OSWAP RISK MODEL

Step 1: Identify the risk:

From the given table of lab1, it is mentioned the threat agent factors and vulnerability.

Scenario 1 Likelihood.	Scenario 1 Impact	Scenario 2 Likelihood.	Scenario 2 Impact.
Skill: 9 motive: 9 Opportunity: 4 Size : 3 Discovery : 9 Awarness 6	confidentiality: 9 Integrity : 2 Availability: 3 financial damage : 6	Skill : 7 Motive: 9 opportunity: 7 Size: 6 Discovery: 9 Awareness: 06	Confidentiality: 6 Integrity : 3 Availability: 1 Damage : 3

Step 2: Estimating the likelihood.

From above table, the estimation for scenario-1 is

Threat agent = Skill + motive + opportunity + Size

= 9 + 9 + 4 + 3 = 25

= $\frac{25}{4}$ = 6.25

Threat agent = 6.25

Vulnerability factor = Discovery + Awarness

= $\frac{9+6}{2}$ = $\frac{15}{2}$ = 7.5.

vulnerability factor = 7.5.

Now, average of Vulnerability & Threat agent.

$\frac{6.25 + 7.5}{2}$ = 6.875

Overall Likelihood = 6.875

From the Table of Impact & likelihood Table.

It is high

Step 3: Calculating the Impact for Scenario 1

From the above table, let us consider the impact.

Impact = Technical + Business + cost

Since, we are using current MS office XP there is no need to add cost.

Impact ⇒ Technical Impact = (Confidentiality + Integrity + Availability)/3.

From Table

$$= \frac{9 + 2 + 3}{3} = \frac{14}{3} = 4.67.$$

Business Impact = 6. , cost = 0

∴ overall Impact is $\frac{4.67 + 6 + 0}{3} = 3.56$

Overall Impact is 3.56.

From the Impact ← likehood table is Medium

From the overall Risk Severity Table, we can see that the risk is **HIGH** ✓

Step 4: Calculating all the vulnerabilitees for current MS office XP.

From the table provided in the lab1.

W.K.T $\frac{6 + 6 + 5 + 7 + 5 + 9 + 3 + 5 + 3 + 6.}{10} =$

$= \frac{55}{10} = 5.5$.

Total risk is (likehood x Exploit x Impact) /10

$= \frac{6.875 \times 5.5 \times 3.56}{10} = 13.46$

For MS office XP the risk is 13.46 which is critical as per the Risk table.

Similarly calculating Vulnerabilities for rest of the software upgrades

[6] OFFICE 2003.

From the table., Recalculating Impact as the upgrade cost is increased.

$$\text{Impact} = \frac{4.67 + 6 + 1}{3} = 3.89 \text{ medium}$$

Overall Impact is 3.89, which is also HIGH.

Calculating all Vulnerabilities for current MS office XP.

From the table.

W.K.t. $\frac{6+6+7+5+9+3+5+3}{8} = \frac{44}{8} = 5.5$ medium.

$$\text{Total risk} = \frac{(\text{likelihood} * \text{Exploit} * \text{Impact})}{10}$$

$$= \frac{6.875 * 5.5 * 3.89}{10} = 14.6 \text{ which is also medium}$$

MS office 2003 the risk is also ~~Very critical~~ medium.

[C] MS office 2010:

Recalculating the Impact as the upgrade cost is 6

∴ overall Impact is $\frac{4.67+6+6}{3} = 5.5$ is medium.

From the overall risk table, we see that risk is High

Calculating all Vulnerabilities for MS office 2010.

$$\frac{9+9+3+3+5}{5} = 5.8.$$

The risk factor is $\frac{(5.5 * 5.8 * 6.87)}{10} = 21.91$

∴ This is also ~~critical~~ Medium

[d] MS office 2007.

Recalculating the impact as cost increases.

overall impact is $\frac{4.67+6+5}{3} = 5.2$ is medium.

From the overall risk table, risk is high.

Calculating Vulnerabilities for MS office 2007.

$$\frac{6+9+5+9+3+5+3}{7} = 5.4$$

The risk factor = $\frac{5.71 \times 5.2 \times 6.87}{10}$

$$= \frac{5.4 \times 5.2 \times 6.875}{3} = 19.2$$

medium.

which is also ~~critical~~

(b) Now, calculating for Adobe.

(i) Without upgrade.

calculating the Vulnerabilities as.

$$\frac{6+7+5+5+6+6+6+6+6+9+9+3+5}{13}$$

$$= \frac{79}{13} = 6.07$$

Total risk = $\frac{6.87 * 6.07 * 3.56}{10} = 14.84$

(ii) Adobe Reader 9.3 :

5 is cost

therefore recalculating impact.

$\frac{4.67+6+5}{3} = 5.2$. medium

Overall is 5.2.

Vulnerabilities Calculation

$\frac{7+5+5+6+6+6+6+6+9+9+3+5}{12} = 6.08$

Total risk = $\frac{6.08 * 5.2 * 6.87}{10} = 21.72$

(iii) Abode 9.4

* Calculating Impact.

$$= \frac{4.67 + 6 + 5}{3} = \frac{15.67}{3} = 5.2$$

Overall Impact 5.2.

Calculating Vulnerabilities

$$\frac{5+5+3}{3} = 4.3.$$

$$\text{Total risk} = \frac{4.3 \times 5.2 \times 6.87}{10} = 15.3.$$

(iv) Adobe 10.

Calculating Impact.

$$\frac{4.67 + 6 + 8}{3} = \frac{18.67}{3} = 6.2.$$

overall impact is 6.2.

Calculating Vulnerabilities

$$\frac{5+3}{2} = \frac{8}{2} = 4$$

$$\text{Total risk} = \frac{6.2 * 6.87 \times 4}{10} = 17.03$$

(v) Abode 11.

Calculating the impact as cost = 9.

$$\frac{4.67 + 6 + 9}{3} = 6.5$$

Vulnerabilities 5 $= \frac{6.87 * 5 * 6.5}{10} = 22.03$

At the end of scenario 1, the overall risk is high

Similarly for Scenario 2.

① Estimating the likelihood.

~~Threat agent = 9+7+7+6+9+6~~

$$\text{Threat agent} = \frac{7+9+7+6}{4} = 7.25.$$

$$\text{Vulnerability is} = \frac{9+6}{2} = 7.5.$$

$$\text{Total average} = \frac{7.25+7.5}{2} = \frac{14.75}{2} = 11.125$$

which is also high.

Calculating Impact

$$\frac{6+3+1}{3} = 3.33.$$

Business damage = 3., cost = 0

$$\therefore \frac{3.33+3+0}{3} = 2.11 \rightarrow \text{~~show~~}$$

Calculating Vulnerabilities.

From scenario 1 it is 5.5.

$$\therefore \frac{5.5 * 2.11 * 11.125}{10} = 12.90.$$

Similarly for all the calculations.

Total matrix is.

Scenario #	likelihood.	Impact	overall Risk
Scenario 1	high	medium-high	high
Scenario 2	high	medium	high.

From overall Analysis,

For Scenario I - I would upgrade to adobe 11. as there is a high risk due to Vulnerability.

For Scenario II - I would upgrade to Microsoft office 2010 which provides better security and removes unknown Vulnerabilities.