Paper Code: ETCS-453

List of Experiments

1. To determine the nature of roots of a quadratic equations, its input is triple of +ve integers (say x,y,z) and values may be from interval[1,100] the program output may have one of the following:- [Not a Quadratic equations, Real roots, Imaginary roots, Equal roots]. Perform BVA and Robust Case Testing

2. To determine the type of triangle. Its input is triple of +ve integers (say x,y,z) and the values may be from interval[1,100].The program output may be one of the following [Scalene, Isosceles, Equilateral, Not a Triangle]. Perform BVA, Equivalence Class Testing (Using Input Domain and Output domain). Which Technique is best for the given problem statement. Give reasons.

3.

   \Consider the example of an app that classified Risk Exposure (RE) as High, Moderate, or Low on the basis of Risk Probability (RP) and Risk Impact (RI). Consider the following specification for such an app:

   1) the app accepts two integers , RP and RI, as input,
   2) both RP and RI must be in the range [1, 5],
   3) if either input is not an integer, it is invalid and the app outputs "*Invalid*",
   4) if either input is an integer outside the range specified in (2), it is invalid and the app outputs "*Out of Range*",
   5) given valid inputs, the app calculates RE as the product of RP and RI, and outputs:
      a. "*High*", if RE is greater than 9
      b. "*Low*" if RE is less than or equal to 2
      c. "*Moderate*" if neither (a) nor (b) are satisfied

   i) Partition the domain of each parameter into equivalence classes, label the classes and list them.
   ii) Develop a set of test cases for the app to satisfy *Each Choice Coverage* of the equivalence classes. Indicate the equivalence classes covered by each test case and, as always, include the expected result. Notice the actual classification process is not adequately tested by your set of test cases.
   iii) To better test the classification performed by the app, partition the output domain and develop additional test cases to cover any class not covered by your test cases in (ii).

4.

   Develop a complete limited entry decision table for the following decision situation:

   An airline offers only flights in Germany and Europe. Under special conditions a discount is offered – a discount with respect to the normal airfare.

   ## Rules:

   • Passengers older than 18 with destinations in Germany are offered a discount at 20%, if the departure is not on a Monday or Friday. If the passengers stay at least 6 days at the destination, an additional discount of 10% is offered.

   • For destinations outside of Germany passengers are offered a discount of 25%, if the departure is not on a Monday or Friday.

   • Passengers older than 2 but younger than 18 years are offered a discount of 40% for all destinations.

   • Children under 2 travel for free. **For each rule, design the test case**