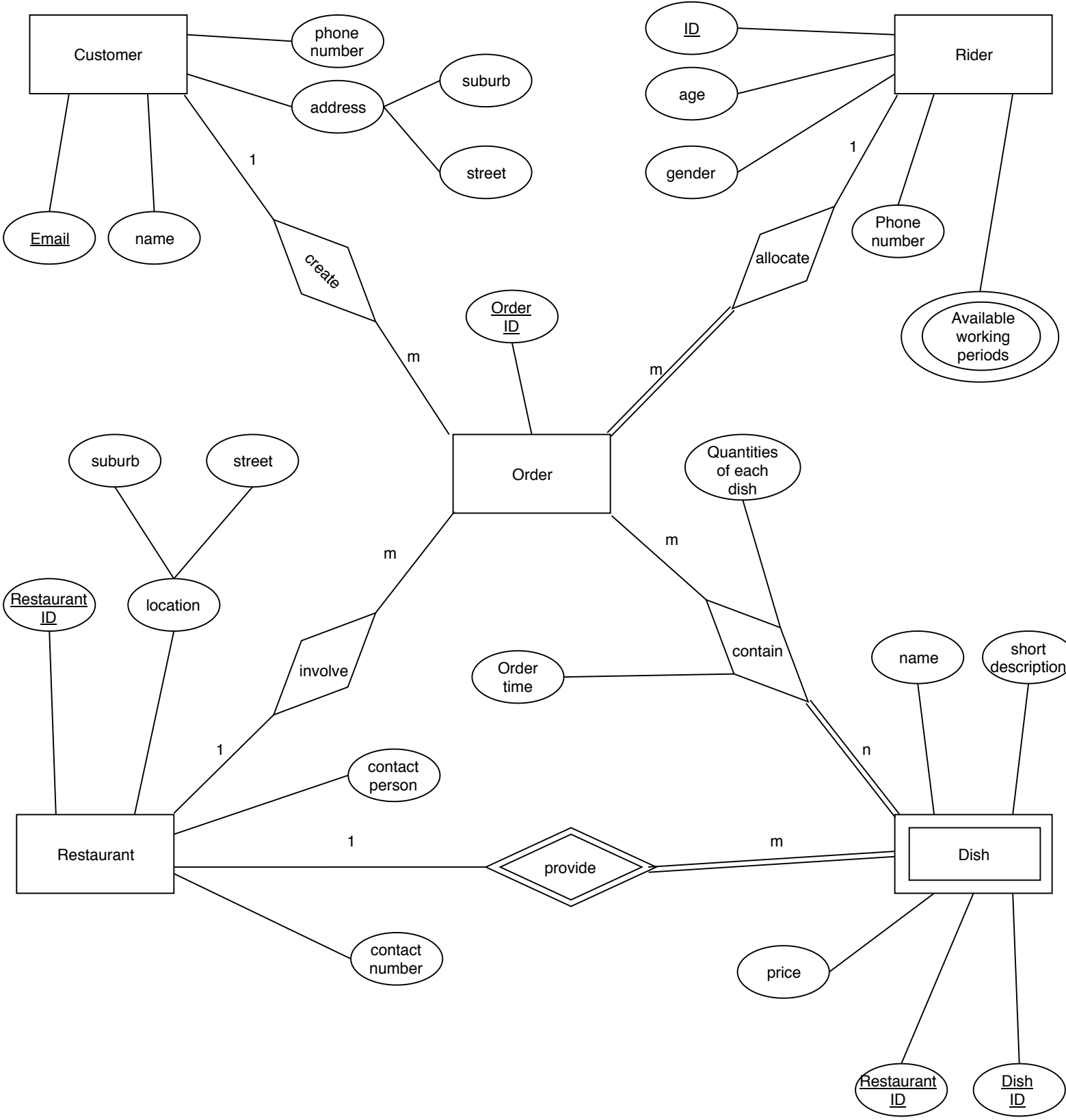
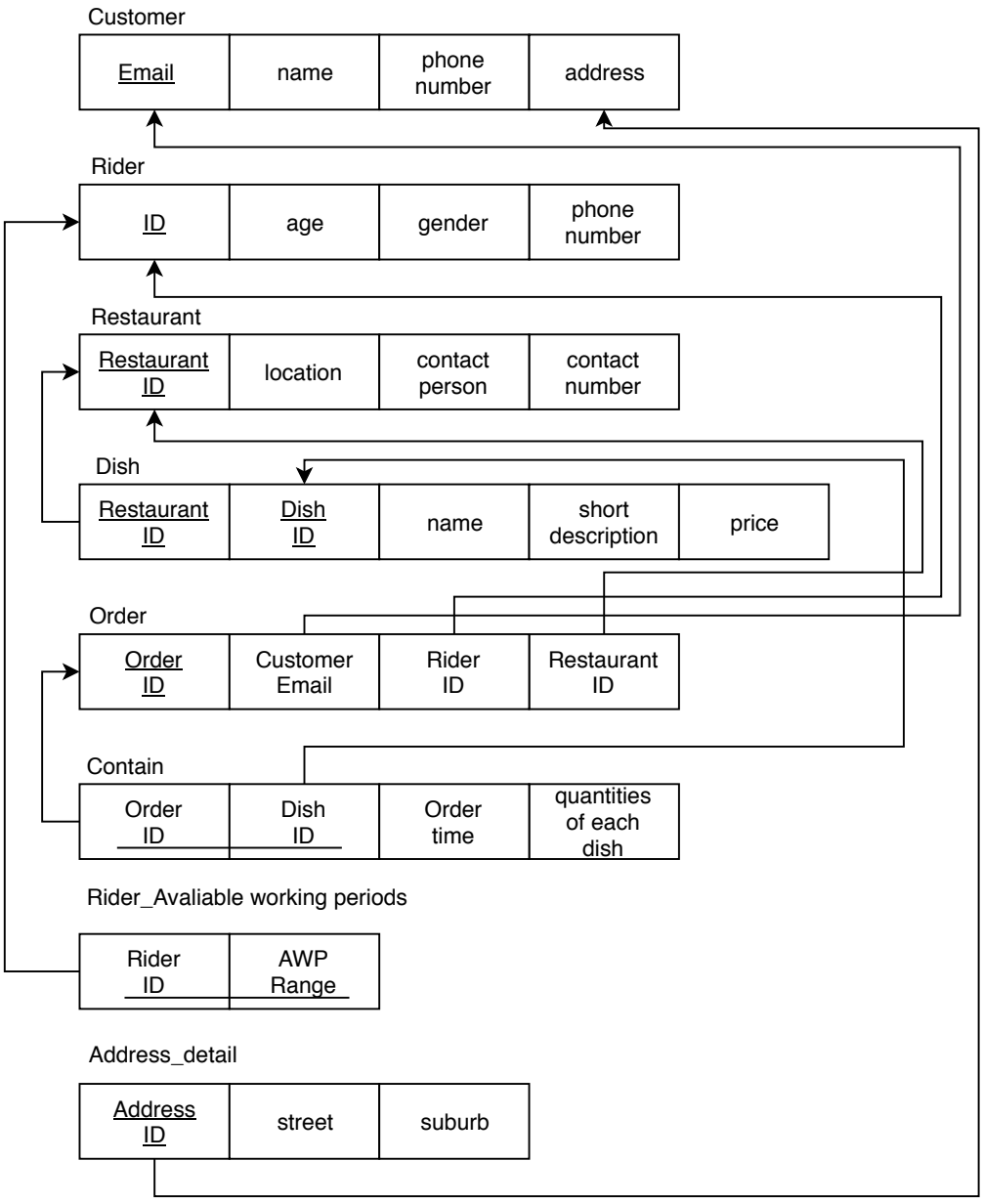


