

SOEN331: Introduction to Formal Methods for Software Engineering

Assignment 4 on algebraic specifications

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Spec: Location;

Sort: Location;

Imports:String, Point

Description: A location contains a description

Operations:

newLocation: $\text{String} \times \text{Point} \rightarrow \text{Location}$;

setDescription: $\text{description} \rightarrow \text{Location}$;

getDescription : $\text{Location} \rightarrow \text{Description}$;

setPoint : $\text{Point} \rightarrow \text{Location}$;

getPoint : $\text{Location} \rightarrow \text{Point}$;

Variables:

description: String; point: Point;

Axioms:

[A1] $\text{getDescription}(\text{newLocation}(\text{newdesc}, \text{newp})) = \text{newdesc}$;

[A2] $\text{getPoint}(\text{newLocation}(\text{newdesc}, \text{newp})) = \text{newp}$;

[A3] $\text{setDescription}(\text{newDesc}, \text{newLocation}(\text{newdesc}, \text{newp})) = \text{STUCK HERE}$;

[A4] $\text{add}(\text{add}(s, x), y) = \text{add}(\text{add}(s, y), x)$;