**Changelog:**

1. **Script Organization:**
   * **main.py:**
     + **Purpose**: The main script to execute tasks like training, visualization, and evaluation.
     + **Methods Included**: train\_and\_save\_model, show\_visuals, and eval\_model\_results were organized into this script to manage the core workflow.
     + **Global Variables**: All global variables were relocated to the if \_\_name\_\_ == '\_\_main\_\_': block for proper initialization.
   * **data\_loader.py:**
     + **Purpose**: Handles data loading and processing, including custom datasets for training and testing.
     + **Methods Relocated**: create\_data\_loader, CustomDataset, and support functions were moved here to separate data handling from other processes.
   * **vesicle\_net.py:**
     + **Purpose**: Contains the neural network model, along with functions related to model creation, training, and checkpoint management.
     + **Methods Relocated**: VesicleNet (formerly Net), create\_model, train\_model, and load\_checkpoint were placed in this script to focus on model-related tasks.
   * **visualization\_script.py:**
     + **Purpose**: Manages the visualization of predictions, including generating images and HTML summaries.
     + **Methods Relocated**: html\_visualize (formerly test\_model), generate\_html, visualize\_image\_with\_prediction, and other related functions were organized into this script.
   * **Removed/Unedited Scripts:**
     + **Removed**: getting\_started\_script.py and html\_visuals.py were removed, and their methods reorganized as mentioned above.
     + **Unedited:** create\_visuals.py and testing.py were not modified or included in the reorganization because they were never directly called in the main.py workflow.
2. **CustomDataset Changes:**
   * **Indexing Adjustment**: The label file, originally 1-based indexing, is now converted to 0-based indexing within the CustomDataset class in data\_loader.py to ensure compatibility with downstream tasks.
   * **Initialization and Return Order:** The initialization of the CustomDataset class was first changed due to the situation with default parameters—labels are only available for training data and default to None for testing data. Parameters with default values must come after those without defaults. Consequently, the return order was adjusted to match the initialization parameter order, resulting in image, mask, label.
   * **Test Data Compatibility**: The CustomDataset class was updated to allow labels to be None, making the class compatible with test data that may not have labels.
3. **Visualization Bug Fixes:**
   * **Prediction Label in Filenames**: Updated the visualization code to include the predicted label in the filenames of saved images.
   * **Categorization Issue in HTML Generation**: In the generate\_html function, the order of checks was corrected to ensure 'DVH' images are correctly categorized before 'DV' images.
   * **Label Mapping Correction**: The get\_label\_text() function was corrected to map 0 to CV and 1 to DV, fixing a previous reversal.
   * **Indexing Problem**: Fixed an issue where images were being saved with incorrect indices due to the faulty use of len(inputs) \* index, which would break if the total data size is not a whole number multiple of the batch size.