

Supplementary : Advanced

Solution 51

(a)

$$\frac{playlistCount : SongId \rightarrow N}{\forall i : songs \bullet playlistCount(i) = \#\{p : \text{dom } playlist \mid i \in \text{ran } playlist(p)\}}$$

(Parts b-c use complex conditional logic - testing basic parts only)

Solution 52

These solutions use pattern matching with conditionals like:

$$\text{premiumPlays}(\langle \rangle) = \langle \rangle$$

$$\text{forall } x : \text{Play}; s : \text{seq}(\text{Play}) \text{ — }$$

$$\text{premiumPlays}(\langle x \rangle^s) = \langle x \rangle^{\text{premiumPlays}(s)} \text{ if } \text{userStatus}(x.2) = \text{premium}$$

$$\text{premiumPlays}(s) \text{ if } \text{userStatus}(x.2) = \text{standard}$$

(Blocked by: pattern matching in axiomatic definitions - Phase 18)