**Instructions:**

To Get Started:

1. File -> New Database
2. Put all images in a set within new database folder in “images”
3. File -> Import Images
   1. Files
   2. Folders
4. Under “Image Table”
   1. Selecting an image displays it
   2. “#Chips” tells whether chips have been made (very useful)

Making a “Chip” (Bounded Subject of Image)

1. Under “Image Table”
2. Select an image
3. Actions -> Add Chip
4. Select two points on image to define diagonal of bounding box
5. Chip is created automatically
   1. Chips are viewable under “Chip Table”
   2. Clicking on a chip will display it
   3. Clicking on gray around chip will show some stuff (toggle)
   4. Clicking on the image will show some other stuff (local information, also toggle)

**Notes:**

* Seems quite inaccurate when dealing with animals from different sides
  + Related to orientation
  + Question for Rana:
    - **Q:** Is there any correlation in spots/rosettes from one side to the other?
      * **A:** Orientation is indeed critical because there is no correlation between spot patterns on right & left sides of the cats
* Questions for investigation:
  + Does color impact classification?
    - Test with grayscaled version of same images
      * Same results imply no
  + How are the classified animals organized?
    - Can we associate two images of animals (of different limbs/sides/etc. to gain better accuracy)?
    - Are high-score image pairs associated in any data structure?
* It seems that each hotspot (elliptical region centered on a point of interest in common between two images) is free to scale independently in order to determine best match. This allows the animal to move from frame-to-frame such that the hotspots can be contorted differently, yet still yield a high score
  + Can we weight an image’s score higher if many hotspots scale similarly?
  + Should we ignore a hotspot if it scales too much while most others aren’t?
    - Will this increase time-complexity significantly?
* It also seems that hotspots can change their orientation relative to each other while still yielding a high score
  + Metrics:
    - Rotation
    - Skew
    - Translation (x,y)
    - Size (z)
  + Relate angle and orientation
  + This allows the animal to contort itself (isomorphism)
  + Should we implement some sort of threshold?
    - Size changes should be much more consistent photo-to-photo
    - Seems like a risky path - isomorphism is an important feature for animals which move so much in images.
* Seems to export to .csv files for “name”, “image”, and “chip”.
  + We want to also export information to Excel file
  + The organization of information leaves much to be desired
* Can we generalize to associate different mask section shapes?
  + Faces -> round
  + Bodies -> fat rectangle / ellipse
  + Limbs -> thin rectangles / polygons
  + Tails -> thin snake-shapes
  + If we associate these shapes, it makes sense to weight our classification score according to the number of matching hot spots and the number of high-score body parts.
* Feature idea: show individual hot spots in entire ROI if desired
* Are “chips” directional?
  + Yes. Orientation must match up between ROIs to be compared
* We NEED to isolate subject from background