Supplement Material for CSE313 HW Assignment 1

Example: Tic-Tac-Toe Game

```
class tic_tac_toe:
    def __init__(self):
        self.B = [[0,0,0],
                  [0,0,0],
                  [0,0,0]]
        self.player = 1

    def get_open_spots(self):
        return [[r,c] for r in range(3) for c in range(3)
                if self.B[r][c]==0]

    def is_valid_move(self,r,c):
        if 0<=r<=2 and 0<=c<=2 and self.board[r][c]==0:
            return True
        return False

    def make_move(self,r,c):
        if self.is_valid_move(r,c):
            self.B[r][c] = self.player
            self.player = (self.player+2)%2 + 1

    def check_for_winner(self):
```

```
        for c in range(3):
            if self.B[0][c]==self.B[1][c]==self.B[2][c]!=0:
                return self.B[0][c]
        for r in range(3):
            if self.B[r][0]==self.B[r][1]==self.B[r][2]!=0:
                return self.B[r][0]
        if self.B[0][0]==self.B[1][1]==self.B[2][2]!=0:
            return self.B[0][0]
        if self.B[2][0]==self.B[1][1]==self.B[0][2]!=0:
            return self.B[2][0]
        if self.get_open_spots()==[]:
            return 0
        return -1
```

```
def print_board():
    chars = ['-', 'X', 'O']
    for r in range(3):
        for c in range(3):
            print(chars[game.B[r][c]], end=' ')
        print()

game = tic_tac_toe()
while game.check_for_winner()==-1:
    print_board()
    r,c = eval(input('Enter spot, player ' + str(game.player) + ': '))
    game.make_move(r,c)

print_B()
x = game.check_for_winner()
if x==0:
    print("It's a draw.")
else:
    print('Player', x, 'wins!')
```