# ISYS30221 Artificial Intelligence 2021-22

## Artificial Intelligence - Coursework Documentation

## 1- About this submission

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| Student Name | Ryder Franklin |
| Student ID | N0853033 |
| Chatbot Topic | Supernatural (the tv show) |
| Tasks implemented in this submission (a,b,c,or d) | A and B |
| Files inventory (excluding this file) |  |
| Demo video URL |  |
| Checklist | I will submit this file separately (without compression) into DropBox  All other files are zipped and will be submitted into DropBox  The demo video is recorded as instructed, and the sharing link is inserted above  I have made sure that the demo video is shared according to the instructions, so that I allowed everybody in the university to view it.  All the sections below are populated accordingly. |

## 2- Design notes (shrink/grow as needed, add images where applicable)

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| General explanations of the system and its goals | The Supernatural Chatbot – nicknamed Dave – aims to provide facts and details about various characters, species, and events within the Supernatural universe. This is to centralise information about the tv show as it has 15 years’ worth of content to sift through. Much of this data was originally gathered by me and the chatbot itself also accesses the Supernatural Fandom Wiki webpage for additional data gathered by contributors and fact checkers across the world. |
| The system requirements, i.e., the list of what the system should do/have from a user’s perspective | What user can ask |
| The employed AI techniques, and the explanation of program codes and the supplied files. | My chatbot’s main features are that it uses AIML patterns, First Order Logic (FOL), TF-IDF and cosine similarity and it also accesses the Fandom webpage for data on my topic. It also speaks using Python’s inbuilt library – pyttsx3 – and can recognise a speech input from the user.  First, Dave introduces itself and lets the user decide whether they will input using the keyboard/typing or microphone/speaking. If they choose to use speech input/recognition, they will be prompted to use the correct microphone from the list of connected microphones to their computer.  The user is then prompted to give an input within a while loop.  Each input is first processed by Dave’s AIML patterns. If they match a pattern specified within the AIML file, the template specified is followed and, in some cases, the function that matches the pattern is called to handle it. For example, one of the AIML patterns calls the py\_jokes library and tells the user a programming joke. These patterns are also used to communicate basic responses such as greetings.  This pattern recognition is used to call many of Dave’s features including FOL and the fandom wiki API. First Order Logic is used by the program to identify both “Check that x is y” and “I know that x is y” statements, using a given knowledge base (kb) csv file.  The final pattern recognition feature is the fandom wiki API. Currently, Dave retrieves a 3-sentence summary from a given page upon the fandom wiki for Supernatural. This is done by using the fandom-py library and makes use of regex to format the summary in a suitable manner.  Finally, if a pattern cannot be matched to the user input, the TF-IDF of the user’s query is calculated and the cosine similarity between it and each line of the knowledge.csv file to find the best answer / match to the user’s question. |

## 3- Conversation log (insert text, screenshots and/or images as required)

## 10 conversation pairs for each task are enough)

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(no word count is necessary)