Quran Moshaf Walkthrough

Contents

1. Displaying Quran Pages

There're two versions of images for the two popular Rewaya; Hafs & Warsh.

Located at:

- For Hafs: http://quran.gplanet.tech/hafs/images/page_number.png
- For Warsh: http://quran.gplanet.tech/warsh/images/page_number.png

Where *page_number* ranges between 1 & 604.

Note: Halaqat App doesn't support switching between Hafs & Warsh (unimplemented feature).

✳ Quran images should be lazy loaded. At the Moshaf initialization load 6 images, then declare a reload threshold of 3 images. When the remaining pages count go below the declared threshold, load another 3 images (The init load amount, reload threshold & reload amount values can be specified as needed).

2. Quran DB Description

Aya	
id	INT
sura	INT
aya	INT
text	TEXT
pure_text	TEXT
page	INT
amount	REAL
guz	INT
x	INT
y	INT
tafseer	TEXT
xw	INT
yw	INT

Figure 1 Aya Table

The important columns to talk about in the Aya table are: x, y, xw & yw.

x	The X-coordinate of the end of the aya on the image.
y	The Y-coordinate of the end of the aya on the image.
xw	Same as x, but for the Warsh images
yw	Same as y, but for the Warsh images

As a side note here, the coordinates of the beginning of the Aya aren't specified as they can be inferred by being the end of the previous aya or by being the beginning of the page (i.e. top-right corner of the image).

Figure 2 The coordinates of Aya number 2 as specified in Aya table for Hafs (Note the exact place of the small red dot).

Also, an additional note is that the Quran DB doesn't accurately match the images used either for Hafs or Warsh. That is why we need offsets & margins in our calculations to make it fit first (you will see them in mus7af.js in Halaqat but they are not assumed in this document).

3. Page Scaling

The specified Aya coordinates in the DB file are for the original image dimensions. When you change the size & dimensions of the images, it's important to track the scale factor used.

The page scaling should handle portrait & landscape orientations.

```
if (screenWidth != imageWidth) {
	scaleFactor = screenWidth / originalImageWidth;
	imageWidth = screenWidth;
	imageHeight *= scaleFactor;
}

if (deviceOrientation == 'portrait' && imageHeight > screenHeight) {
	scaleFactor = screenHeight / originalImageHeight;
	imageHeight = screenHeight;
	imageWidth *= scaleFactor;
}
```

✳ Refer to mus7af.js `calculatePlacesRatio` function in Halaqat code.

4. Selecting Aya

Simplified algorithm:

```
var pageAyat = getAyaAtPage(page_number);
for (aya in pageAyat) {
	if (e.y within ayaHeight && e.x within ayawidth) {
		currentAya = aya;
		prevAya = prevAya;
	}
}
```

✳ Refer to `ayaClicked` function in mus7af.js in Halaqat.

5. Shadowing (highlighting) Aya

Simplified algorithm:

```
x = currentAya.x * scaleFactor;
y = currentAya.y * scaleFactor;
prevX = isFirstAyaInPage? end : prevAya.x * someFactor;
prevY = isFirstAyaInPage? top : prevAya.y * someFactor;



/* note end & top above are fixed coordinates. They are the coordinates of the
Ayat bounding box.

----start----------------top------------------end------
|                                                     |
|                                                     |
|                                                     |
|                                                     |
|                                                     |
------------------------bottom-----------------------

*/
```

```
while(y > prevY) {
	drawShadowOnLine();
	y -= ayaHeight;
}
```

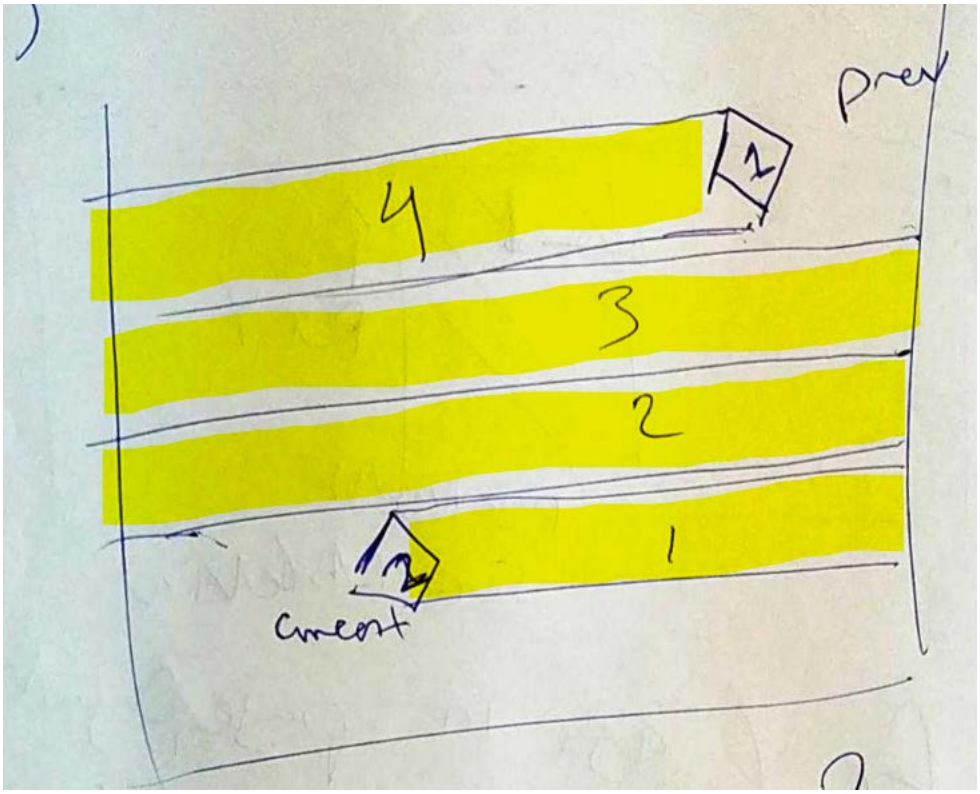

Figure 3 Shadowing of Aya number 2

✳ Refer to `shadowCurrentAya` in mus7af.js in Halaqat.