

ModelKB DB - Project Increment 4

Team Members

Brett Recker - Class ID: 22

Redwan Al Badawi - Class ID: 1

Increment Goals and Objectives

For this increment I made quite a few additions to my project. I made a few cosmetic tweaks to the banner bar so that the Logout button and logo were positioned better. I also updated the background color to gray.

Building on Increment 3, I updated the file upload (post) route to handle up to 12 files at once. This required changes to the html and typescript of the modeldb page:



ModelKB DB

[Logout](#)

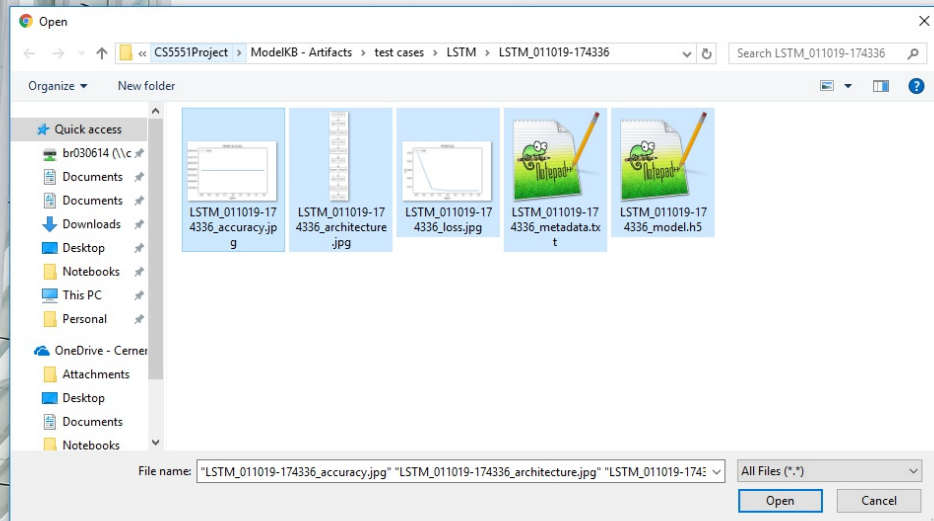
Upload File

[Choose Files](#)

No file chosen

[Upload](#)

Project *



```
const storage = new GridFsStorage({
  url: mongoURI,
  file: (req, file) => {
    return new Promise( (executor: { resolve, reject }) => {
      crypto.randomBytes( size: 16, callback: (err, buf) => {
        if (err) {
          return reject(err);
        }
        const filename = file.originalname;
        const bucketname = file.originalname.substring(0, file.originalname.lastIndexOf("_"));
        const fileInfo = {
          filename: filename,
          bucketName: bucketname
        };
        resolve(fileInfo);
      });
    });
  },
});

const upload = multer( options: { storage });

app.post('/api/upload', upload.array("uploads[]", 12), (req, res) => {
  //console.log(req.name.substr(0, req.name.indexOf('-')));
  res.json({array: req.array});
});
```

ModelKB DB

Upload File

Choose Files

5 files

Upload

LSTM_011019-174336_accuracy.jpg

LSTM_011019-174336_architecture.jpg

LSTM_011019-174336_loss.jpg

LSTM_011019-174336_metadata.txt

LSTM_011019-174336_model.h5

Project *

Find Indexes

FILTER {"filter":"example"}

QUERY RESULTS 1-5 OF 5

```
_id: ObjectId("5cd38d8bcc0c5f640e81cd1")
length: 26325
chunkSize: 261120
uploadDate: 2019-05-09T07:16:43.861+00:00
filename: "LSTM_011019-174336_architecture.jpg"
md5: "50faac61576dc0f6a2188f3e53922056"
contentType: "image/jpeg"
```

```
_id: ObjectId("5cd38d8bcc0c5f6408e81cd0")
length: 17912
chunkSize: 261120
uploadDate: 2019-05-09T02:16:43.861+00:00
filename: "LSTM_011019-174336_accuracy.jpg"
md5: "b93c2a9cd91fd6e170d6c47435d7b6ed"
contentType: "image/jpeg"
```

```
_id: ObjectId("5cd38dbcc0c5f6408e81cd2")
length: 16401
chunkSize: 261120
uploadDate: 2019-05-09T02:16:43.977+00:00
filename: "LSTM_011019-174336_loss.jpg"
md5: "2ffd51aeef47cdd1c36d883bb542b64e"
contentType: "image/jpeg"
```

```
_id: ObjectId("5cd38d8bcc0c5f6408e81cd3")
length: 271
chunkSize: 261120
uploadDate: 2019-05-09T02:16:43.861+00:00
filename: "LSTM_011019-174336_metadata.txt"
md5: "9b5cfc4f6fd56aab5e6199a269dfe82d"
```

