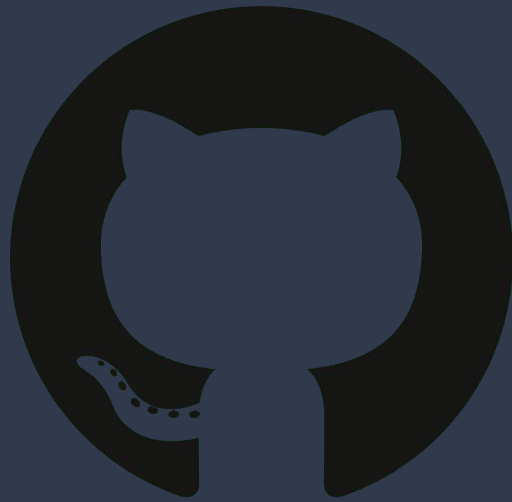Picopy

Team Members

- Benton Haensel
- Jacob Dewild
- Jett Crowson
- Justin Floyd
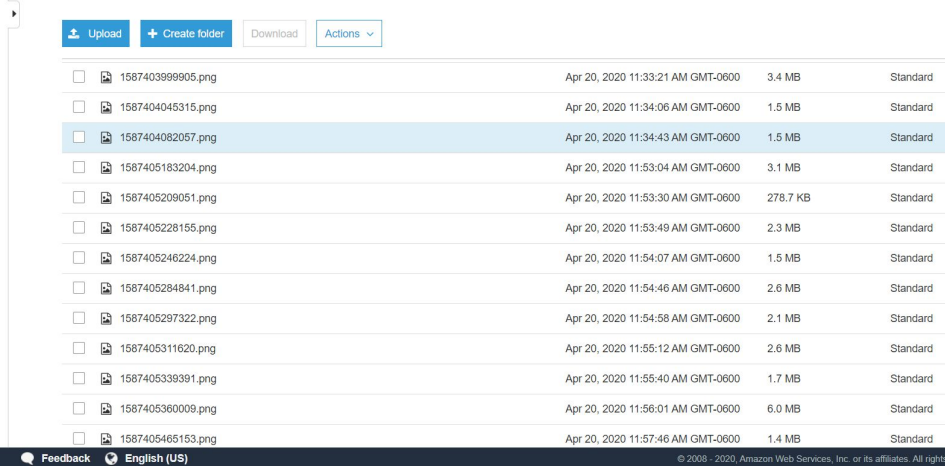- Sarah Bordiuk
- Will Huynh

GitHub

- Used GitHub throughout the whole project to keep all of our code in one place and to allow easy collaboration

- Effective at tracking changes to the files with documentation of the changes as well (version control)

bin	Add heroku database and register functionality	18 days ago
node_modules	Added the two modules to the dependencies	8 days ago
public	Fixed Filters being cut off	6 minutes ago
routes	fix btn	3 hours ago
views	so view gallery link has space when scrolling list	1 hour ago
README.md	Create README.md	2 months ago
app.js	Fix and overhaul bucket.	yesterday
create_db.sql	Updated database to support filter string	12 days ago
download.js	Dowload file function from bucket	16 days ago
insert.sql	Update insert.sql	7 days ago
out.png	fix btn	3 hours ago
package-lock.json	Added the two modules to the dependencies	8 days ago
package.json	fix btn	3 hours ago
pgp.js	Touching up session system	18 days ago
picopy-class-diagram.jpg	Add files via upload	last month
upload_screen.html	Add files via upload	2 months ago

Amazon s3 Bucket

- Cloud-based file storage hosted by amazon, used to store images outside of the server

- Effective for keeping storage clean and simple to access

Database & Hosting

heroku

Simple, easy to use, free,

Minimal setup or obstacles to deployment.

Problem with fs module

Photo_id	User_id	Filename	Filters	Private	Date_crea
1	9	https://picopyimg.s3.us-east...	contrast(75%) saturate(8)	false	2020-04-2
2	9	https://picopyimg.s3.us-east...	grayscale(100%)	false	2020-04-2
3	9	https://picopyimg.s3.us-east...	hue-rotate(270deg) brightne...	false	2020-04-2
4	9	https://picopyimg.s3.us-east...	blur(4px)	true	2020-04-2
5	1	https://picopyimg.s3.us-east...	hue-rotate(90deg)	false	2020-04-2
6	1	https://picopyimg.s3.us-east...	brightness(150%)	false	2020-04-2
7	1	https://picopyimg.s3.us-east...	hue-rotate(270deg) invert(1...	false	2020-04-2
8	1	https://picopyimg.s3.us-east...	blur(4px) hue-rotate(270deg)	false	2020-04-2
9	1	https://picopyimg.s3.us-east...	brightness(50%) saturate(8,...	false	2020-04-2
10	10	https://picopyimg.s3.us-east...	grayscale(100%)	false	2020-04-2
11	10	https://picopyimg.s3.us-east...	contrast(75%) sepia(50%)	false	2020-04-2

Personal ⇕ > picopy-app

Overview   Resources   Deploy   Metrics

Installed add-ons $0.00/month

Heroku Postgres ☑ Hobby Dev
postgresql-slippery-90531

Dyno formation $0.00/month

This app is using free dynos

web npm start

ties   ▣ Terminal ▾

File Edit View Search Terminal Help

jett@jett-VirtualBox:~$ git push heroku master

★ ★ ★ ★

VS Code

- Easy to use, free, git bash integration, looks great.

Asana

- Project Tracking
- Group Rating: 2/5
- Powerful tool with lots of features
- Found them unnecessary
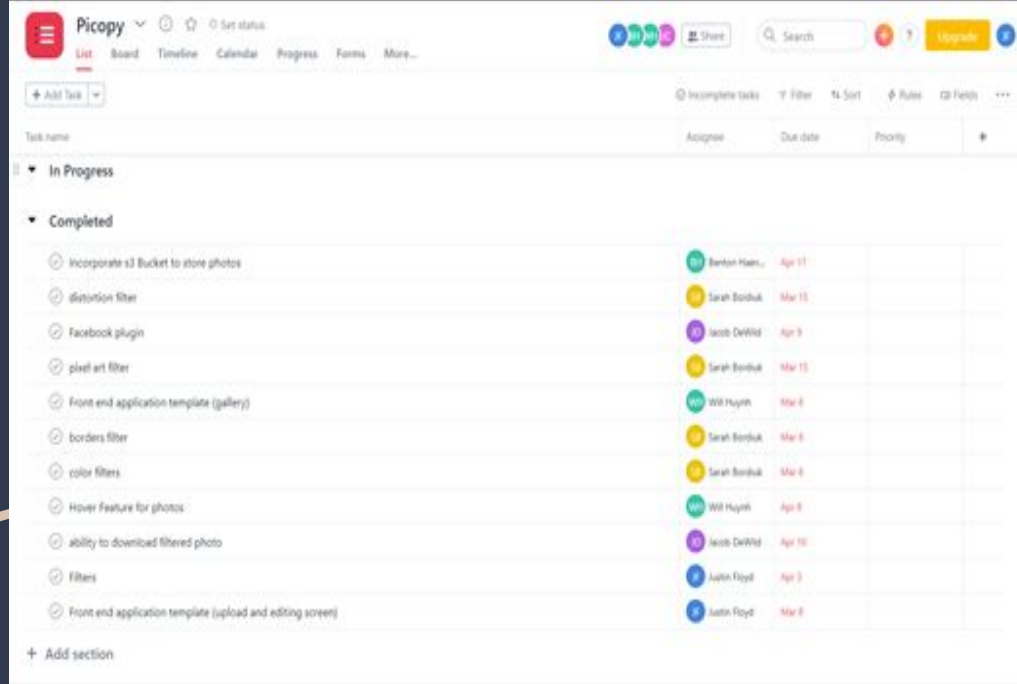
GroupMe

- Main Communication Tool

- Used for scheduling meetings and debugging

- Preferred over Slack
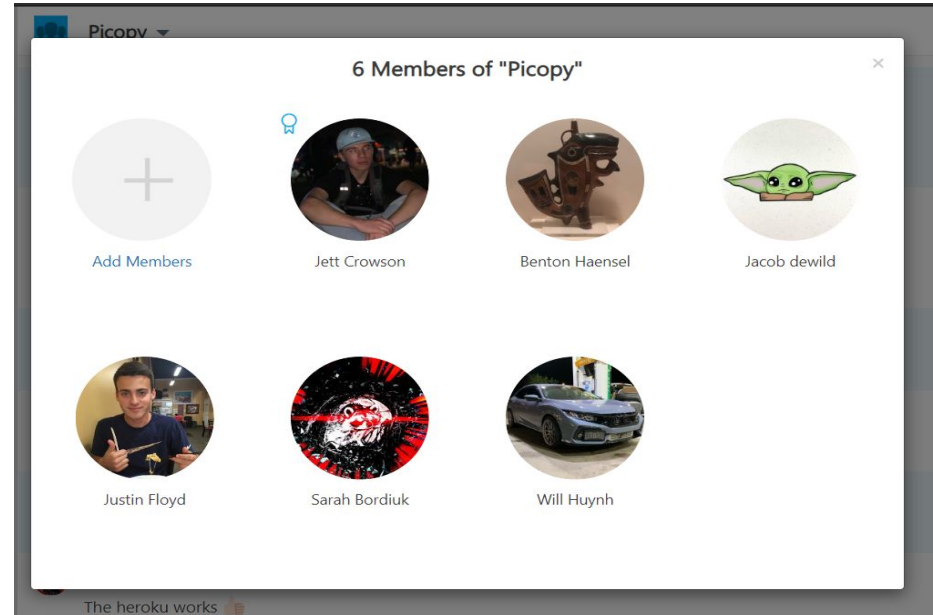
PostgreSQL

Simple to use and integrate with Heroku and Node.

Hard to make work with Windows.

```
picopy-app::DATABASE=> select p_user.userna
me, photo.photo_id from photo inner join p_
user on photo.user_id = p_user.user_id;
  username   | photo_id
-------------+----------
 jettcrowson |        1
 jettcrowson |        2
 jettcrowson |        3
 jettcrowson |        4
 admin       |        5
 admin       |        6
 admin       |        7
 admin       |        8
 admin       |        9
 JD100       |       10
 JD100       |       11
 User2       |       12
 User2       |       13
 User2       |       14
 User2       |       15
 User1       |       16
 User1       |       17
 admin       |       18
 admin       |       19
 admin       |       20
 admin       |       21
 admin       |       22
 admin       |       23
```

Methodology

- Used agile project management for easy updates to the requirements as well as enabling us to make on the fly changes

- Worked for us because we weren't sure starting out how our app would end up looking; allowed flexibility
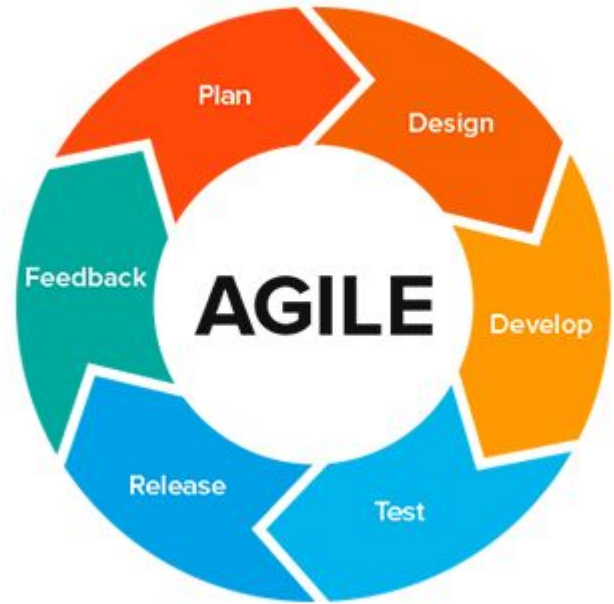
- ***Individuals and Interactions*** *over processes and tools*
- ***Working Software*** *over comprehensive documentation*
- ***Responding to Change*** *over following a plan*

https://www.wikiwand.com/en/Agile_software_development

Manual Testing

- Developed step-by-step UATs with acceptance criteria
- Manually conducted each test

Node.js & Express

- Express' app generator made getting started easy, and the rest of Node doable.

```javascript
var app = express();

//Cookie stuff
app.set('trust proxy', 1);
app.use(cookieSession({
  name: 'session',
  keys: ['key1', 'key2']
}))

// view engine setup
app.set('views', path.join(__dirname, 'views'));
app.set('view engine', 'ejs');

// uncomment after placing your favicon in /public
//app.use(favicon(path.join(__dirname, 'public', 'favicon.ico')));
app.use(logger('dev'));
  app.use(bodyParser.json({limit: '50mb'}));
    app.use(bodyParser.urlencoded({limit: '50mb', extended: true}));
app.use(cookieParser());
app.use(express.static(path.join(__dirname, 'public')));

app.use('/', index);
app.use('/gallery', gallery);
app.use('/register', register);
app.use('/createaccount',createAccount);
app.use('/login', login);
app.use('/logout', logout);
```

Challenges

Parsing Form Data to Send to Amazon Bucket

- Sending photo as form data

- Convert multi-part photo form-data from base64 string into a file using fs

- Send file from local folder to bucket

```
27    var base64Data = image_data.replace(/^data:image\/png;base64,/, "");
28    const localImage = path.resolve("out.png");
29    fs.writeFileSync(localImage, base64Data, 'base64', function(err) {
30      console.log(err);
31    });
```

Saving an Image with Applied Filters

- Saved pictures did not have applied CSS filters
- Used HTML Canvas object with a filter property
- Canvas allowed for more filters from JS library
- Converted Canvas with filters to an image