Assignment1 Question1



Assignment 2 Question2

Assignment1 Question3

(1):

$$\pi_{\{title\}}(Song \bowtie ((\sigma_{(genre = \text{'pop'})}(GenreOfSong)) \bowtie (\sigma_{(name = \text{'Talor Swift'})}(Artist) \bowtie SongCreating)))$$

(2):

$$A \leftarrow \pi_{\{title\}}(Song \bowtie (\sigma_{(name = \text{'Talor Swift'})}(Artist) \bowtie SongCreating))$$

$$B \leftarrow \pi_{\{title\}}(Song \bowtie (\sigma_{(name = \text{'Ed Shereen'})}(Artist) \bowtie SongCreating))$$

$$C \leftarrow (A \cup B) - (A \cap B)$$

(3):

$$A \leftarrow \pi_{\{name\}}(\sigma_{(gender=\text{'Female'})}(Artist) \bowtie (\sigma_{genre=\text{'pop'})}(GenreOfSong) \bowtie SongCreating \bowtie (\sigma_{(Name=\text{'Universal'})}(Company) \bowtie JoinIn))$$

$$B \leftarrow \pi_{name}(\sigma_{(gender='Female')}(Artist) \bowtie (\sigma_{genre=\text{'hip-pop'})}(GenreOfSong) \bowtie SongCreating \bowtie (\sigma_{Name=\text{'Universal Music Group'})}(Company) \bowtie JoinIn))$$

$$C \leftarrow A - B$$

(4):

$$A \leftarrow \pi_{\{sID)\}}((\pi_{\{aID\}}(SongCreating \bowtie GenreOfSong) \div (\pi_{(genre)}(GenreOfSong))) \bowtie SongCreating \bowtie Artist)$$

$$B \leftarrow \pi_{\{sID\}}(\sigma_{(name = \text{'Taylor Swift'})}(Artist \bowtie SongCreating))$$

$$C \leftarrow A \cap B$$

$$D \leftarrow \pi_{\{name\}}(C \bowtie SongCreating \bowtie Artist)$$

$$E \leftarrow \pi_{\{name\}}(\sigma_{(name = \text{'Taylor Swift'})}(Artist))$$

$$F \leftarrow D - E$$