1. Introduction
   1. Objective
   2. Structure
2. Project Management
   1. Stand-up meetings and progression
   2. Sprint 1
      1. Meeting 1 Date : 13/02/2020
      2. Meeting 2 Date : 20/02/2020
      3. Meeting 3 Date : 21/02/2020
      4. Meeting 4 Date : 23/02/2020
      5. Sprint 1 Retrospective
   3. Sprint 2
      1. Meeting 1 Date : 24/02/2020
      2. Meeting 2 Date : 26/02/2020
      3. Meeting 3 Date : 29/02/2020
      4. Meeting 4 Date : 03/03/2020
      5. Sprint 2 Retrospective
   4. Sprint 3
      1. Meeting 1 Date : 25/03/2020
      2. Meeting 2 Date : 27/03/2020
      3. Meeting 3 Date : 30/03/2020
      4. Meeting 4 Date : 02/04/2020
      5. Meeting 5 Date : 04/04/2020
      6. Meeting 6 Date : 06/04/2020
      7. Sprint 3 Retrospective
   5. Sprint 4
      1. Meeting 1 Date : 11/04/2020
      2. Meeting 2 Date : 13/04/2020
      3. Meeting 3 Date : 14/04/2020
      4. Sprint 4 Retrospective
   6. Burndown analysis
3. Development operations
   1. Local Environment
   2. GitHub repository
      1. Repository Structure
   3. Amazon AWS server
   4. Amazon RDS MySQL Database
      1. Static Dublin Bike Data
      2. Dynamic Dublin Bike Data
      3. Weather Data
   5. Deployment on EC2 Instance
4. Back-end Development
   1. API Scrapers
   2. Cron Program
   3. Flask Application
      1. get\_data
      2. station\_data
      3. get\_station\_history
      4. get\_prediction
      5. current\_weather:
      6. toCSV
   4. Data Analysis and Machine learning
      1. Weather prediction
      2. Bike station prediction
   5. Accuracy check
5. Front End Development
   1. HTML
   2. CSS
   3. JavaScript
   4. jQuery
6. Project Delivery and Future Scope
   1. Salient Features
   2. Key Shortfalls and Planned Improvements

1. Introduction…………………………………………………………………………….

1.1. Objective……………………………………………………………………….

1.2. Structure……………………………………………………………………….

2. Project Management………………………………………………………………….

2.1. Stand-up meetings and progression………………………………………...

2.2. Sprint 1…………………………………………………………………………

2.2.1. Meeting 1 Date : 13/02/2020…………………………………………

2.2.2. Meeting 2 Date : 20/02/2020…………………………………………

2.2.3. Meeting 3 Date : 21/02/2020…………………………………………

2.2.4. Meeting 4 Date : 23/02/2020…………………………………………

2.2.5. Sprint 1 Retrospective………………………………………………...

2.3. Sprint 2…………………………………………………………………………

2.3.1. Meeting 1 Date : 24/02/2020…………………………………………

2.3.2. Meeting 2 Date : 26/02/2020…………………………………………

2.3.3. Meeting 3 Date : 29/02/2020…………………………………………

2.3.4. Meeting 4 Date : 03/03/2020…………………………………………

2.3.5. Sprint 2 Retrospective………………………………………………...

2.4. Sprint 3…………………………………………………………………………

2.4.1. Meeting 1 Date : 25/03/2020…………………………………………

2.4.2. Meeting 2 Date : 27/03/2020…………………………………………

2.4.3. Meeting 3 Date : 30/03/2020…………………………………………

2.4.4. Meeting 4 Date : 02/04/2020…………………………………………

2.4.5. Meeting 5 Date : 04/04/2020…………………………………………

2.4.6. Meeting 6 Date : 06/04/2020…………………………………………

2.4.7. Sprint 3 Retrospective………………………………………………...

2.5. Sprint 4…………………………………………………………………………

2.5.1. Meeting 1 Date : 11/04/2020…………………………………………

2.5.2. Meeting 2 Date : 13/04/2020…………………………………………

2.5.3. Meeting 3 Date : 14/04/2020…………………………………………

2.5.4. Sprint 4 Retrospective………………………………………………...

2.6. Burndown analysis…………………………………………………………….

3. Development operations……………………………………………………………..

3.1. Local Environment…………………………………………………………….

3.2. GitHub repository……………………………………………………………...

3.2.1. Repository Structure…………………………………………………..

3.3. Amazon AWS server………………………………………………………….

3.4. Amazon RDS MySQL Database…………………………………………….

3.4.1. Static Dublin Bike Data……………………………………………….

3.4.2. Dynamic Dublin Bike Data……………………………………………

3.4.3. Weather Data………………………………………………………….

3.5. Deployment on EC2 Instance………………………………………………..

4. Back-end Development……………………………………………………………….

4.1. API Scrapers…………………………………………………………………..

4.2. Cron Program………………………………………………………………….

4.3. Flask Application………………………………………………………………

4.3.1. get\_data………………………………………………………………

4.3.2. station\_data……………………………………………………………

4.3.3. get\_station\_history……………………………………………………

4.3.4. get\_prediction…………………………………………………………

4.3.5. current\_weather….……………………………………………………

4.3.6. toCSV ………………………………………………………………….

4.4. Data Analysis and Machine learning………………………………………...

4.4.1. Weather prediction…………………………………………………….

4.4.2. Bike station prediction………………………………………………...

4.5. Accuracy check………………………………………………………………..

5. Front End Development………………………………………………………………

5.1. HTML…………………………………………………………………………...

5.2. CSS…………………………………………………………………………….

5.3. JavaScript……………………………………………………………………...

5.4. jQuery…………………………………………………………………………..

6. Project Delivery and Future Scope…………………………………………………..

6.1. Salient Features……………………………………………………………….

6.2. Key Shortfalls and Planned Improvements…………………………………