DSP Homework2-1 Report

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1. Execution and Environment

- Execution

```bash
bash 00_clean_all.sh
bash 01_run_HCopy.sh
bash 02_run_HCompV.sh
bash 03_training.sh
bash 04_testing.sh
```

- Environment: macOS

2. Run Baseline (40%)

```
=================== HTK Results Analysis =====================
  Date: Sat Apr 27 23:20:48 2019
  Ref : labels/answer.mlf
  Rec : result/result.mlf
------------------------ Overall Results ---------------------------
SENT: %Correct=38.54 [H=185, S=295, N=480]
WORD: %Corr=96.61, Acc=74.34 [H=1679, D=13, S=46, I=387, N=1738]
==============================================================
```

3. Improve Accuracy (40%)

```
=================== HTK Results Analysis =====================
  Date: Sun Apr 28 21:48:07 2019
  Ref : labels/answer.mlf
  Rec : result/result.mlf
------------------------ Overall Results ---------------------------
SENT: %Correct=89.58 [H=430, S=50, N=480]
WORD: %Corr=97.47, Acc=96.66 [H=1694, D=27, S=17, I=14, N=1738]
==============================================================
```

4. Describe training process and accuracy (30%)

- Best
  - Number of states: 12
  - Gaussian mixtures: 5
  - iterations: 3
  - Corr: 97.47%, Acc: 96.66%

- How some changes effect the performance:

state	Gaussian mixtures	iterations	Corr	Acc
5	2	3	96.89%	74.80%
7	2	3	96.49%	84.87%
10	2	3	96.72%	94.42%
12	2	3	97.24%	96.32%
12	4	3	97.47%	96.66%
12	5	3	97.30%	96.49%