Financial Engineering
Assignment-3
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Q1) Given sample space

$$\Omega = \{(u,u), (u,d), (d,u), (d,d)\}$$

By definitions σ-field we can define

$$F = \{\phi, \Omega, \{(u,u)\}, \{(d,d), (d,u), (u,d)\}\}$$

Further

$$F_2 = \{\phi, \Omega, (u,u), (u,d) (d,u), (d,d), \{(u,d), (u,u)\},$$
$$\{(u,u), (d,u)\}, \{(u,u), (d,d)\}, \{(u,d), (d,u)\},$$
$$\{(u,d), (d,d)\}, \{(d,u), (d,d)\}, \{(u,u), (u,d), (d,u)\},$$
$$\{(u,u), (u,d), (d,u)\}, \{(u,u), (d,d)\}, \{(u,d), (d,u),$$
$$(d,d)\}\}$$

is the largest σ-field

both F_1 & F_2 satisfy all 3 property of a σ field