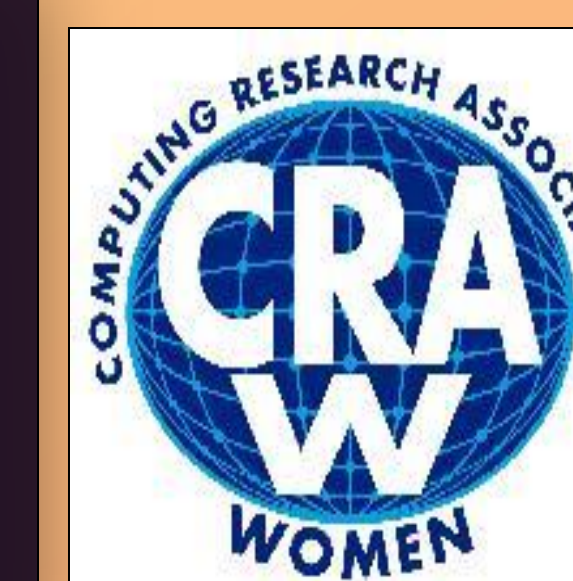# My Virtual Patient Speaks

Maureen Ngugi ~ mngugi@hotmail.com

University of North Carolina at Charlotte

ABSTRACT

• The Virtual Patient is a dialogue-based virtual human application created to aid in training student nurses to improve their clinical interview skills.

• To simulate the interview, the student nurse presents a series of questions to the virtual patient. The virtual patient responds with the appropriate answers.

• My focus was on implementing the database processes to retrieve the matching questions to answers via behind the scenes coding and queries.

MOTIVATION

• The project was introduced due to the dilemma the School of Nursing faced as their student nurses attempted to practice interviewing patients.

• Practicing written scenarios with fellow students and professors is a challenge due to varying schedules.

• Working with children involves a lot of paperwork which makes this a difficult option to use.

• Training independently 24/7 would greatly help the student nurses with their course of study.

• The School of Computing approached them with a solution and the virtual patient project came to be.

• My goal was to create a program that would cater for the student nurses need to train more efficiently.

Flow diagram of user's interaction with the Virtual Patient application

CLEMSON — School of Computing

RESULTS

What is your question?
Tell me more about this
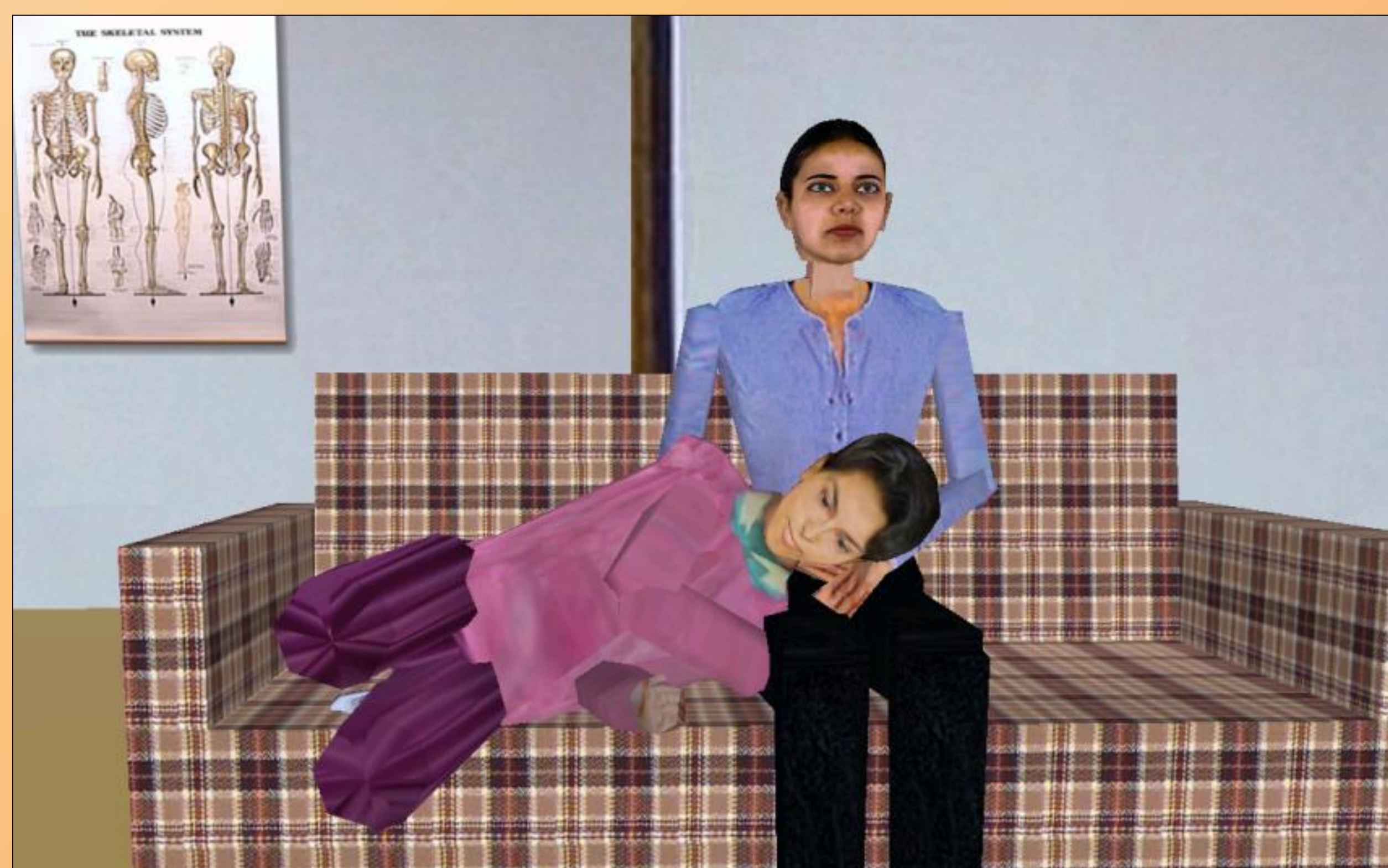

```
SELECT * FROM  responseid WHERE aID = 4;
    4, child, face, Neutral_exp, 1, 1
    1000
    4, mom, speak, She has been complaining of her ear hurting
    for the past two days., 1, 2
    2016
```

