

# Script for NIFTI data header modification after using dcm2nii

*#This script is specifically designed for Enhanced Dicom to NIFTI convert using dcm2nii for data from XNAT. Author: Maya Reiter*

*#Please refer to [this page](#) about what this script is for.*

```
#!/bin/bash
```

```
scan=$1
```

```
zdim=$2
```

```
#files used:
```

```
oldHd=/tmp/header$$
```

```
newHd=/tmp/NewHeader$$
```

```
#get the old header:
```

```
fsIhd -x ${scan} | grep -v "qform" | grep -v "qto" > $oldHd
```

```
cat $oldHd
```

```
#get the mistaken number from the old number:
```

```
mNum=`cat $oldHd | grep "dz" | cut -c8- | sed "s//g"
```

```
#get the other mistaken lines:
```

```
msLine=`cat $oldHd | grep "sto_xyz_matrix = " | cut -c20- | sed
```

```
"s//g" #| sed 's/ 0 0 0 1//g"
```

```
msLine2=`cat $oldHd | grep "sto_ijk matrix = " | cut -c20- | sed
```

```
"s//g" #| sed 's/ 0 0 0 1//g"
```

```
read -a mArray <<<${msLine}
```

```
read -a mArray2 <<<${msLine2}
```

```
#change the mistakes:
```

```
count=0
```

```
for i in ${mArray[@]}
```

```
do
```

```
if [ $count -eq 2 ] || [ $count -eq 6 ] || [ $count -eq 10 ]
```

```
then
```

```
aNum=`echo ${i}`
```

```
mArray[$count]=`bc -l <<< $aNum/$mNum*$zdim` #bash sucks at deviding
```

```
fi
```

```
count=`expr ${count} + 1`
```

```
done
```

```
count=0
```

```
for i in ${mArray2[@]}
```

```
do
```

```
if [ $count -eq 2 ] || [ $count -eq 6 ] || [ $count -eq 10 ]
```

```
then
```

```
aNum=`echo ${i}`
```

```
mArray2[$count]=`bc -l <<< $aNum/$mNum*$zdim` #bash sucks at deviding
```

```
fi
```

```
count=`expr ${count} + 1`
```

```
done
```

```
#mistake lines:
```

```
stoLine=`cat $oldHd | grep "sto_xyz_matrix"
```

```
stoLine2=`cat $oldHd | grep "sto_ijk matrix"
```

```
qtoLine=`cat $oldHd | grep "sto_xyz_matrix"
```

```
qtoLine2=`cat $oldHd | grep "sto_ijk matrix"`
```

```
#correct lines (to be corrected):
```

```
sMatrixVals="sto_xyz_matrix = ""echo ${mArray[@]}`""  
sMatrixVals2="sto_ijk_matrix = ""echo ${mArray2[@]}`""  
qMatrixVals="qto_xyz_matrix = ""echo ${mArray[@]}`""  
qMatrixVals2="qto_ijk_matrix = ""echo ${mArray2[@]}`""
```

```
#rewrite bad header (replace dz and slope values):
```

```
dzLine=`cat $oldHd | grep "dz"  
ndzLine=" dz = "${zdim}""  
slpLine=`cat $oldHd | grep "scl_slope"  
nslpLine=" scl_slope = '1"  
cat $oldHd | sed "s/$dzLine/$ndzLine/g" > $newHd  
cat $newHd | sed "s/$slpLine/$nslpLine/g" > ${newHd}$$  
#works till here.
```

```
cat ${newHd}$$ | sed "s/${stoLine}/${sMatrixVals/g" > ${newHd}  
cat ${newHd} | sed "s/${stoLine2}/${sMatrixVals2/g" > ${newHd}$$  
cat ${newHd}$$ | sed "s/${qtoLine}/${qMatrixVals/g" > ${newHd}  
cat ${newHd} | sed "s/${qtoLine}/${qMatrixVals2/g" > ${newHd}$$
```

```
#put the new header on the image:
```

```
fslcreatehd ${newHd}$$ ${scan}
```

```
#show what we put on the image
```

```
fslhd -x $scan
```

```
#clean up the mess we made in the process: rm $oldHd
```

```
rm ${newHd}*
```