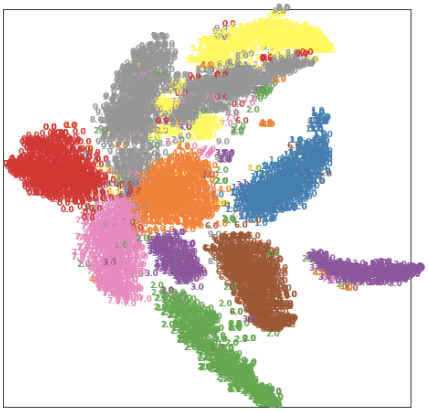
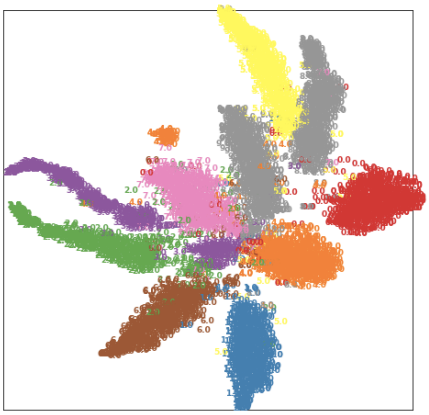
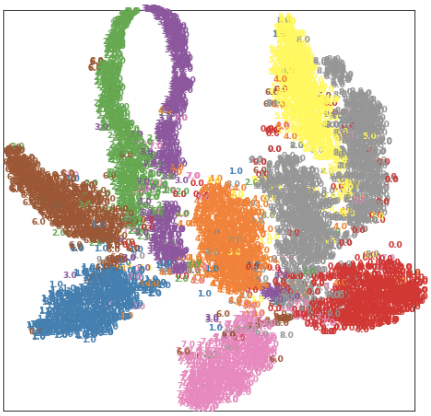
Question1(+2 pts): Visualize distribution of features across different classes.

1. Please make t-SNE plot the distribution of early, middle, final stage.
   A. Evaluate the model on training dataset, collect features and labels
   B. Make 3 t-SNE plots of the following training phase:
   i. early stage ii. middle stage iii. final stage

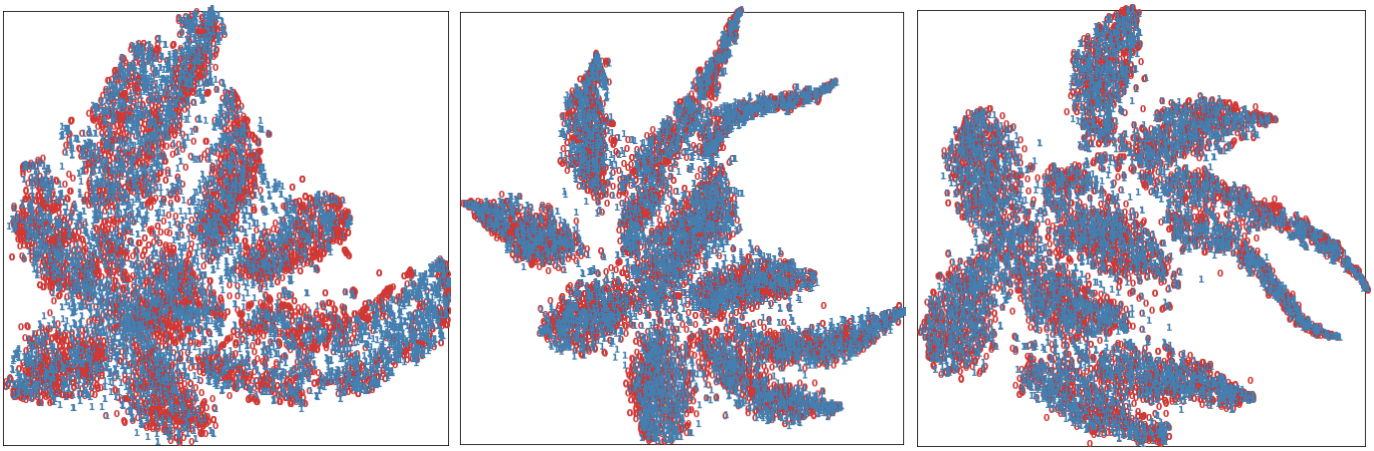
2. Explain and analyze the distribution of feactures of three stages.
   (Hint: Is is a good feature extractor for classification task? Why or Why not?)
   是的，對於這個 classification task，這是一個好的 feature extractor。
   因為可以從 t-SNE plot 中看到，early middle final stage 的圖中各個顏色的分群愈來愈明顯，距離也愈來愈區分開來。

3. Example plot & Hints
   - SKlearn provide t-SNE function: link
   - Normalize the output before plotting
   - cmap is convenient to map colors

Quesion2 (+2pts): Visualize distribution of features accross different domains.

1. Please plot the distribution of early, middle, final stage.
   A. Evaluate the model on source dataset and target dataset, collect feature and labels.
   B. Make 3 plots of the following training phase:

   i. early stage ii. middle stage iii. Final stage



2. Explain and analyze the distribution of features of three training phases.
   (Hint: Is it a good feature extractor for domain adaption task? Why or Why not?)
   是的，對於這個 domain adaption task，這是個好的 feature extractor。
   因為從這三個 t-SNE plot，我們可以觀察到藍色與紅色的 domain 區分得越來越明顯，early stage 中明顯可以看出藍紅兩色的混雜程度較 final stage 更為嚴重。

3. Example plot & Hints
   - The label is related to the domain e.g. '1' for source and '0' for target
   - Target dataset is too large. Just randomly pick 5000 images to evaluate.