

Name: Wagar Ahmed

Roll no: 20p - 2750

Assignment #02

Q1 (a)

	1	3	2	4	1	3	5	1	3	2	4	5	4	2
Frame 1	1	1	1	1	4	4	4	5	5	5	5	5	5	5
Frame 2	3	3	3	3	3	1	1	1	1	1	2	2	2	2
Frame 3	2	2	2	2	2	3	3	3	3	3	3	4	4	4
	Hit	Hit	Hit	X	X	X	X	Hit	Hit	X	X	Hit	Hit	Hit

b) Hit Ratio:

$$\text{Hit Ratio} = \frac{8}{14} \times 100$$

$$\text{Hit Ratio} = 57\%$$

So Miss Ratio = 43%

Frequency table

1	2	3	4	5
1	1	1	0	0
2	2	2	1	1
0	0	0	0	2
1	1	1	1	
2	2	2	2	
0			0	



Q2

(a) Yes, the concurrent execution of both process result in an infinite wait there is deadlock occurrence.

(b) Using turn Variable to avoid deadlock  
initially turn = 0

```
Process P1()
{
    while(true)
    {
        while(turn != 0);
        wait(S);
        wait(W);
        CS
        Signal(S);
        Signal(W);
        turn = 1;
    }
}
```

```
Process P2()
{
    while(true)
    {
        while(turn != 1);
        wait(W);
        wait(S);
        CS
        Signal(W);
        Signal(S);
        turn = 0;
    }
}
```