Context Aware Mobile Computing Application

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biquity

Context

Context is the set of environmental states and settings in which an application event occurs and is interesting to the user.

Context is defined by a combination of relevant environmental properties, participants, and participant's activities.

Classification:
- Computing Context
- User Context
- Physical Context
- Time Context

Context-aware Computing

- Proximate Selection
- Automatic contextual Reconfiguration
- Contextual Information and commands
- Context-triggered actions

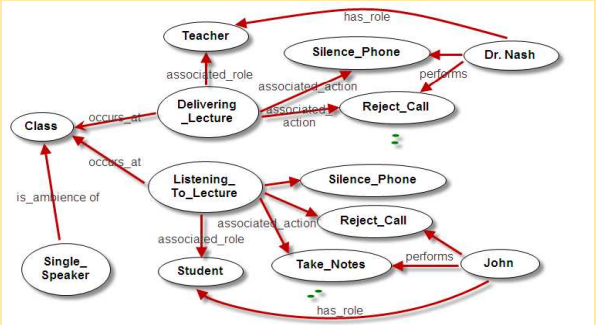
Improved User Experience
- Semantic Web of Place.
- Effective Position Infrastructure for mobiles.
- Intelligence in Network.

- N/W Architecture to collect, share, and store context information.
- S/W Architecture to construct context-sensitive applications.
- Techniques for inferring place in a user-specific manner that respects each user's context.

Research Tasks

- Capture user decisions, mobility patterns, user labels(Tag cloud for collaborative metadata).
- Determine position, heading, speed using network infrastructure and GPS (iPhone).
- Localization of device based on ambient sensors and suitable observations(noise, lighting).
- Use entity resolution techniques to recognize communities and context.
- Propagate context information (Place server).

Scenario for describing concepts and roles:



Applications

- Don't Bother..I am Busy..Ringer off..
- Most visited restaurant by friends..
- Adjust my Presence..
- Locate a nearby available Surgeon..
- Prioritizing the data streams..
- Best way to reach a person..

References

• Platys: From Position to Place in Next Generation networks project (UMBC)
• Inferring friendship network structure by using mobile phone data project (MIT)
• SPIRE project (UMBC)