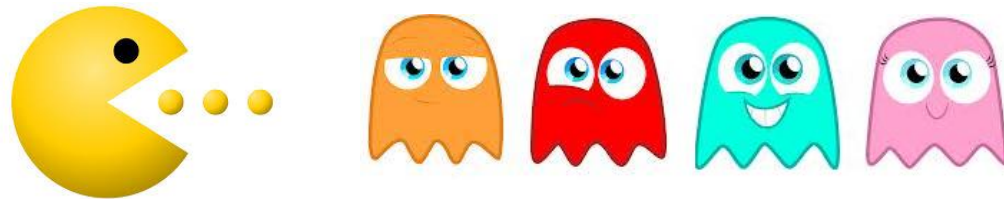


Module II



Programming with Pacman

Game Programming and Robotics - Fall' 2013

IBA, Karachi



A* Pseudocode

```
OPEN = priority queue containing START
CLOSED = empty set
while lowest rank in OPEN is not the GOAL:
    current = remove lowest rank item from OPEN
    add current to CLOSED
    for neighbors of current:
        cost = g(current) + movementcost(current, neighbor)
        if neighbor in OPEN and cost less than g(neighbor):
            remove neighbor from OPEN, because new path is better
        if neighbor in CLOSED and cost less than g(neighbor): **
            remove neighbor from CLOSED
        if neighbor not in OPEN and neighbor not in CLOSED:
            set g(neighbor) to cost
            add neighbor to OPEN
            set priority queue rank to g(neighbor) + h(neighbor)
            set neighbor's parent to current

reconstruct reverse path from goal to start
by following parent pointers
```



Visual Debugging using GameView

- GameView class provides methods for visual debugging to ensure the controller's behaviour is as expected.
 - `GameView.addPoints(game,Color.CYAN,game.getShortestPath(game.getPacmanCurrentNodeIndex(),nearestActivePowerPillIndex));`