• Responsible for planning, designing and implementing the database processes programmatically using MySQL and C++

• Three programs written to achieve the series of algorithms

• First program listens for and retrieves the question asked by the student nurse from the database which has a question id number associated with it

• Second program breaks the question into a set of two matching words (called bigrams) and inserts the associated question id number and matching bigrams id number into another table

• Third program matches the question to answer based on the highest count of matching words using the question id number and bigrams id numbers. The answer is then spoken out by the virtual patient with coordinating animations displayed

Tell me more about this → Tell → Tell me → me more → more about → about this → this
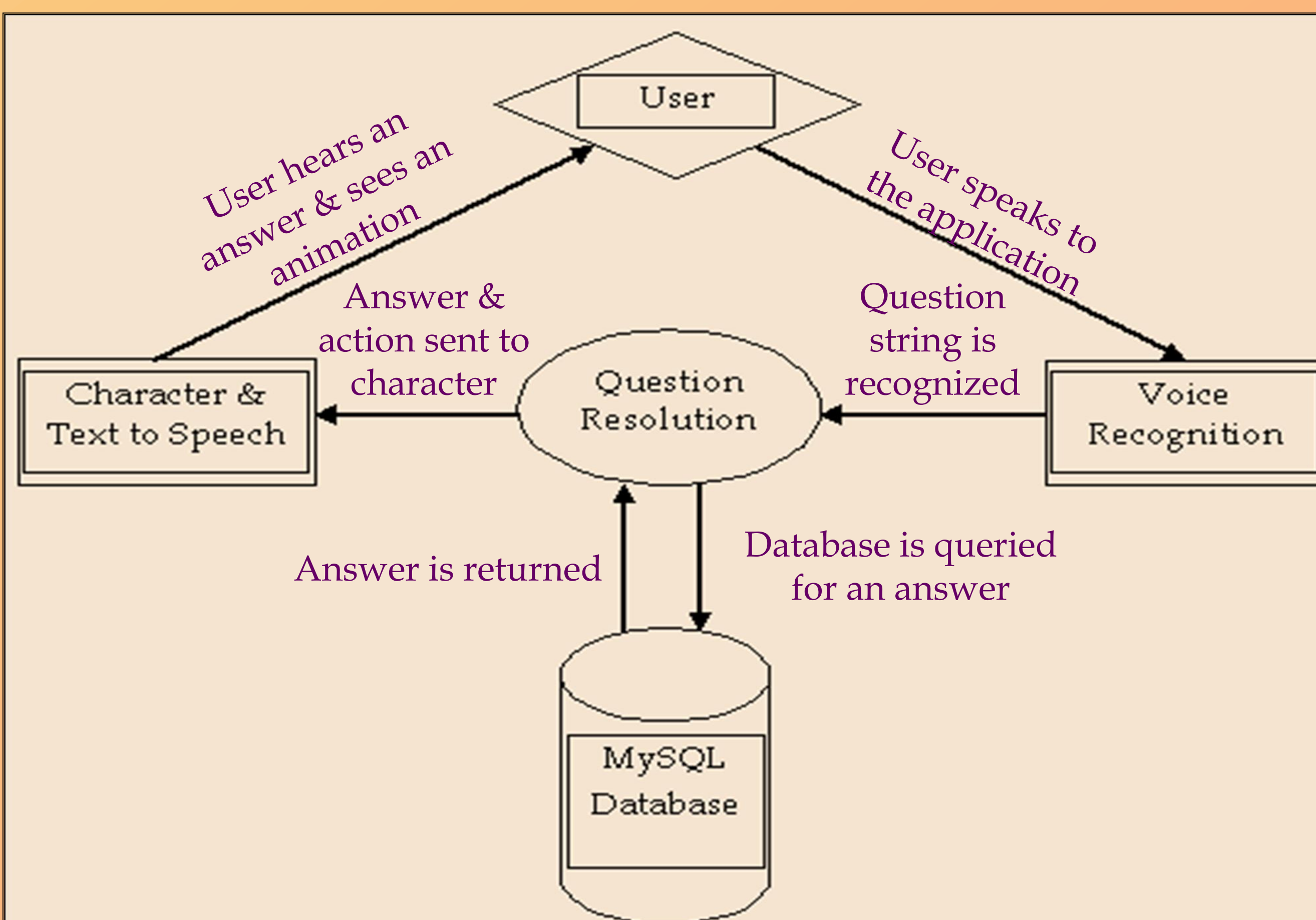
CONCLUSION

• This was the first proof of concept prototype created and tested for the School of Nursing.

• The application achieved the desired results, which was to create a virtual patient to aid in training student nurses to improve their diagnostic and interview skills.

FUTURE WORK

• Run a usability study in conjunction with the School of Nursing.

• Get study feedback to enhance the application.

• Conduct a specific study still in conjunction with the School of Nursing to determine the effectiveness of the application.

ACKNOWLEDGEMENTS