I also added two drop downs to the page for searching/selecting experiments and displaying their associated artifacts:

```

1 <div class="input-form">
2   <h3>Upload File</h3>
3   <input class="mat-raised-button" type="file" (change)="onFileSelected($event)" multiple/>
4   <button class="btn-primary" type="button" (click)="onUpload()">Upload</button>
5
6   <div class="row" *ngIf="filesToUpload.length > 0">
7     <div class="table">
8       <ul class="files" *ngFor="let file of filesToUpload">
9         <li><a>{{file.name}}</a></li>
10      </ul>
11    </div>
12  </div>
13 </div>
14
15 <mat-form-field class="project-form">
16   <mat-label>Project</mat-label>
17   <mat-select required (selectionChange)="projectSelect($event.value)">
18     <mat-option value="CNN">CNN</mat-option>
19     <mat-option value="FashionMnist">FashionMnist</mat-option>
20     <mat-option value="LSTM">LSTM</mat-option>
21   </mat-select>
22 </mat-form-field>
23
24 <mat-form-field *ngIf="files" class="experiment-form">
25   <mat-select required (selectionChange)="experimentSelect($event.value)">
26     <mat-label>Experiments</mat-label>
27     <div *ngFor="let file of files">
28       <mat-option *ngIf="file.name.includes(event) > 0 && file.name.includes('files') > 0" value="{{file.name}}>{{file.name.substring(0, file.name.lastIndexOf('.'))}}</mat-option>
29     </div>
30   </mat-select>
31 </mat-form-field>
32
33 <div *ngIf="files1" class="experiment-files">
34   <div *ngFor="let flinks of files1">
35     <a href="/api/file/{{event1}}/{{flinks.filename}}>{{flinks.filename}}</a>
36   </div>
37 </div>
38

```

```

onFileSelected(fileInput: any) {
  this.filesToUpload = fileInput.target.files as Array<File>;
}

onUpload() {
  const fd = new FormData();
  const files: Array<File> = this.filesToUpload;
  console.log(files);

  for (let i = 0; i < files.length; i++) {
    fd.append( name: 'uploads[]', files[i], files[i].name);
  }
  this.http.post( url: '/api/upload', fd)
    .subscribe( next: res => {
      console.log(res);
    });
}

projectSelect(event) {
  this.event = event;
  this.files1 = '';
  console.log('EVENT -> ' + this.event);
  this.http.get( url: '/api/all')
    .subscribe( next: res => {
      this.files = JSON.parse(JSON.stringify(res));
      console.log(this.files);
    });
}

experimentSelect(event) {
  this.event1 = event.substring(0, event.lastIndexOf('.'));
  console.log('EVENT 1 -->' + this.event1);
  this.http.get( url: '/api/collection/' + this.event1)
    .subscribe( next: res => {
      this.files1 = JSON.parse(JSON.stringify(res));
      console.log(this.files1);
    });
}
}

```

ModelKB DB

Upload File

Choose Files

No file chosen

Upload

Project *

CNN

Experiments

CNN011019-220151

CNN011019-220728

CNN011019-221140

ModelKB DB

Upload File

Choose Files

No file chosen

Upload

Project *

CNN

*

CNN011019-220151

CNN011019-220151_architecture.jpg

CNN011019-220151_metadata.txt

CNN011019-220151_accuracy.jpg

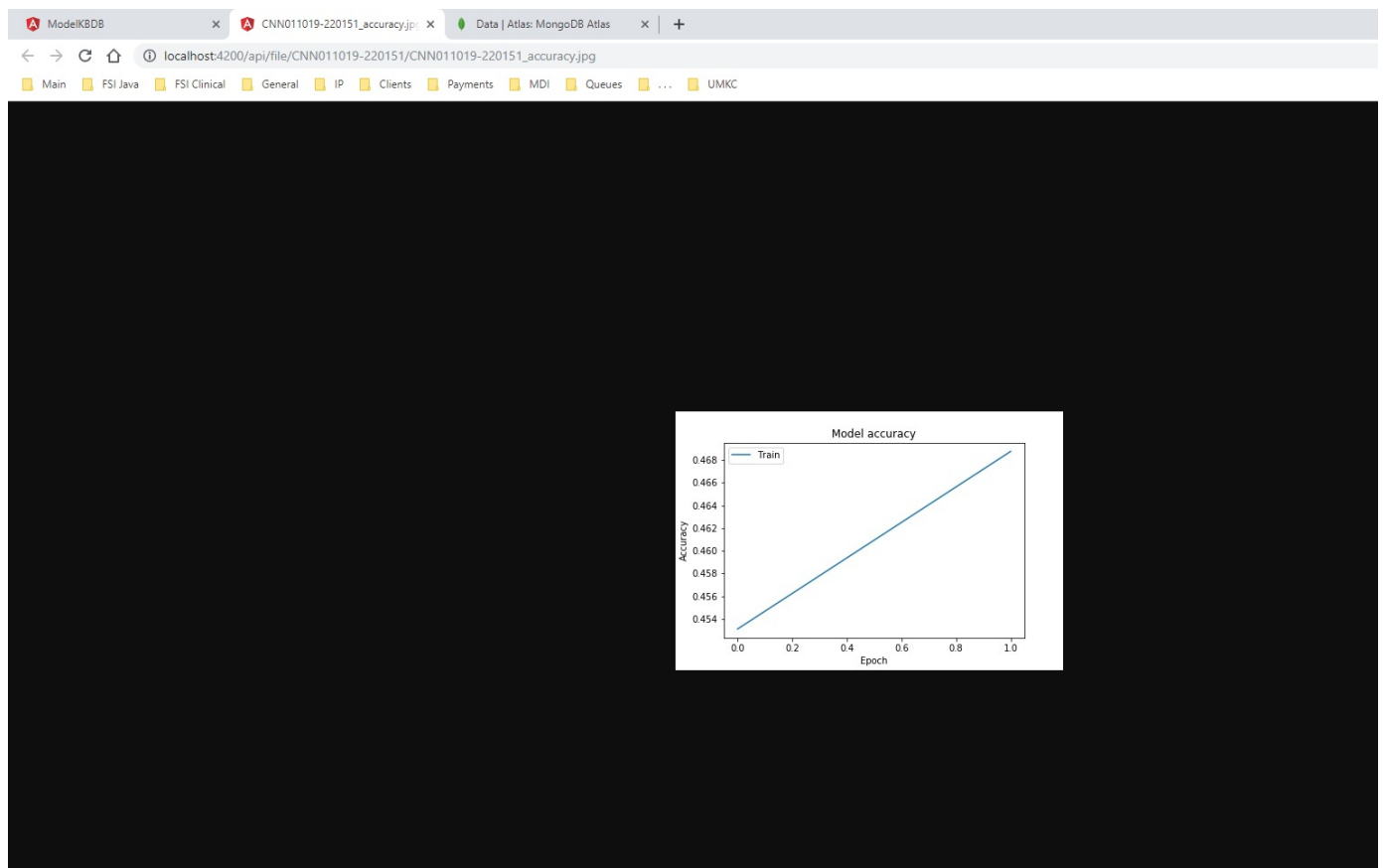
CNN011019-220151_loss.jpg

CNN011019-220151_model.h5

This required a new get route to be added to the app.js file for returning all collections in MongoDB:

```
app.get('/api/all', (req, res) => {
  conn.db.listCollections().toArray((err, collInfos) => {
    if(!collInfos) {
      return res.status(404).json({
        err: 'No Collections Exist'
      });
    }
    return res.json(collInfos);
  });
});
```

Clicking these links will open the artifacts in a separate window:



