



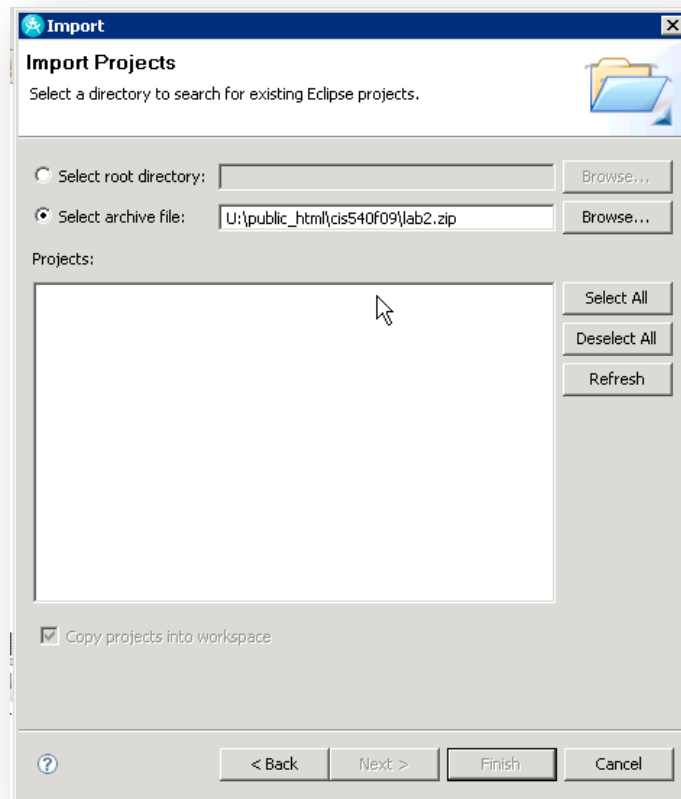
Rational Software Architect – Class Diagrams

Objectives:

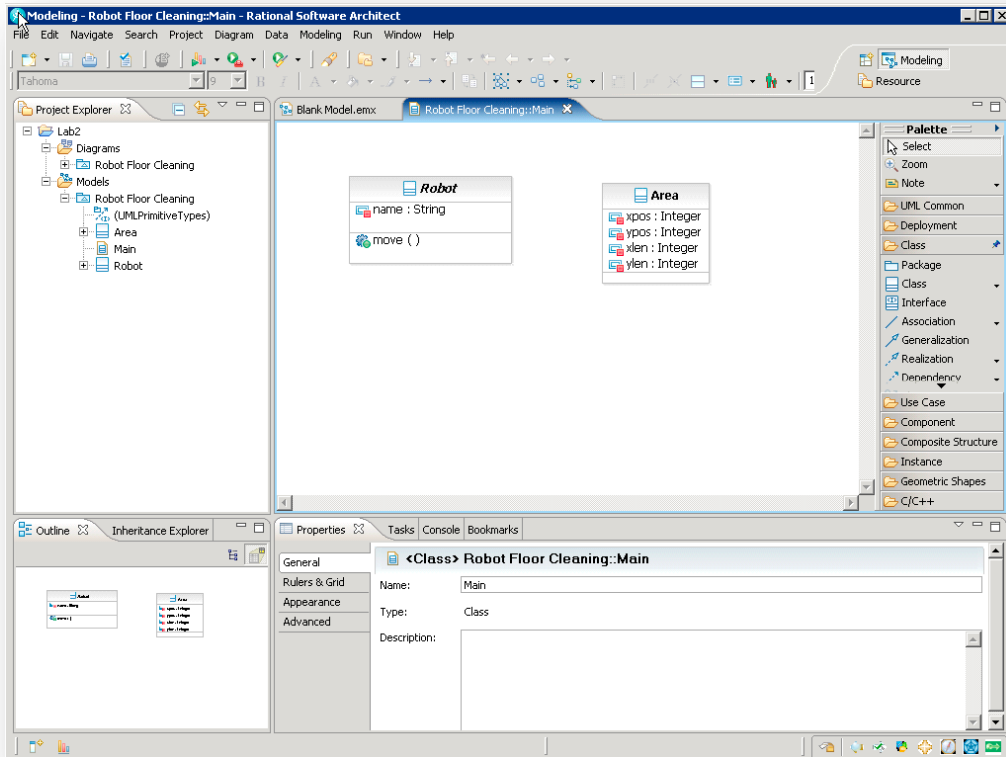
- Introduction to Rational Software Architect Software
- Diagram a simple Robotic Floor Cleaning Company class structure.

Started Project:

- Download: <http://people.cis.ksu.edu/~harmon/cis540f09/lab2.zip>
- Open *IBM Rational Software Architect*
- Select *File*→*Import: General, Existing Project into Workspace*. Press *Next*.



- Select *Window*→*Open Perspective: Modeling*
- Open *Models*→*Robot Floor Cleaning*



Robotic Floor Cleaning Company

The Robotic Floor Cleaning Company (RFCC) will consist of various robots in order to clean the floors of a building. The system will be able to clean both tiled and carpeted floor. Any large debris left on the floors must also be cleared by the system before vacuuming or sweeping.

Exercises:

There are three different exercises in this lesson. After you complete each one, raise your hand so that I can come over and check it.

Specialization:

Create classes for 4 types of robots: 1. Mover (removes debris), 2. Sweeper (sweeps tile floors), 3. Mopper (mops tile floors), and 4. Vacuumer (vacuums carpeted floors). You must also create operations that these robots will perform. These operations must take some sort of parameter(s). These classes should extend the abstract Robot class included in the started project.

Model Relationships:

- Every robot *possesses* exactly one Gripper.
- At various times, each robot may be *assigned* for duty on one or more floors.

Aggregation:

- We will be cleaning multiple buildings throughout the life of our system. Thus, we should have the concept of a building in our system. Add a Building class that is an aggregate of Floor objects.
- The robots will form teams to complete various tasks at hand. Add a Tile-Team and a Carpet-Team class that is composed of robots that should belong on each of those teams.