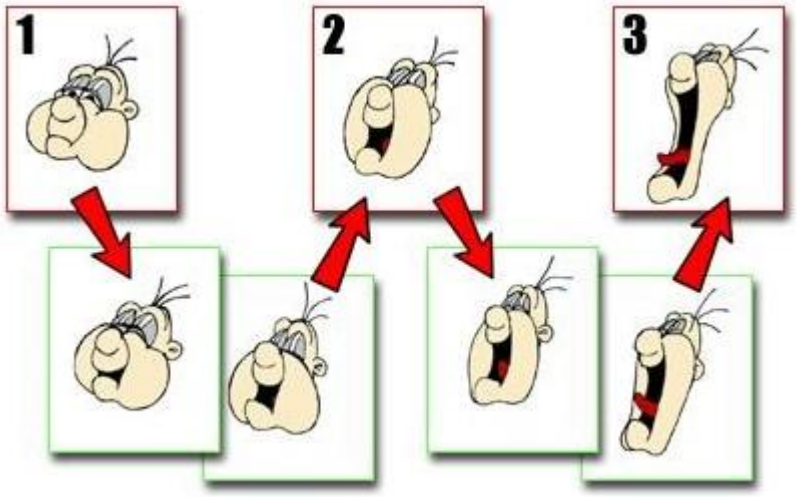
Project #3
Due: Dec. 5, 2019

Objective

Interpolation techniques are very useful in computer animation by generating intermediate image frames automatically allowing artists to avoid tedious work of generating frames with minor changes needed to create effects of continuous motion. As illustrated by the following sequence of images I found from the site: http://www.eenadupratibha.net/pratibha/Engineering/cse_sem_com_ani_un8.html



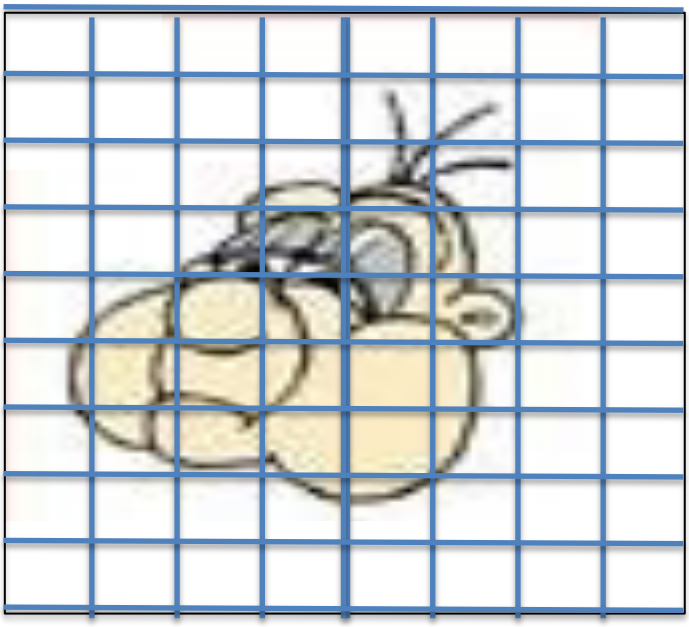
the algorithms help to generate frames one the lower row. However, a successful algorithm must make the changes seem "natural". In this project, we bypass some of the crucial steps of computer animation, which automatically associate the features in one frame with features in another. Instead, we focus on the creation of the intermediate images using interpolation techniques. That is, we will manually make the association of features. For example, we can associate the end points of the 3 hairs on the character's head with the end points on other frames.

The objective of this project is to evaluate the different properties of the interpolation techniques. These techniques include:

- Polynomial interpolation;
- Different spline interpolations.

Steps of the implementation

1. Select a sequence of images you would like to animate. For each of the original frame, identify a list of control points and record their coordinates. For example, you can overlay a grid on each frame and estimate the coordinates of the control points you have selected. You can collaborate with other students to generate these control points.



2. Create tools to generate the images based on a list of control points and their connectivity.
3. Implement general interpolation algorithms to create coordinates of interpolated control points.
4. Evaluate the resulting animations.

Have fun!