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### 9.1

```
load('FinalAssignment_fmRI_data.mat');
[X] = generateDesignMatrix(fix, stat, natt, att, hrf, 360);
% Plotting design matrix
design(X,1:360,"fmRI")
```

### 9.2

```
view_scan(ana);
```

### B

```
func = Y(:, :, :, 10);
view_scan(func);
```

### C

```
view_scan(ana, func);
```

### D

```
func = Y(:, :, :, 1:10);
size(func)
view_scan(func);
```

### 9.3

### A

```
[betas, Yhat, residuals] = computeBetaYhatResiduals(X, Y);
```

---

## B

```
c1 = applyContrast(betas(:,:,:,2), betas(:,:,:,1), residuals);  
view_scan(c1);
```

## 9.4

```
[C1] = applyContrast(betas(:,:,:,2), betas(:,:,:,1), residuals);  
[C2] = applyContrast(betas(:,:,:,3), betas(:,:,:,2), residuals);  
[C3] = applyContrast(betas(:,:,:,4), betas(:,:,:,3), residuals);  
  
%Get the top 10 most active voxels for this contrast.  
[offsets1] = findActivityCoord(C1,[-26, -37, -17], 10);  
[offsets2] = findActivityCoord(C2,[-26, -37, -17], 10);  
[offsets3] = findActivityCoord(C3,[-26, -37, -17], 10);  
  
%View the data to verify activity location.  
view_scan(ana, C1);  
view_scan(ana, C2);  
view_scan(ana, C3);
```

## 9.5 Testing

```
[C, CTags, CAct] = analysefMRIData("FinalAssignment_fMRI_data.mat");
```

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