| Tasks  | Progress | Start      | Due             | Start on Day*    | Duration* | Hours             | Deliverable                                      |
|--|----------|------------|-----------------|------------------|-----------|-------------------|--|
| orecast: 1.0 Research and identify Financial forecasting algorithms                    |          |            |                 |                  |           |                   |  |
| orecast: 1.1 Academic and industy paper research on algorithm                          | 100%     | 12/21/2020 | 1/25/2021       | 0                | 35        | 70                |  |
| orecast: 1.2 Create a list of viable algorithm   | 100%     | 1/1/2021   | 1/25/2021       | 11               | 24        | 16                |  |
| orecast: 1.3 Create a planning review with algorithms                                  | 100%     | 1/2/2021   | 1/29/2021       | 12               | 27        | 24                |  |
| Actual: 1.0 literature review and tensorflow, python learning                          | 100%     | 12/21/2020 | 2/14/2021       | 0                | 55        | 90 Finished 32 re | esearch paper                                    |
| orecast: 2.0 Develop forecasting algorithms that can forecast S&P 500                  |          |            |                 |                  |           |                   |  |
| orecast: 2.1 Research source code and help for chosen algorithms                       | 100%     | 2/1/2021   | 3/1/2021        | 42               | 28        | 20                |  |
| orecast: 2.2 Collect data from API   | 100%     | 3/1/2021   | 3/3/2021        | 70               | 2         | 6                 |  |
| orecast: 2.3 ETL   | 100%     | 3/3/2021   | 3/8/2021        | 72               | 5         | 20                |  |
| orecast: 2.4 Data correlation test   | 100%     | 3/9/2021   | 3/16/2021       | 78               | 7         | 20                |  |
| precast: 2.5 Develop and train the algorithm 1   | 100%     | 3/17/2021  | 3/24/2021       | 86               | 7         | 40                |  |
| orecast: 2.6 Develop and train the algorithm 2   | 100%     | 3/25/2021  | 4/1/2021        | 94               | 7         | 40                |  |
| orecast: 2.7 Develop and train the algorithm 3   | 100%     | 4/2/2021   | 4/9/2021        | 102              | 7         | 40                |  |
| Forecast: 2.8 Develop and train the algorithm 4  | 100%     | 4/10/2021  | 4/17/2021       | 110              | 7         | 40                |  |
| ctual: 2.0 Tensorflow and python learning, ETL and algorithm development               | 100%     | 2/1/2021   | 5/1/2021        | 42               | 89        | 120 ETL feature a | nd traget data, developed 5 algorithm            |
| precast: 3.0 Test developed algorithm on S&P 500                                       |          |            |                 |                  |           |                   |  |
| precast: 3.1 Collect data and ETL for S&P 500  | 100%     | 4/18/2021  | 4/23/2021       | 118              | 5         | 10                |  |
| precast: 3.2 Test the trained algorithms on S&P 500                                    | 100%     | 4/24/2021  | 5/9/2021        | 124              | 15        | 30                |  |
| orecast: 3.3 Collect the results in the research paper                                 | 100%     | 4/24/2021  | 5/14/2021       | 124              | 20        | 40                |  |
| ctual: 3.0 Test and train algorithm, writing research paper                            | 100%     | 4/15/2021  | 6/15/2021       | 115              | 61        | 90 forcasting res | ult and a draft research paper                   |
| orecast: 4.0 Test developed algorithm on two time frames                               |          |            |                 |                  |           |                   |  |
| orecast: 4.1 Test the algorithms for the first time frames                             | 100%     | 4/24/2021  | 5/14/2021       | 124              | 20        | 20                |  |
| orecast: 4.2 Test the algorithms for the second time frames                            | 100%     | 4/24/2021  | 5/14/2021       | 124              | 20        | 20                |  |
| orecast: 4.3 Collect the results in the research paper                                 | 100%     | 5/1/2021   | 5/21/2021       | 131              | 20        | 40                |  |
| ctual 4.0 Tuning the algorithm with training and testing data, writing research paper  | 100%     | 5/21/2021  | 6/15/2021       | 151              | 25        | 30 5 algorithm w  | ith different setting and a draft research paper |
| orecast: 5.0 Compare algorithm performance over the tests and produce a comparison doc | ument    |            |                 |                  |           |                   |  |
| precast: 5.1 Record first time frames and second time frames in advance values         | 100%     | 5/1/2021   | 5/21/2021       | 131              | 20        | 16                |  |
| orecast: 5.2 Record Accuracy   | 100%     | 5/1/2021   | 5/21/2021       | 131              | 20        | 16                |  |
| orecast: 5.3 Prediction of Change in Direction   | 100%     | 5/15/2021  | 5/21/2021       | 145              | 6         | 10                |  |
| orecast: 5.4 Compare each of the algorithms results                                    | 100%     | 5/21/2021  | 5/28/2021       | 151              | 7         | 20                |  |
| ctual 5.0 Algorithm comparison, writing research paper                                 | 100%     | 6/15/2021  | 6/25/2021       | 176              | 10        | 15 best algorithm | n comparsion and return result, a draft research |
| orecast: 6.0 Develop conclusions on the best algorithms                                |          |            |                 |                  |           |                   |  |
| orecast: 6.1 Create a conclusion on the best algorithm(s)                              | 100%     | 5/28/2021  | 6/9/2021        | 158              | 12        | 20                |  |
| orecast: 6.2 Develop Viva  | 10%      | 6/9/2021   | 6/19/2021       | 170              | 10        | 20                |  |
| orecast: 6.3 Present the conclusions made  | 10%      | 7/1/2021   | 7/1/2021        | 192              | 0         | 2                 |  |
| ctual 6.0 research paper and conclusion  | 100%     | 6/20/2021  | 6/30/2021       | 181              | 10        | 20 research pap   | er and appendix                                  |
|  |          |            | *Cells calculat | ed automatically |           |                   |  |

