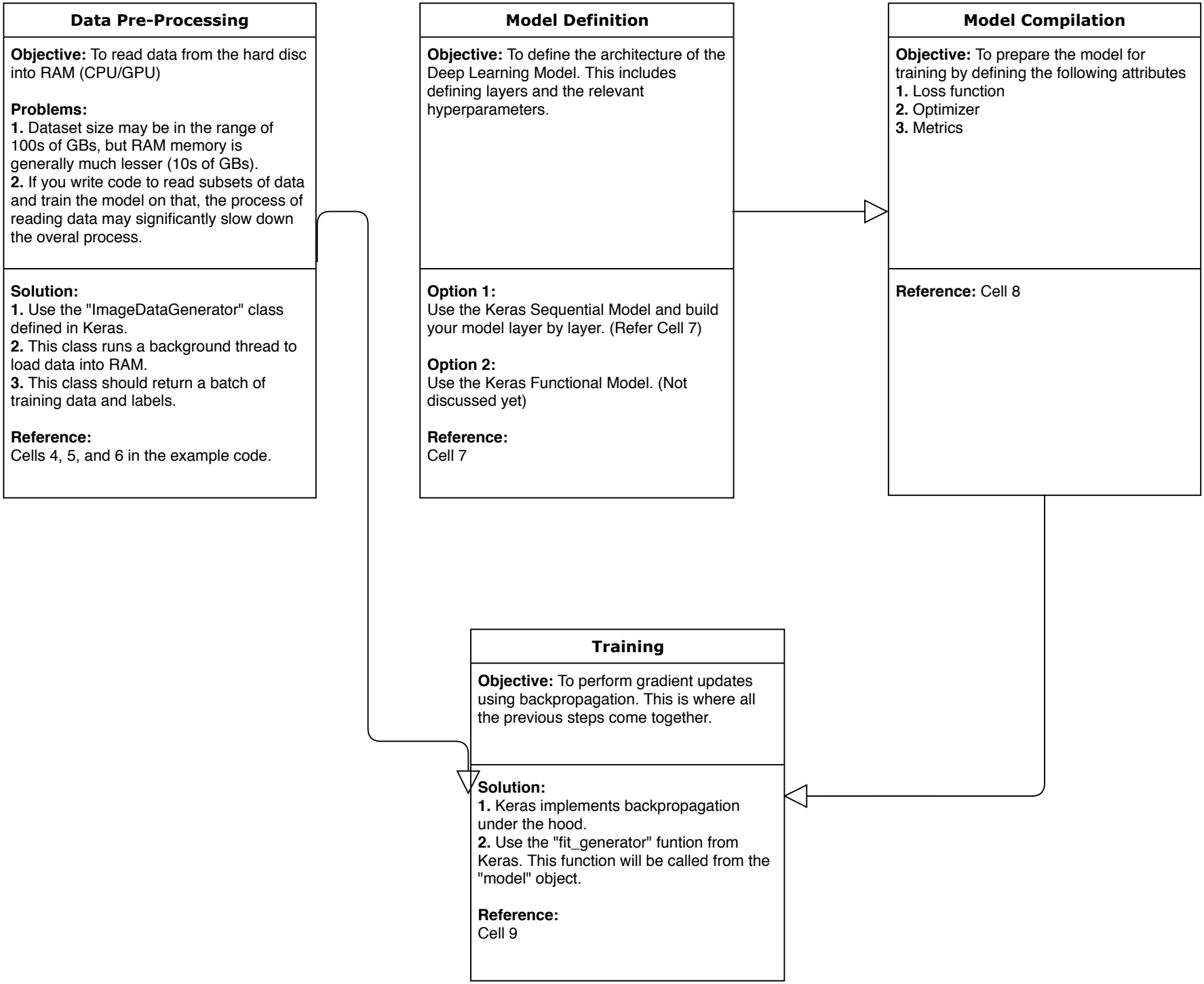
Data Pre-Processing
Objective: To read data from the hard disc into RAM (CPU/GPU)
Problems:
1. Dataset size may be in the range of 100s of GBs, but RAM memory is generally much lesser (10s of GBs).
2. If you write code to read subsets of data and train the model on that, the process of reading data may significantly slow down the overal process.
Solution:
1. Use the "ImageDataGenerator" class defined in Keras.
2. This class runs a background thread to load data into RAM.
3. This class should return a batch of training data and labels.
Reference:
Cells 4, 5, and 6 in the example code.
Model Definition
Objective: To define the architecture of the Deep Learning Model. This includes defining layers and the relevant hyperparameters.
Option 1:
Use the Keras Sequential Model and build your model layer by layer. (Refer Cell 7)
Option 2:
Use the Keras Functional Model. (Not discussed yet)
Reference:
Cell 7
Model Compilation
Objective: To prepare the model for training by defining the following attributes
1. Loss function
2. Optimizer
3. Metrics
Reference: Cell 8
Training
Objective: To perform gradient updates using backpropagation. This is where all the previous steps come together.
Solution:
1. Keras implements backpropagation under the hood.
2. Use the "fit_generator" funtion from Keras. This function will be called from the "model" object.
Reference:
Cell 9

Text