



Practical 3: Conceptual Modelling

Where are we now?

- We have produced:
 - A list of stakeholders
 - Some initial stakeholder requirements
 - One or more use cases for the requirements
 - Some derived requirements from the use cases



Goals to build use cases for:

- User wants to find information about daily traffic on particular routes.
- User wants to find the distance travelled on a particular route from one point to another.
- User wants to find out how far a specific landmark is from a specific location.
- User wants to find all landmarks of interest from a particular within a particular radius of their route of travel.



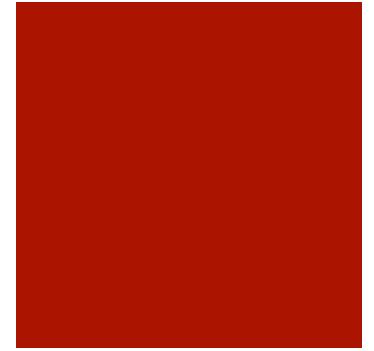
Cyclists requirements

- Cyclists must be able to:
 - Retrieve information about a pre-existing route
 - Retrieve a list of routes from a Route Database
 - Construct a route from pre-existing segments of paths
 - Retrieve information about the following items on segments:
 - Car traffic (daily average or current)
 - Surface conditions of the route (e.g. pavement vs. gravel)
 - Foot traffic (daily average or current)
 - Substantial changes in the slope of path (gradient)
 - Request a set of Landmarks surrounding a route within a certain radius
 - Record their presence at checkpoint locations along the route without interrupting their ride
 - Report damage on segments of a route while travelling or after travelling the route



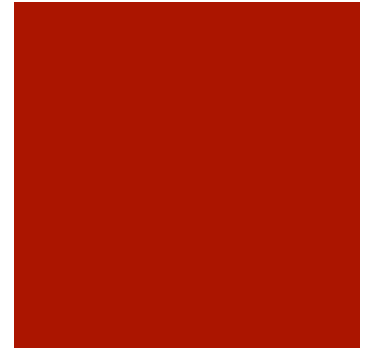
City Planner Requirements

- City officials must be able to:
 - Query the amount of traffic on a known segments route at any given time
 - Query trend information for a segment/route or
 - Retrieve reports of damage on paths within a route
 - Retrieve accident reports that have occurred as recorded by Police/Rescue workers
 - Indicate maintenance has been assigned to fix a route including dates of repair



Route Repository Requirements

- Store segments of routes
- Assemble routes automatically from route segments based on provided criteria from another agent
- Store landmarks and associated location information in reference to segments
- Store locations of checkpoints along route for recording route use



Practical Activity 1: Define Conceptual Objects

- Identify the conceptual objects, specifically:
 - Entities
 - Agents
 - Associations
 - Events

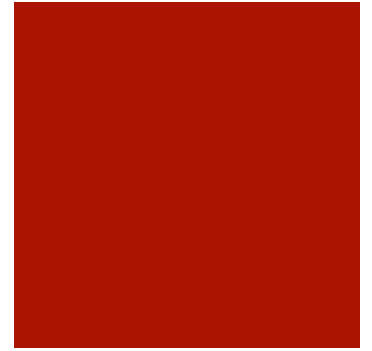


Practical Activity 2: Define attributes



- Take your conceptual objects and develop a key set of attributes that you need for each object
 - Be careful looking for traps where attributes are associations
- Check multiplicities on the associations to ensure that they are describing the correct relationships

Practical Activity 3: Refine conceptual model



- Look for examples where associations can be modified to be generalizations/specializations
- Look for examples where associations are aggregations/compositions