

ESc101N Laboratory Assignment
Monday of week of 23/8/04

PACMAN

PROBLEM: Write a program with 2 classes ? Pacman and Director.
The aim is to draw 4 pacman images at positions which would be taken as input from the user. The 4 pacmen should be so drawn that they are looking (targetting) at each other in cyclic fashion. Lets call them A,B,C,D. Then A should be looking at B, B at C, C at D, and D at A.

Pacman Class

It would be used to draw the image of pacman (Refer to figure).
The class would have 4 member variables :

- xPosition, yPosition : The co-ordinates of the center of the pacman-circle ()
- Direction (alpha): The direction in which the pacman is looking. It is the ray along the bisector of the mouth angle of the pacman. This ray must pass through the center of the target pacman. The direction should be specified as the angle formed by the ray with the positive x-axis.
- Mouth-Angle (theta) : Angle formed by the mouth (jaws). The angle should be such that if the jaw lines are extended, then they should be tangent to the target pacman.

The Pacman class would have 5 methods

setX, setY, setAlpha, setTheta ? To set the parameters of the pacman.

Draw ? To draw the pacman using a Graphics object. The Graphics object should be taken as function argument.

Note: See the program Clown.java in the class webpage under "sample programs" to learn how to draw shapes using a Graphics object.

Director Class

This class would have only one method: main. The function of main would be:

- (1) Create a graphics object.
- (2) Take the positions of the 4 pacmen as input from the user.
- (3) Compute the orientation of each pacman.
- (4) Instantiate 4 objects of class Pacman. Draw the 4 pacmen on screen.

Have a look at example image given below.

