Introduction
Nowadays, there are various alternatives for route computation, using GPS navigation systems and Internet services. However, these systems do not consider the specific requirements of each user. For example, “a person at night want a route with the lowest crime rate possible and well lit”; frequently the user knows the origin of the route and very probably the destination, but ignores the intrinsic characteristics of the road (such as number of lanes and road conditions) and some external factors like crime rate and traffic.

Objective
The purpose of this work is to design a methodology for ergonomic user routes, i.e. routes adapted to particular requirements of each user. This methodology is based on an application ontology that describes the characteristics and roads properties well as external factors that affect them. This descriptions were found in documentation from the Secretary of Transport and Roads in Mexico City.

Methodology

Stage 1. Personalization
Consists in identifying the kind of user and collect user requirements. (User Profile)

Stage 2. Thresholding
It’s focused in creating semantic ranking, which is to evaluate the user profile over the attributes of each road, taking into consideration the previously defined ontology.

Stage 3. Semantic routing
An optimal route algorithm that uses the weighting of the roads obtained in the previous stage is used.

Results
Through this method, it is possible to obtain a route for each user profile. For example, a safe route, a route with lighting, a route with little traffic. As shown in Figure 4, the method obtains a certain quantity of likely routes for the request destination, which are then analyzed according to the user profile input, disregarding immediately the non similar and weighting the rest by degree of similarity to the given profile.

Figure 1. Stage 1: User Profile.
Figure 2. Stage 2: Thresholding.
Figure 3. Stage 3: Semantic routing.
Figure 4. Results.
Figure 5. Methodology diagram.