Lecture #14: Oracle Reductions
What Will Happen During the Lecture

Remember... You Had Homework!

Students were asked to work through the following set of lecture notes before this lecture.

- Lecture Notes — “Oracle Reductions”.

As always, you may attend the lecture presentation if you have not worked through this material ahead of time — but it will not be repeated for you, and you might get a little bit lost, during the presentation, if you haven’t worked through this.

Problems To Be Solved

Consider the language $\text{LOOP}_{\text{TM}} \subseteq \Sigma^{\star}_{\text{TM}}$, including encodings of Turing machines M and input strings ω for M such that M ***loops*** on ω.

An oracle reduction will be used to show that the language LOOP_{TM} is undecidable.