

FIT2094 Databases

Bug Smashers Incorporated (BugS)

Unit Test Case Study - S2 2017

Case Study

Pete the pilot runs a thriving helicopter company, **Bug Smashers Incorporated**. At present, Pete owns 9 helicopters. Each helicopter is identified by their call sign; much like a registration number identifies a car. The total time each helicopter is flown is recorded to keep track of maintenance schedules. The type of helicopters Pete owns are two Bell 47G2, five JetRangers, a LongRanger and an AS350. The standard cost of hire is \$350/hr, \$750/hr, \$950/hr and \$950/hr respectively. This standard cost of hire may be varied for a particular charter due to a number of factors (eg. a client who frequently uses Bug Smashers may receive a discount). Each of the helicopter type has a fixed number of passenger seats available. The company's charter work is categorised as: scenic flights, transport, filming, geological survey, fire mapping, fuel reduction burning, logging coupe regeneration burning, aerial seeding, training, and search and rescue.

The company has 10 employees consisting of 6 pilots, 3 engineers and a secretary. Details are kept of each employee's name, address, contact number, Tax File Number, salary and next of kin. As only qualified pilots are allowed to take charters, records are kept of the pilots' endorsements. An endorsement is the credential a pilot has to fly a certain type of helicopter. Therefore, when a pilot is endorsed to fly a certain helicopter type (eg. JetRanger) a record is kept of the pilot's endorsement for this type of helicopter and the total hours the pilot has flown the helicopter type. This indicates the pilot's level of experience in this type of aircraft. For a pilot to have a current endorsement for a helicopter type they must be reviewed annually and the date of their last review is kept for each of their endorsements.

Charters can vary in time – from several days to part of an hour. A charter is flown by one pilot using one helicopter. As clients only pay for the time spent flying, a record is kept of every time the helicopter takes off and lands during a charter flight (a leg). When a client initially makes a booking, the destination, the estimated time of departure (ETD) and estimated time of arrival (ETA) are recorded for each leg of the charter. For example, a client may book a helicopter to fly them to Rivendell for a 10:00 am meeting, then leave at 12:00 to fly to Mount Doom for 3 hours skiing and then back to Gondor Airport by 6:00 pm.

As clients only pay for the minutes flown during a charter, the actual time of departure (ATD) and actual time of arrival (ATA) are recorded on the day. The engine time for each leg is the difference in minutes between the ATA and ATD. The client will be charged for the total engine time at the agreed cost of hire (this maybe the standard cost, or an agreed special rate).