

Pensieve header: Playing games with "SpeechRecognize".

```
In[ ]:= SetDirectory["C:\\drorbn\\AcademicPensieve\\2019-04"]
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Out[ ]:= C:\drorbn\AcademicPensieve\2019-04
```

```
In[ ]:= audio = Import["../2012-07/GameOf15.mp4", "Audio"];
```

```
In[ ]:= QuantityMagnitude[Duration[audio], "Second"]
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Out[ ]:= 540.7
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```
In[ ]:= Monitor[
```

```
  Table[part = SpeechRecognize[audio, Masking -> {t, t + 32}],
    {t, 0, QuantityMagnitude[Duration[audio], "Second"] - 2, 30}],
  {t, part}]
```

```
Out[ ]:= {hello there so i'm professor a binaton and i teach at the university
  of trunter in the department of mathematics and i will be one of your
  lecturers in the math camp in the next few in the coming few weeks and
  richard asked me to teach you something interesting mathematically already
  today on this video so let's do that i want to teach you about a ce,
  about a central notion central phrase central concepting mathematics called
  isomorphism two objects in mathematics are sent to the isomorphy or we say that
  there isone morphs between them if well they could be completely different but if
  they are the same in what really really matters mathematically and what does re,
  and what is really really matters mutematically may mean different things a
  different context and i'm not going to give you the full list of possibilities
  right now but i'm just going to give you one example and in fact i'm going to
  phrase this example as a radle so you will have to determine what the iso orphism
  here you will have to decide why are these two notions in fact exactly the same,
  is in fact exactly the same in fact you will have to decide for yourself what
  one of these two notions are because im going to tell you about only one of
  the to the notion im going to tell you about is the game of fifteen so lets
  take a little bit of a digression and talk about the game of fifteen and maybe
  even played once or twice the game of fifteen starts with a tech of cards,
  and it's a very small deck only nine cards on the deck and they are labeled
  are numbered one two three well up to nine two players play the
  game and they played by alternating and each one drows one card
  from the deck and take it for himself or herself and then the first,
  the first of the two player to have in his possession three cards that add up
  exactly to fifteen wins degay and the question is who wins and whats the
  strategy to play this a so maybe isu we should play a simple game or two and a
  let's do gang number one it will be me against richard richard is the person,
  ad richard is the person holding the video camera so you can see but you will hear it
  in a minute okay dell move first and blow chooses too so i write to here and i cross
  out to from up here richard cannot take to read what do you choose it like choosing
  number three oh so let me remove free from the deck and put three here and my,
  re here and my response in the six so i cross out six anyour turnre chart
  so two plus six is seven so why don't i pick up not as a two four six
  as it so hopefully is still in even oh made state so since to plus
  six is a how would choose right you see why is move you see richard to,
  move you see richard two plus six is eight i have eight if i were to choose seven
```

i would win because two plus six plus seven is fifteen and is it yet is good and then i would wait so to prevent this richard is choosing seven let me cross out seven an, seven and let me see you what do i choose i will choose five so five is now crossed out in our terreah so since to psfa is seven minitaries eight good because otherwise i would choose it and we so you choose a now what do i choose now you see six plus five is eleven and if i choose for i, and if i choose four i win so i choose four for is on my board and i have six plus five plus four which is a win so to wins good just in case that wasn't clear enough let me bring any razer he raised this game and start another one and for the second game richard will go, richard will go first and to well go second and i guess let me make a new deck of cards so one two three four five six seven eight nine which are what's your move right in the middle of the for five okay five is out my response is six six is out your turn number two to looking over t, to walking or two is a two is okay silus to is seven again so i must choose eight i choose eight and good what's your mot let's go with number what one for which our one is out and i guess five plus one is six so i better choose nine your turn o let's go with number seven wokine so numbers, number seven is richard now let me see seven plus five is twelve so i must prevent richard from choosing three so all the three your turn there's only one more number number four oh you're right so i guess richard chooses four four is out and the game is over and it's a dra, and its a drought because neither of us have found is able to show three cards that other up to fifteen so in fact richard has four cards of add up to fifteen so two plus one plus seven plus five is fifteen but that's not a way to win you need to have exactly three cards that to fifteen so this gran, to fifteen so this game is a draw so here are my two questions to you question one really you've played this game before you all know this game so my question is what is this game or in other words find another game that all of you have played before and that is precisely qui, is precisely equivalent to this game in maybe not in appearance but in mathematical content in other words find another game that is isomorphic to this game and question number two well am sure you have noticed that i was consulting my notes as i was playing with frichard that's unfair right but i was consulting my notes o, was consulting my notes so question number two is why was i holding in my notes a magic square what does a magic square have to do with this gang and with the isomorphism between this game and the other game are named yet a named that you all know thank you and see you intronto in a few weeks i}

```
audio2 = Import["../Talks/Perimeter-180312/Video.mp4", "Audio"];
len = QuantityMagnitude[Duration[audio2], "Second"]; len/60
words2 = Monitor [
  Table[part = SpeechRecognize[audio2, Masking -> {t, t + 60 + 2}],
    {t, 0., len - 2, 60}],
  {t/60, part}]
```

Out[]= 4580.53

