Project Description (Link to Video - https://scratch.mit.edu/projects/236060166/#fullscreen)

topic: TalkAboutBot

- A bot that can respond to young children's queries on many conceivable topics.

features:

- ~~Parental Controls (Safety):~~
  - ~~topics/responses - settings for parents: wide open, cautious, restrained, limited~~
    - ~~and options for restricting specific topics~~
- Randomizer - to provide suggestions for randomly chosen interesting topics
- ~~Local Memory/Learning Mode - can check in on previous topics to reinforce material and make connections to other interests~~
- ~~Family Mode - printed text, which parent can read~~
- audio responses, since our target age can't read yet
- ~~Textbot for older children, talking head for younger children~~
- Characterization - both personality and appearance can be customized
  - ~~or characterization can be based on topic (i.e., a Roman hoplite talking about life in a Roman settlement, or an animal talking about being a robot)~~

platform: Google Hangouts

business side:

- licensed by libraries and schools
- costs:
  - server space
  - authentication: no expense, covered by library's currently existing authentication system

Website hosting:

- Purchasing a service that includes
  - virtual server
  - redundancy/backup
  - scalable account
    - Is there a account that offers flexible scalability
      - Peak hours: bedtime, school hours, after school
      - We only pay for the scale we use: if we become more popular people won't be shut out.

objectives:

- create video
- set up basic chatbot that can say hello (https://developers.google.com/hangouts/chat/how-tos/bots-develop)
- explore the code behind the chatbot to understand what it does
  - make a network diagram?
- explore use of different AI and language platforms (api.ai from Google, LUIS from Microsoft, etc.)
- create a user interface
- explore how to create a personality/personalities

~~*timeline*~~:

1. ~~7/10/18 - Working on project description and video. Review rubric for clarity. Create journal entry for feedback of class processes/progress.~~
2. ~~7/17/18 - first iteration of chatbot - basic - can say hello~~
3. ~~7/24/18 - second iteration of chatbot - attach AI - can respond to wider queries~~
    - ~~add first iteration of user interface - some kind of visuals in addition to basic text~~
4. ~~7/31/18 - third iteration of chatbot - AI + encyclopedia~~
    - ~~second iteration of user interface - add talking head for younger users~~
5. ~~8/7/18 - fourth/final iteration of chatbot~~
    - ~~third iteration of user interface - talking head and personality~~

roles: (to be determined; possibles listed below)

- UI
- ~~AI~~
- basic setup

challenges:

- How do we connect encyclopedic knowledge to our chatbot?
    - transactional chatbot - trained on top of structured data, and able to accomplish a limited set of limited operations
        - basic - connect to an encyclopedia, returns canned responses
        - advanced - AI w/encyclopedic knowledge/access, returns human-like responses
            - personality?
                - stock characters - cowboy, princess, doctor, astronaut, etc.
                - stock personalities - more individual, less stereotypical than the above
                - AI's are corruptible - MS Troy was taught to be racist and misogynistic within 24 hours of release.
        - advanced & personalized - gets to know specific child's interests
            - but this leads to privacy concerns
            - and perhaps better to avoid creating a search bubble
- How do we set up safety restrictions for parents to use? Library sign-in so they take care of it.
    - preset levels - wide open, cautious, restrained, limits
    - granular choices - specific topic lists
- How do children access the chatbot?
    - Does parent log in to Hangouts and set up sessions? Parent log-in
    - Can it be accessed via an app?
- How to encourage bonding, rather than technological separation of parents/children.

iterations

- feedback
- redesign based on feedback
    - user interface
    - AI
- growth
    - port assignments based on users

        - how many users?
        - how many servers (beginning and then after expansion)
        - time of day (heaviest traffic evenings, east coast to west coast)
- Market Testing
    - Phase 1 - test market - Chicago Public Library
        - provide free license to CPL for beta testing, w/offer of lower licensing fees in future after we switch to a paid model
        - number of projected users (per day) -
    - Phase 2 - expand test market - Illinois libraries
        - based on CPL usage stats/results, approach other libraries, selling licenses as a service the library can provide to patrons that will help more children become aware of library websites and services
    - Phase 3 - national library systems
        - license the service to libraries and school systems across the country
    - potential Phase 4 - school systems
    - Connection Speeds in different
        - locations
        - ISPs
        - Connection types
        - Browsers
        - Capacity
        -

- software implementation
    - servers running all the time?
    - users have to install client - browser-based, program, app
    - Github - version control

- numbers
    - # of potential users at CPL website
    - # of library systems in Illinois
    - ping test to Beanfield.net
        - 43ms back and forth between Chicago and Toronto
        - 700km between Chicago and Toronto
        - calculate latency (max throughput 13.10mbps) (from https://www.sas.co.uk/blog/what-is-network-latency-how-do-you-use-a-latency-calculator-to-calculate-throughput)
            - audio requires throughputs in the kbps range, so this throughput is sufficient
        - traceroute - 13 hops
    -

Video

plot:

- frustrated parents, can't answer all of their children's questions or simplify it so that their child can understand (lack of time/knowledge)
- use TalkAboutBot to satisfy your children's curiosity
- bonding experience - children and parents learn together

characters:

- children in different settings