 **Environment Setup**: Install necessary libraries and dependencies.

 **Data Loading and Preprocessing**: Load T1 and T2 MRI images, normalize them, and prepare for input into the model.

 **Model Architecture Definition**: Build the U-Net-based GAN model, with generator and discriminator components.

 **Model Training**: Train the GAN model with checkpoints and TensorBoard monitoring.

 **Evaluation**: Use metrics like SSIM to assess the quality of generated images.

 **Output and Storage**: Save generated images, models, and checkpoints.