections.

Email Delivery and Account System

- Investigated and attempted to fix Concerto's broken email system, which is supposed to send notifications when users create accounts.
- Set up Postfix on the Raspberry Pi and tried sending test emails.
- Used tools like:
 - traceroute – to track where outgoing mail stopped
 - telnet – to manually simulate mail server communication
 - Claws Mail – system we used for handling emails all together
- Found that:
 - Outlook emails reach the mail queue but generate non-delivery notifications
 - Gmail messages get stuck in the queue
- Experimented with both POP3 and IMAP protocols to try and resolve the issue — still pending full resolution.

```
madhav@MadhavLaptop: ~/ +
Warning: Permanently added '128.113.96.1' (ED25519) to the list of known hosts.
concerto-admin@128.113.96.1's password:
Linux concerto-lally.cs.rpi.edu 6.6.74+rpt-rpi-2712 #1 SMP PREEMPT Debian 1:6.6.74-1+rpt1

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
You have new mail.
Last login: Fri Mar 28 16:23:27 2025 from 129.161.151.229
concerto-admin@concerto-lally:~$ sudo nano /etc/postfix/main.cf
concerto-admin@concerto-lally:~$ sudo nano /etc/postfix/main.cf
concerto-admin@concerto-lally:~$ sudo nano /etc/postfix/main.cf
concerto-admin@concerto-lally:~$ echo -e "Subject: Test Email\n\nThis is a test email." |
concerto-admin@concerto-lally:~$ mailq
--Queue ID-- --Size-- --Arrival Time-- --Sender/Recipient-----
BBADE1FA146* 331 Fri Mar 28 16:27:01 concerto-admin@concerto-lally.cs.rpi.edu
iquattlebaum27@gmail.com

2456F1FA386 577 Thu Mar 27 11:04:58 concerto-admin@concerto-lally.cs.rpi.edu
(connect to alt4.gmail-smtp-in.l.google.com[142.250.153.26]:25: Connection timed out)
iquattlebaum27@gmail.com

203681FA3C6 590 Thu Mar 27 11:09:46 concerto-admin@concerto-lally.cs.rpi.edu
(connect to alt4.gmail-smtp-in.l.google.com[142.250.153.27]:25: Connection timed out)
iquattlebaum27@gmail.com

-- 1 Kbytes in 3 Requests.
```

Email Queue with no mails sent

Domain and Hosting Improvements

- We registered a custom domain for Concerto, eliminating the need for localhost or internal IPs.
- This made development easier and enabled seamless access to the signage server from any machine or location.

```
concerto-admin@concerto-amos ~
File Edit Tabs Help
GNU nano 7.2 bashrc
. /usr/share/bash-completion/bash_completion
elif [ -f /etc/bash_completion ]; then
. /etc/bash_completion
fi

if pgrep -x "chromium" > /dev/null
echo "Concerto Frontend is running"
echo "Welcome to the terminal"
else
echo "Starting Concerto Kiosk"
chromium --kiosk --noerrdialogs --disable-infobars 'http://concerto-lally.cs.rpi.edu'
fi
```

Domain Setup without local host

Amos Eaton Setup

- Installed a second Raspberry Pi in Amos Eaton Hall, now fully functioning and mirroring content from Lally.
- Ensured power, mounting, HDMI display, and network connectivity were working as expected.



Amos Eaton Installation

Dr. Turner is now added as an administrator and can add to the boards and our goal going forward is to make this accessible to all students clubs and organizations who want to post events.