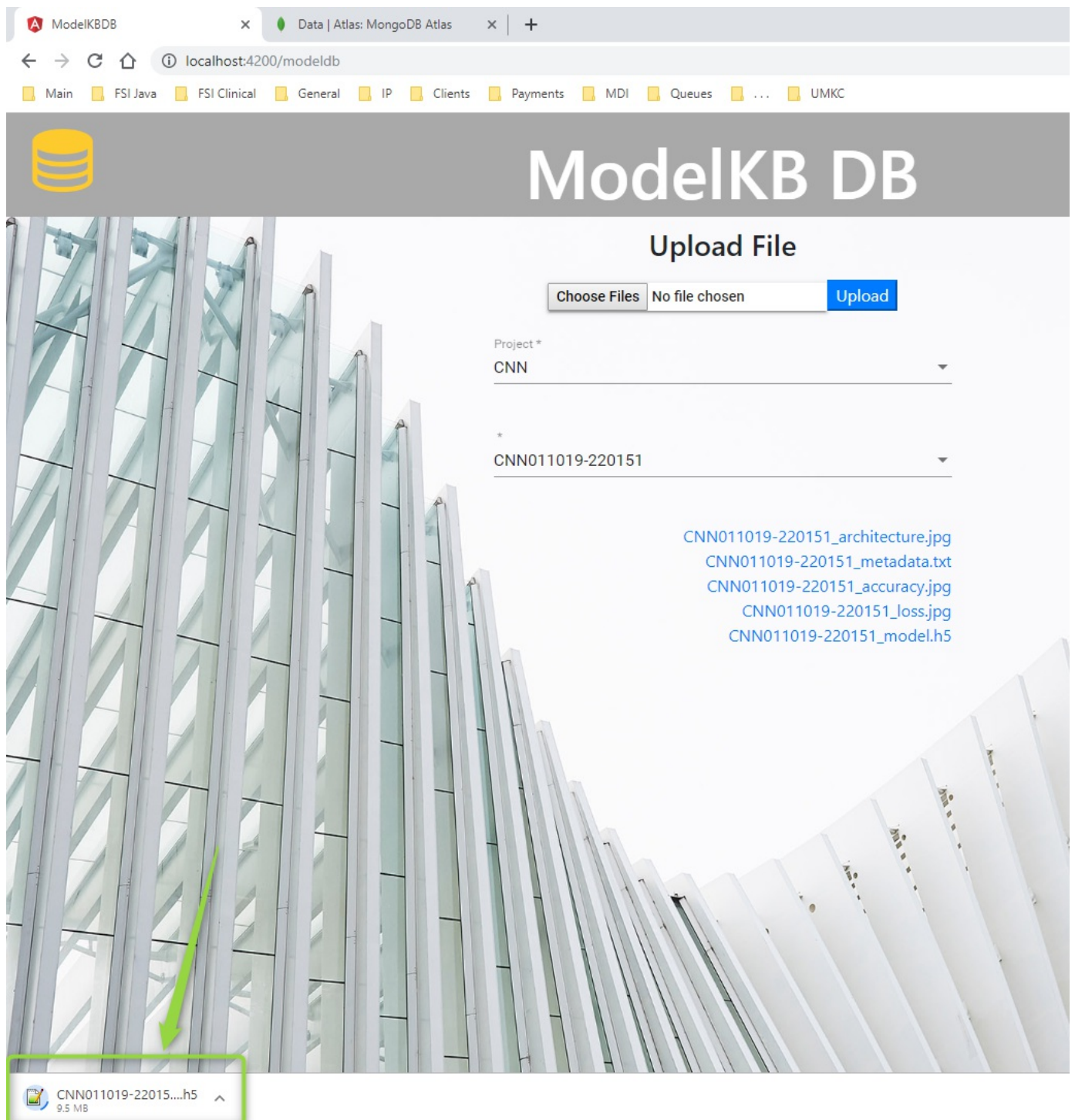
ModelKBDB x localhost:4200/api/file/CNN0110 x

localhost:4200/api/file/CNN011019-220151/CNN011019-220151

Main FSI Java FSI Clinical General IP Clients Pay

```
model_name:CNN011019-220151
framework:keras 2.2.2
size:9793.952 kilobytes
epochs:2
layersCount:7
InputTensors:(None, 64, 64, 3)
OutputTensor:(None, 1)
Optimizer:Adam
LossFunction:binary_crossentropy
AccuracyValue:0.46875
LossValue:0.7201308608055115
model_name:CNN011019-220151
framework:keras 2.2.2
size:9793.952 kilobytes
epochs:2
layersCount:7
InputTensors:(None, 64, 64, 3)
OutputTensor:(None, 1)
Optimizer:Adam
LossFunction:binary_crossentropy
AccuracyValue:0.46875
LossValue:0.7201308608055115
```

Clicking the hyperlink for a .h5 file automatically downloads it:



Outcome

This project was a lot of work but helped me learn so much. While I did not have time to deploy my app using Heroku, I still plan to complete this before the final project submission. Also, I was not able to implement the compare functionality but since my project features a simple API, it allows for easily adding more functionality in the future.