CSS

+

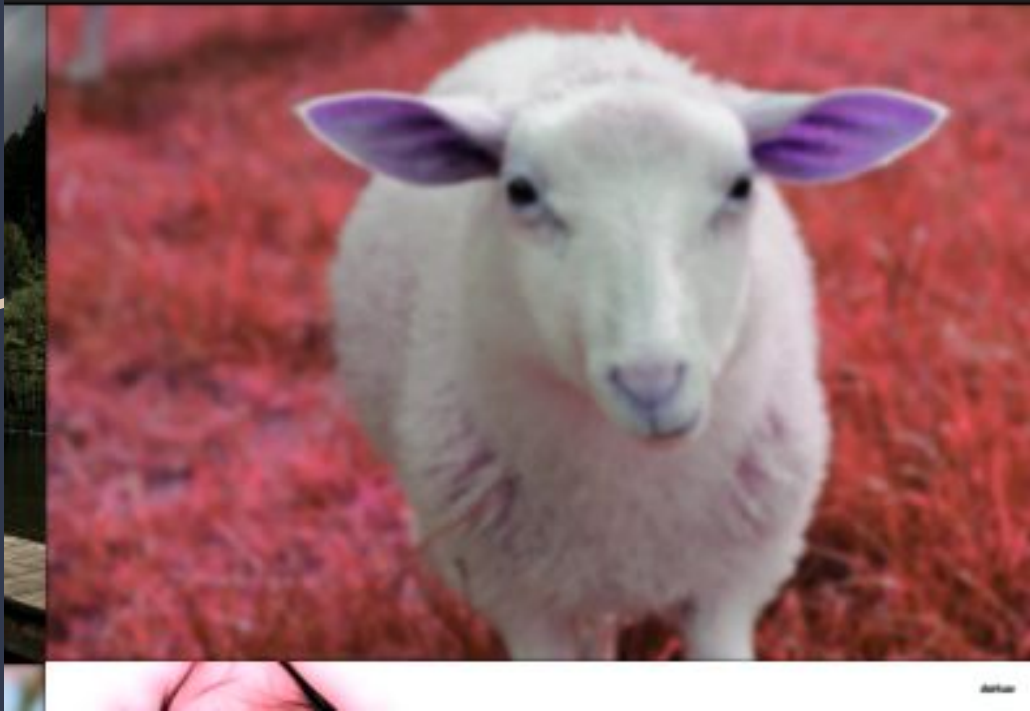HTML 5 HTML CANVAS

www.educba.com

Keeping a User Logged In

Needed a way to keep session throughout pages.

Solution: cookieSession

```
app.set('trust proxy', 1);
app.use(cookieSession({
  name: 'session',
  keys: ['key1', 'key2']
}))
```
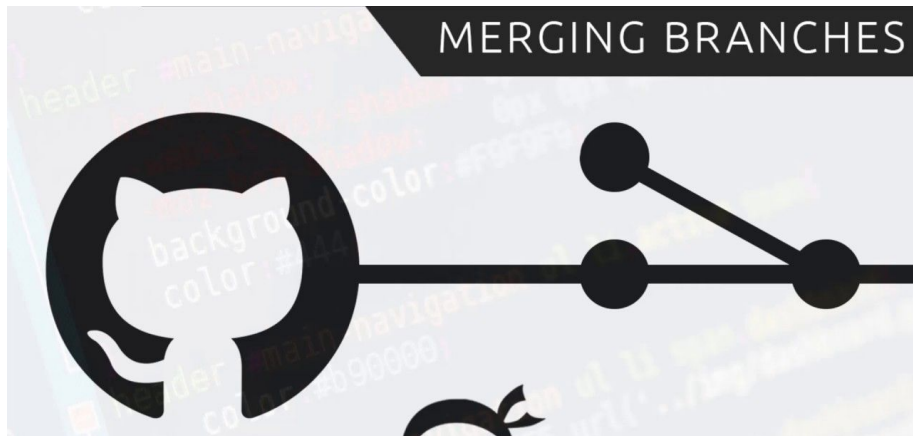
```
req.session.user = p[0];
res.render('index', {
    title: 'Picopy',
    user:req.session.user
});
```

Logged in as admin

Github Merging

- Merging branches was difficult and confusing

- Issues with overwriting

- Caused problems with multiple working on the project at the same time

Demo

User
Web Browser
HTML, CSS, Javascript

Requests by browser for web pages and to save/load images

HTTP

Front End Server & Hosting
Heroku

Requests proxied by Heroku

REST API

Hosted on Heroku

Application & Web Server
Node.js and Express

pg-promise node module

built in protocols

Database
Postgresql

REST API

aws-sdk node module

Hosted on Amazon

File System
Amazon Bucket