What?

* What is Entity embedding?
  + Categorical encoding approach
  + Map categories of categorical variables in a function approximation problem into Euclidean space
  + Mapping is learned by a neural network

Why?

* Problems with OHE and LE?
  + Applying OHE (One Hot Encoding) to high cardinal categorical variable introduces humongous number of features which takes unrealistic number of computational resources. It also introduces sparsity into the dataset which is not suitable Neural networks
  + Neural network is also not suitable to approximate arbitrary non-continuous functions as it assumes certain level of continuity in the data. Also, continuity in data guarantees convergence of the optimization. However, approaches like OHE and LE (Label Encoding) encodes the categories using non-continuous values
* A bit about Embeddings…
  + Embeddings are the learnable parameters of the Neural network architecture that represents similar elements with similar values that suggests similar elements are close to each other
  + For example, in word embeddings, similar or synonymous words are put closer to each other in the Euclidean space
  + This way Neural networks can learn from the embedding parameters which elements are similar
  + Similarly, embeddings for categories can be learnt
* What are the benefits does entity embedding provides?

How?