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: String × Point → Location;

setDescription: String × Location → Location;

getDescription : Location → String;

setPoint : Point × Location → Location;

getPoint : Location → Point;

Variables:

newDesc, d: String; newPoint, p: Point;

Axioms:

[A1] getDescription(newLocation(d, p)) = d;

[A2] getDescription(setDescription(newDesc, newLocation(d, p))) = newDesc;

[A3] getDescription(setPoint(newPoint, newLocation(d,p))) = d;

[A4] getPoint(newLocation(newdesc, newp)) = newp;

[A5] getPoint(setPoint(newPoint, newLocation(desc,p))) = newPoint;

[A6] getPoint(setDescription(newDescription, newLocation(desc,p))) = p;

[A7] setDescription(newDesc, newLocation(d,p)) = newLocation(newDesc, p);

[A8] setDescription(getDescription(newLocation(d,p)), newLocation(d,p)) = newLocation(d,p);

[A9] setPoint(newPoint, newLocation(d,p)) = newLocation(d, newPoint);

[A10] setPoint(getPoint(newLocation(d,p)), newLocation(d,p)) = newLocation(d, p);