Quick Start Instructions

To start program:

- Double-click icon named “ForeWord” on the computer desktop.
- Start typing in report entry field. Predicted words will appear in yellow box.
- Special keys – TAB is most useful:
  
  **ESCAPE:** delete word
  
  **BACKTICK:** insert predicted words individually
  
  **TAB:** insert entire predicted phrase

- Use sample reports (below) as a guide, since this program assumes a user-specific language model. (This demo uses the author’s model, but others can be loaded.)

Brief description: This program produces chest and general radiography reports by continuously predicting the highest probability word(s) after each keystroke is typed. The program’s prediction algorithm is based on a trigram language model derived from 37,000 radiography reports and is similar to algorithms found in speech recognition systems.
**Log Display** – messages indicating the program’s logic.

**Clear Report** – erase current report and start over.

**Exit** – please leave running for next person and do not exit.

**Info & Help** – show user instructions and more technical details about the program.

**Report Entry Field** – start typing your report here. Use TAB key to insert the program’s predicted phrase. Use BACKTICK key to insert the predicted words individually.

**Internal Processing Log:**

1. **STEP 1**
   - Search with context: -end- MINIMAL A
   - Matching 3-word sequence: MINIMAL ARTERIOSCLEROSIS (P=0.1444)
   - Matching 2-word sequence: MINIMAL ARTERIOSCLEROSIS (P=0.1186)
   - Matching 1-word sequence: AND (P=0.0197)
   - Probabilities of above given the context for this step:
     - Prob. of ARTERIOSCLEROSIS = 0.144422
     - Prob. of AND = 5.53E-4
   - So, program selects: ARTERIOSCLEROSIS

2. **STEP 2**
   - Search with context: -end- MINIMAL ARTERIOSCLEROSIS
   - Matching 3-word sequence: MINIMAL ARTERIOSCLEROSIS THORACIC (P=0.6155)
   - Sequence is considered because expected no. keystrokes are 1.769 vs. 2.231 (with vs. without added word)
   - Matching 2-word sequence: ARTERIOSCLEROSIS THORACIC (P=0.579)
   - Sequence considered because expected no. keystrokes are 1.3409 vs. 2.1591 (with vs. without added word)
   - Probabilities of above given the context for this step:
     - Prob. of THORACIC = 0.615498
   - So, program selects: THORACIC

3. **STEP 3**
   - Search with context: MINIMAL ARTERIOSCLEROSIS THORACIC
   - Matching 3-word sequence: ARTERIOSCLEROSIS THORACIC AORTA (P=0.994)
   - Sequence is considered because expected no. keystrokes are 1.0279 vs. 2.9981 (with vs. without added word)
   - Matching 2-word sequence: THORACIC AORTA (P=0.5293)
   - Sequence not considered because expected no. keystrokes are 2.2935 vs. 2.0886 (with vs. without added word).
Sample Reports: This program can be loaded with any user’s language model. For demo purposes, the program assumes the author’s model. Therefore, in this demo, typical performance will only be experienced for reports that are similar to the author’s typical reports. Some samples are shown below for test purposes.

**Chest Radiograph – sample report**

SMALL RIGHT SUBCLAVIAN VENOUS CATHETER WITH TIP IN SUPERIOR VENA CAVA APPEARING SINCE LAST EXAM FROM 12/1/01. NO OTHER CHANGE. NO EVIDENCE OF PNEUMOTHORAX. INFILTRATE LEFT LOWER LOBE COMPATIBLE WITH PNEUMONIA UNCHANGED. MINIMAL ARTERIOSCLEROSIS THORACIC AORTA. NO OTHER ABNORMALITY.

**Abdominal Radiograph – sample report**

MODERATE DISTENSION SMALL BOWEL WITH MANY AIR-FLUID LEVELS. AIR AND FECES IN COLON. FINDINGS COMPATIBLE WITH ILEUS. MANY SURGICAL CLIPS IN PELVIS. NO EVIDENCE OF PNEUMOPERITONEUM.

**Orthopedic Radiograph – sample report**

ACUTE FRACTURE DISTAL FIBULA WITH 6 MM SUPEROLATERAL DISPLACEMENT OF DISTAL FRAGMENT. ACUTE FRACTURE MEDIAL MALLEOLUS WITH 4 MM INFERIOR DISPLACEMENT OF DISTAL FRAGMENT. MINIMAL WIDENING OF ANKLE MORTICE. NO OTHER ABNORMALITY. SUPERIMPOSED CAST OBSCURES DETAIL.

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**For more information:**

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