**MOM - Meeting 1 (27th July 2021) Supervisor**

 As discussed,:

* We redefined the scope of the project.
* New scope includes the following two points.
* Study the effects of REFLC devices on the occurrence of bushfires.

o   Assumption: These devices are installed after 2018, and we have all the data for REFLC devices.

·        Developing the model for predicting bush fires.

o   (Models: Classification Models such as ANN, RF, SVM)

o   Challenges: Coming up with the right features for feature engineering.

§  Weather Information: Percentage Change in the average yearly from 2008 to 2019. How the temperature change affects.

§  Area (Local Government Area)

§  Density of trees.

§  Population in the area.

§  Distance to the populous area.

§  Distance to tourist attraction.

* We will present this new scope to the client for approval.
* If the client wants to add more points, we can add only if they can first provide the required datasets for it.

**MOM - Meeting 1 (28th July 2021) Client**

Following are the minutes of the meeting with our client.

Carolyn Comment  = C

Geoff Comment = G  
Waqar Comment = W

As discussed:

* We presented the new scope of the project and showed them the two-point on which we want to start work on.
* W: Is the scope alright?
* C: As long as your supervisor thinks it's enough for you to show that you have completed your project we are fine.
* We asked about the REFLC devices.
* C: The devices are installed from 2018 onwards in some areas, and most devices are to be installed in late 2023.
* Weather data from bush fire.
* C: She can provide weather data.
* The client said that we can also do a sensitivity analysis in which we can create a simulation to see if the bush fire areas have less fire once the REFLC devices are on.
* Carolyn said that we can start by modeling bush fire and then we should work on point 1. Study the effect of REFLC devices.

These are the main points we discussed. Please let me know if you have questions.

**MOM - Meeting 2 (3rd August 2021) Supervisor**

 As discussed:

* Waqar will collect data related bushfires and merge the complete dataset.
* Monit will dataset for geographical features.
* We will ask for the code base as we have resolved access issues.
* If the client wants to add more points, we can add only if they can first provide the required datasets for it.

**MOM - Meeting 2 (4th August 2021) Client**

As discussed:

* Carolyn shared some files for weather data.  
  (We have got the link It has multiple folders; we need to go through it to find what we require.)
* We asked about the code access of the F-factor. Carolyn sent us the code on which we were supposed to work, she explained some working as well.   
  (Monit will run the code today to see if it's working and the meeting for tomorrow is to discuss this with you.)

These are the main points we discussed. Please let me know if you have questions.

**MOM - Meeting 3 (10th August 2021) Supervisor**

 As discussed:

* Collection of aggregated data was discussed.
* Will ask the client about the code base and what changes are expected of us from the given code.
* Add more geographic features to the aggregated file.

**MOM - Meeting 3 (11th August 2021) Client**

Following are the other details. If you want to discuss this we can have a meeting to decide our new strategy or you can suggest our new direction on the email.

The crux of the meeting is that the client wants to us to come with some logical strategy to decide the weights for their code. Which follows some logical solution and the weights which we calculate should be able to calculate the penalty amount under some threshold.

**Details:**

* The code we have contains data from 2012 to 2014. It calculates penalty and then bootstrapping is used to simulate that these penalties stay under average value within 90 percent of the times.
* Since 2014 the distributors calculate the penalties themselves in excel file. With those fixed weights. These weights haven’t changed since 2012.
* They have not done bootstrapping after 2014.
* Penalty starts for ignition only. Fore spread is not a concern.
* The formula they used is as follow
* Text

  Description automatically generated

 As discussed:

* What is 22 in hot year and normal year Graphs Calculation? How 22 was selected.
  + This value indicates Total Fire Band which is set to 22. TFB is a day when fire danger is moderate to severe. This data is another excel file which is given by CFD.
* A good characteristic for weights scheme?
  + A good scheme will have following main points.
    - A good characteristic weight scheme is the one which has some logical explanation. As of now the weights have been decided without any logical consideration. They are just random values which works.
    - A good scheme should have threshold value. For example. If the government decides that for yearly penalty should not exceed 1 million dollars then the weights should be constraint within the limit.
    - Very clear economic cost, it should demonstrate a goal.
* How can we evaluate the different weight scheme?
  + Answer same as above
* Reasons behind steps they have taken.
  + There is no significant thought process. They needed to calculate the penalty for each fire to decide the amount of penalty.
* Why do you multiply all factors?
  + The system works no core reason.

**MOM - Meeting 4 (17th August 2021) Supervisor**

 As discussed:

* We will present the Idea of using Convex Optimization constraints for this problem.
* We need to collect more geographical features for dataset.
* Read theory about the optimization.

**MOM - Meeting 4 (18th August 2021) Client**

 As discussed:

Client agrees to explore Convex Optimization constraints approach.

* How rewards is beginning currently calculated in the current systems.
  + To calculate the rewards there is no such rule. If value of fires is below threshold. Rewards is calculated manually.

**MOM - Meeting 5 (24th August 2021) Supervisor**

 As discussed:

* Re formulation of the problem.
* Discussed Mathematical interpretation of the new solution.

**MOM - Meeting 5 (25th August 2021) Client**

 As discussed:

* The client didn’t approve the new formulation and suggested some changes.
* We need to bound the penalty instead of weights.

**MOM - Meeting 6 (31st August 2021) Supervisor**

 As discussed:

* Re formulation of the problem.
* Discussed Mathematical interpretation of the new solution.
* No final consensus on the formulation
* Will investigate further.
* Need to add solar exposure data to the dataset.

**MOM - Meeting 6 (1st September 2021) Client**

 As discussed:

* Carolyn was on leave.
* Will discuss the new formulation with both of them next week.

**MOM - Meeting 7 (31st August 2021) Supervisor**

 As discussed:

* Discussed Mathematical interpretation of the new solution.
* Will fit data in the new dataset, will start by logistic regression.
* No final consensus on the formulation
* Will investigate further.

**MOM - Meeting 7 (1st September 2021) Client**

 As discussed:

* Client to agreed to use the dataset for fitting the model.
* Along with the development on models we will try to re formulate F-Factor problem.

**MOM - Meeting 8 (13th September 2021) Supervisor**

 As discussed:

* Discussed Mathematical interpretation of the new solution.
* Logistic Regression was fitted and results were discussed.
* Monit will try to different sampling methods.
* Waqar will code the new mathematical formulation for the F-Factor problem.

**MOM - Meeting 8 (14st September 2021) Client**

 As discussed:

* Client didn’t show up.
* Will send out an email to discuss their availability.

**MOM - Meeting 9 (21th September 2021) Supervisor**

 As discussed:

* Monit presented different sampling methods.
* Waqar presented code the for new mathematical formulation for the F-Factor problem.

**MOM - Meeting 9 (22nd September 2021) Client**

 As discussed:

* Client