**Design Test Cases (Train Example)**

**Scenario:**

**If you take the train before 9:30 AM or in the afternoon after 4:00 PM until 7:30 PM (‘rush hour’) you must pay full fare. A saver ticket is available for trains between 9:30 AM and 4:00 PM, and after 9:30 PM.**

**What are the partitions and boundary values to test the train times for this ticket types?**

**Which are valid partitions and which are invalid partitions?**

**What are the boundary values? (A table may be useful)**

**Derive test cases for the partitions and boundaries?**

**Do you have any questions about this ‘requirement’?**

**Is anything unclear?**

**Approach**

**“If you take the train before 9:30 am, or in the afternoon after 4:00 pm until 7:30 pm, you must pay full fare".**

**.“A saver ticket is available for trains between 9:30 am and 4:00 pm, and after 7:30 pm"**

**the boundary values are:**

**9:29 am, 9:30 am**

**4:00 pm, 4:01 pm**

**7:30 pm, 7:31 pm**

**What we have so far:**

**Saver: Between 9:30 am and 4:00 pm**

**Full: After 4:00 pm and until 7:30 pm**

**Ambiguities / Considerations**

**When does the morning “rush hour” start?**

**At midnight?**

**At 11:30 the previous day?**

**At the time of the first train of the day?**

**The specification is unclear!**

**Other considerations**

**If a train is scheduled to leave at exactly 4:00 pm:**

**Is a saver ticket still valid?**

**If a train is scheduled to leave before 4:00 pm, but delayed until after 4:00 pm:**

**Is a saver ticket still valid?**

**We can make assumptions, but we prefer the “correct” specification! However, let us work with the information we have.**

**Test cases for partitions and boundaries**

|  |  |  |
| --- | --- | --- |
| **Expected outcome** | **Input** | **Test Case ID** |
| **full fare** | **08:35 Am** | **1** |
| **full fare** | **09:29 Am** | **2** |
| **saver ticket** | **09:30 Am** | **3** |
| **saver ticket** | **12:30 Pm** | **4** |
| **saver ticket** | **04:00 Pm** | **5** |
| **full fare** | **04:01 Pm** | **6** |
| **full fare** | **06:22 Pm** | **7** |
| **full fare** | **07:30 Pm** | **8** |
| **saver ticket** | **07:31 Pm** | **9** |
| **saver ticket** | **10:20 Pm** | **10** |

**Test cases for partitions and boundaries**

**Note: All partitions are valid**

**There may be invalid partitions**

**At a time no trains are running?**

**Specification does not mention that!**

**Equivalence partition values Test cases: 1, 4, 7, and 10**

**Boundary values Test cases: 2, 3, 5, 6, 8, and 9**