Image Edit: Manual Segmentation

The Image Edit module provides a number of manual segmentation tools. This exercise will demonstrate how to segment grayscale data using the auto trace tool. For a full overview of all the segmentation tools in the module, please review the Image Edit tutorial available from the Help menu in the Analyze window.

1. Load the **MRI_3D_Head.avw** data set from the **$:\BIR\images\TutorialData** directory.

2. Open the **Image Edit** module (**Segment > Image Edit**).

3. Use the **Slice Slider** to move to **Slice 122**.

4. In the main Image Edit window, select the **Auto Trace** tool. Position the cursor near the center of the brain and click to set a seed point. The Image Edit window will automatically update to display Auto Trace parameters (figure 1).

5. Use the double-ended slider bar at the bottom of the window to adjust the threshold range until a reasonable trace of the brain is obtained. A threshold **minimum** of **34** and **maximum** of **129** works well for this data set.

6. Select the **Delayed Flood Fill** tool and place a fill point outside the auto-traced region (click on the background).

7. Select the **Auto Trace** tool again and click **Apply & Advance**.

8. A dialog box will be returned stating that the action modifies the loaded volume, click **Change a Copy of the Loaded Volume**. The area outside the trace will be highlighted in red, and then the next slice will appear in the image display (the slice number can be seen in the lower left corner of the image display).

9. Review the edited slice by opening the **Edit Review Tool** (**Tools > Edit Review**) (figure 2).

note   An edited version of the data set will be automatically saved to the Analyze workspace.
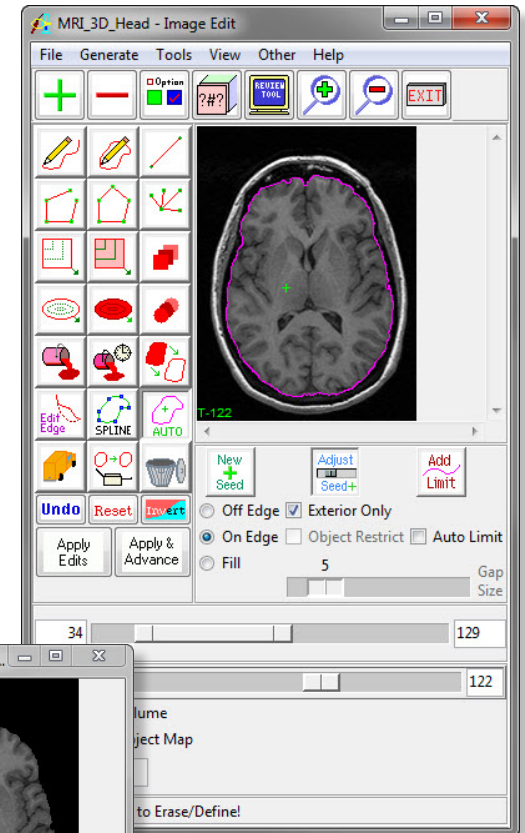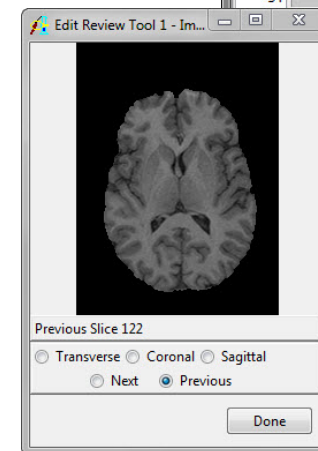

Figure 1

Figure 2

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10. In the main Image Edit window, you will notice that when the module advanced to slice 123 (step 8) the seed point and auto trace parameters set in step 5 were copied forward. The trace should have automatically adjusted to the brain on this slice. If not, the seed point may have been copied forward to an area outside the brain or to a voxel with a different grayscale value. Use the **Move** button and adjust the seed point.

11. If the trace needs no further adjustment and the Delayed Flood Fill point is still positioned outside the trace, click **Apply & Advance** and edit 19 more slices, finishing on **slice 142**.

12. In the Edit Review tool, change the orientation to **Coronal** and then **Sagittal**, note the slice edits in these orientations (figure 3).

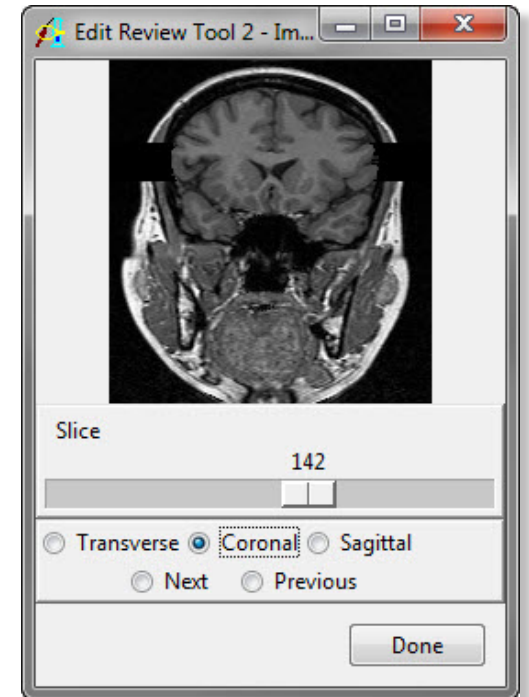13. Close all windows related to Image Edit before moving to the next exercise.

Figure 3

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