# Summery

## First Model: NoHistory Model

This is the first model that beats the baseline.

## Baseline:

It is given by the organizer. It scans all dialog acts for each slot observed so far in the dialog, and outputs the one hypothesis which has the highest score.

## NoHistory:

Different from the baseline, it only scans the dialog acts in the current turn and ignores all history hypotheses.

MajorityBaseline:

It always predicts “none” for each slot.

The results are shown in below.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| team | entry | slot | schedule | metric | test1 | test2 | test3 | test4 |
| baseline | entry0 | all | schedule1 | accuracy | 0.7748 | 0.7928 | 0.9178 | 0.8233 |
| baseline | entry0 | all | schedule2 | accuracy | 0.6020 | 0.4905 | 0.6202 | 0.5841 |
| baseline | entry0 | all | schedule3 | accuracy | 0.5982 | 0.4869 | 0.7033 | 0.6396 |
| baseline | entry0 | joint | schedule1 | accuracy | 0.1455 | 0.1394 | 0.4732 | 0.1775 |
| baseline | entry0 | joint | schedule2 | accuracy | 0.1467 | 0.1399 | 0.4475 | 0.1572 |
| baseline | entry0 | joint | schedule3 | accuracy | 0.1043 | 0.1409 | 0.4923 | 0.1162 |
| nohistory | entry0 | all | schedule1 | accuracy | 0.7878 | 0.7921 | 0.9156 | 0.8270 |
| nohistory | entry0 | all | schedule2 | accuracy | 0.6372 | 0.4967 | 0.6065 | 0.5906 |
| nohistory | entry0 | all | schedule3 | accuracy | 0.6108 | 0.4790 | 0.6898 | 0.6432 |
| nohistory | entry0 | joint | schedule1 | accuracy | 0.1640 | 0.1508 | 0.4572 | 0.1845 |
| nohistory | entry0 | joint | schedule2 | accuracy | 0.1655 | 0.1511 | 0.4281 | 0.1629 |
| nohistory | entry0 | joint | schedule3 | accuracy | 0.1176 | 0.1450 | 0.4675 | 0.1294 |
| majority | entry0 | all | schedule1 | accuracy | 0.8162 | 0.7971 | 0.7720 | 0.8434 |
| majority | entry0 | all | schedule2 | accuracy | 0.7056 | 0.5267 | 0.2590 | 0.6585 |
| majority | entry0 | all | schedule3 | accuracy | 0.6255 | 0.4790 | 0.1200 | 0.6234 |
| majority | entry0 | joint | schedule1 | accuracy | 0.2122 | 0.1723 | 0.0815 | 0.2406 |
| majority | entry0 | joint | schedule2 | accuracy | 0.2143 | 0.1729 | 0.1084 | 0.2485 |
| majority | entry0 | joint | schedule3 | accuracy | 0.1376 | 0.1680 | 0.0616 | 0.1162 |

The “all” in the slot column means the average accuracy of all 9 slots.

The “joint” is the combination of the 9 slots. If one of them is wrong, the result is wrong.

The table above shows that the “nohistory” model is better than the baseline except the test3.

Here are some possible reasons:

The “nohistory” model assumes that the latest SLU result is the best. It makes sense. If the slot appear again in the current turn, the same slot in the previous turns might be wrong. Or else, it will not show up.

“test1”, “test2” and “test4” are from Group A and C. They both used a mixed-initiative design, where “test3” from Group B used a directed design. (Question: why nohistory is better for a mixed-initiative design?)

Inspired Feature to try in the future:

Whether the slot appeared before

Is the old slot confirmed or denied?

The distance between the two slots

Whether there is a conflict between the two slots

If the slot values are different, at least one of them must be wrong

If the slot values are the same, the label for them must be the same too.

Majority Baseline works pretty well except for “test3”. It is because that most of time, there is no value for many slots.

## Topline

## Observation and Future Direction