Cs2310 Homework 4

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Part#1 Multimedia Database

We design 2 multimedia database relations

Gesture = {gesturePhoto, gestureID}

R = {gestureID, document},

and 2 functional dependency functions between attributes Gesture and Document:

mfd1: gesturePhoto$_{g1(t1)}$ $\rightarrow$ gestureID$_{g2(t2)}$

mfd2: gestureID$_{g2(t2)}$ $\rightarrow$ Document$_{g3(t3)}$,

where g1 is a classification function to classify user gestures, while g2 and g3 are similarity function for comparing gestureID and multimedia documents respectively.

Part#2 Patterns

Problem: Classify user gestures from sensors.

Context: The classified user gesture is used to identify the document that the user wants to search.

Solution: Use classification function g1 defined above to find the similar predefined gesture to the user input gesture within the difference of t1.

IC Card

IC Name: Gesture_Classifier
Description: Classify user gestures from sensors
Interaction Pattern:

By Myself with Interaction

My Task: Classify user gestures from sensors
Time Critical Condition:
Name of Other IC: Document_Matcher
Message to Other IC: matched gestureID
Other IC's Task: Search the document specified by the gesture in the database

Problem: Search the document specified by the gesture in the database.

Context: Allow health-care system users to search documents they want.

Solution: Use similarity function g2 and g3 defined above to find the similar document to the corresponding document of the gestureID found in the previous IC-Card within the difference of t3.

IC Card

IC Name: Document_Searcher
Description: Search the document specified by the gesture in the database
Interaction Pattern:

By Myself no Interacton

My Task: Search the document specified by the gesture in the database.
Time Critical Condition:
Name of Other IC:
Message to Other IC:
Other IC's Task: