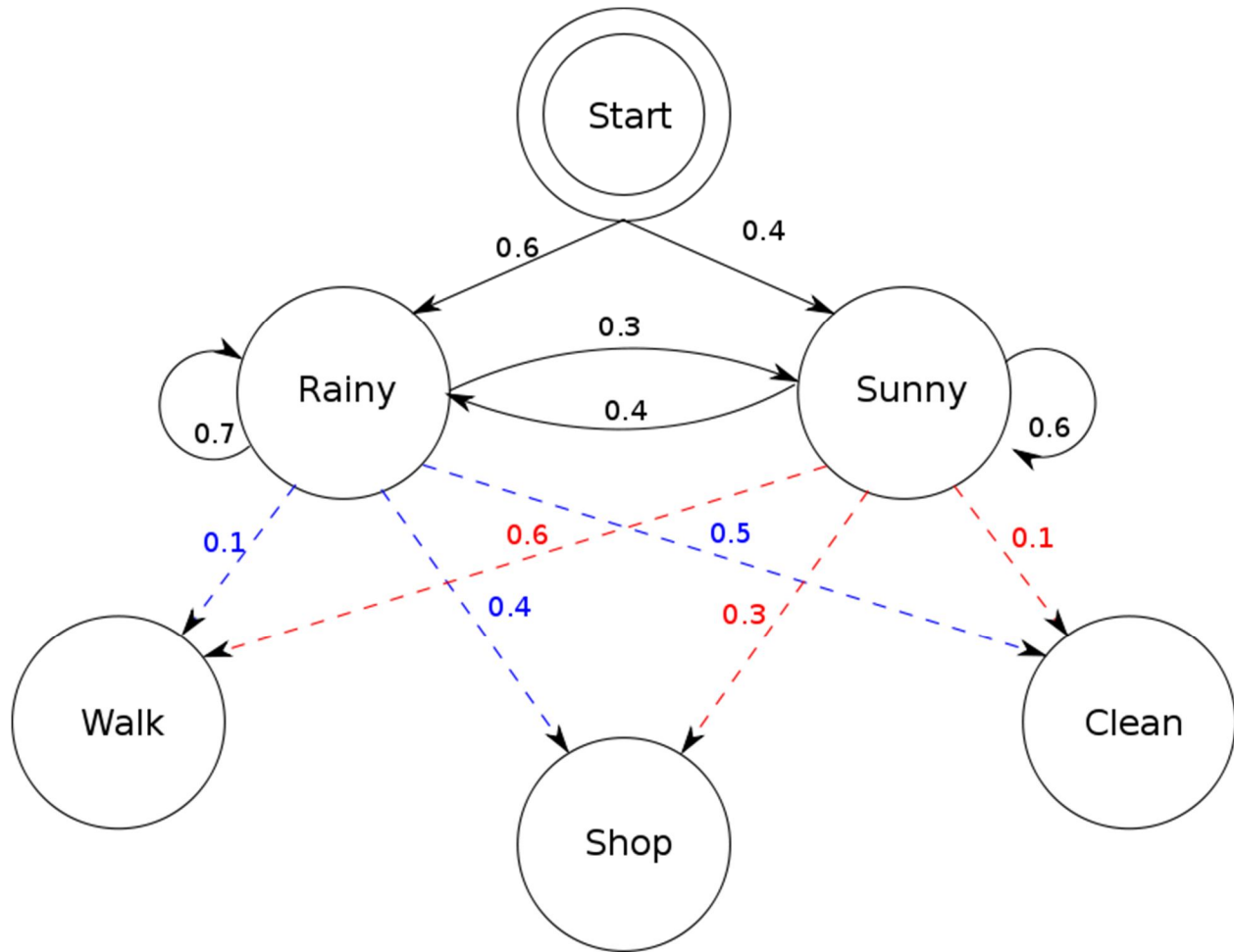


Class Test 03 Set B  
CSE 401 – Mathematics for Computer Science  
Department of Computer Science and Engineering  
University of Asia Pacific  
Total Marks: 20      Time: 30 Minutes

Q1. Consider the following Hidden Markov Model Diagram—



Now, again consider the following map—

Day 1 Hidden State: Rainy if your last digit of your ID is EVEN. Sunny if your last digit of your ID is ODD.

Day 1 Observable state: Walk if your last digit of your id MOD 3 is 0, Shop if your last digit of your id MOD 3 is 1, Clean if your last digit of your id MOD 3 is 2.

Day 2 Hidden State: Rainy if your second last digit of your ID is ODD. Sunny if your last digit of your ID is EVEN.

Day 2 Observable state: Walk if your second last digit of your id MOD 3 is 0, Shop if your last digit of your id MOD 3 is 1, Clean if your last digit of your id MOD 3 is 2.

Day 3 Hidden State: Rainy if your third last digit of your ID is EVEN. Sunny if your last digit of your ID is ODD.

Day 3 Observable state: Walk if your third last digit of your id MOD 3 is 0, Shop if your last digit of your id MOD 3 is 1, Clean if your last digit of your id MOD 3 is 2.

Determine the probability of occurring Day1 > Day 2 > Day 3 as the above states.