[1] Welcome and Introductions

[2] Computer Science/Computational Thinking For Everyone
- CS4HS resources on our website: http://unk.edu/academics/csit/GoogleCS4HSGrant.php
- **7 Big Ideas** (flash cards)
  1. **Creativity**
  2. **Abstraction**
  3. **Data & Information**
  4. **Algorithms**
  5. **Programming**
  6. **The Internet**
  7. **Global Impact**
- **Computational thinking (CT): Pattern Recognition, Problem Decomposition, Abstraction, Algorithmic Development**
- An excellent game for students and an excellent introduction to CT: games.thinkingmyself.com/
- CS teaching resources starting point: CSTeachers.org (CSTA conference in Omaha July 7-10)
- Join CSTANebraska.org. **C**STA-NE-Omaha workshop for teachers on July 30th. They also hold bimonthly video conference meetings to share curricular ideas.
- Consider joining our Google Community plus.google.com/communities/113215934450921510818

[3] Mobile App CS Principles course materials
The teaching resource we are using is the "Mobile App Development CS Principles complete course: http://www.mobile-csp.org. (Watch the introduction video.)

[4] Intro to App Inventor
- **App Inventor website: http://appinventor.mit.edu**
- **Course in a Box website: http://www.appinventor.org/**. Review the App Inventor "Teach" educational resources, including the forums, curricular resources, tutorials, FAQ, etc.

[5] Getting Started Programming – we will do this step together
AppInventor.org Course in a Box: I have a Dream parts 1 & 2
1. Go to http://www.appinventor.org/content/CourseInABox/Intro/IHaveADream. This has a 9 minute tutorial, but instead, we will work on it together.
2. Click here to open the I Have a Dream Starter project in App Inventor. (Press continue to get started.)
3. We start in Design Mode. Let's look around
   - Screen1: center
   - Left side: Items we can add to the screen, plus other "drawers" with more items we can use.
   - Right side: components, media, and properties of the components. For now, we have the "screen1" component and its properties. We also have media files we can use.
   - Right side: above properties, we have "Designer" and "Blocks". We are in the designer now. The "Blocks" is where we add the action/behavior of the components.
   - Top left, we can go to our other projects, connect this project to a phone (we will not use this), build (we will use this to create a QR code that we can open on the phone)
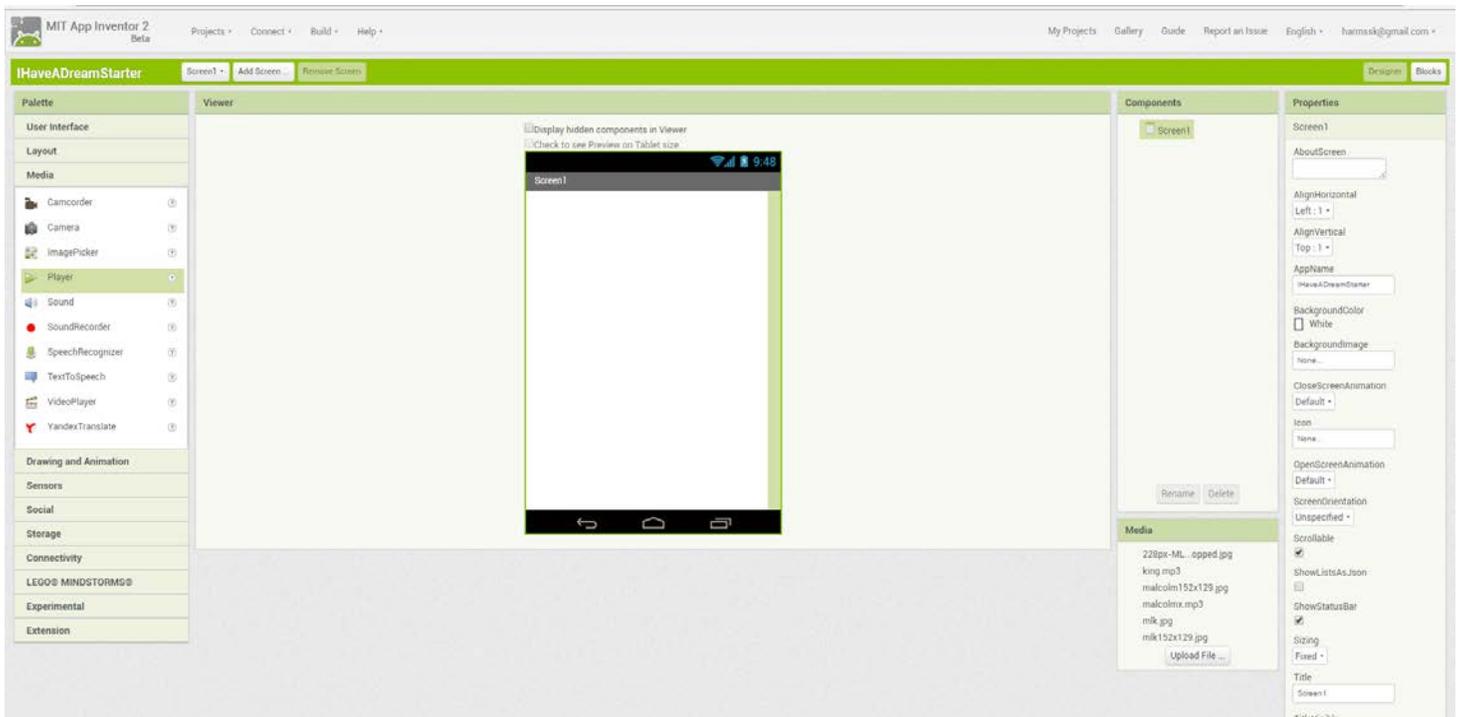
4. Drag button to Screen1
5. Set its image to "mlk.jpg".
6. Remove the button text.
7. Add a label above the button to describe the button, and another below the button, to tell the user what to do.
8. Change screen background to black
9. Change Labels text to white
10. Add media-> player, and set its source to the king.mp3 file.
11. Let's look at it on the phone. Go to Build-> App (QR code). Open the QR code reader on the phone. Click open, ok, install, etc. until it opens on the phone. Right now, it does not respond to any user action.
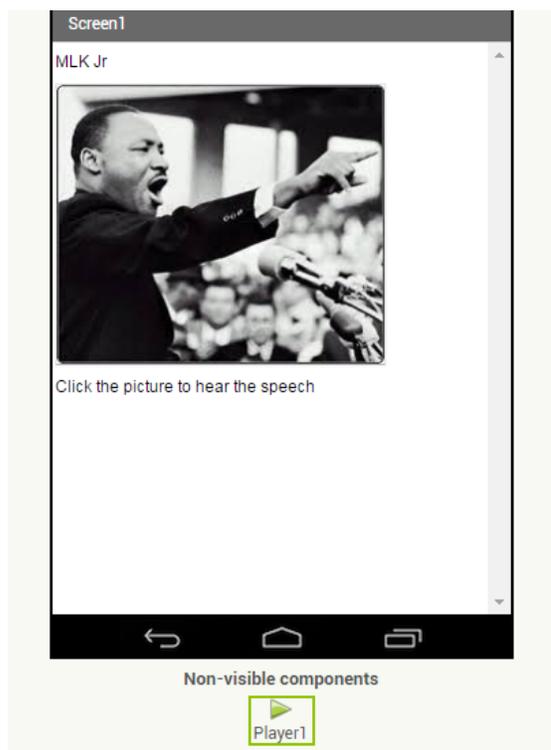
12. Now let's add the action! Go to Blocks. Let's look around
- Center: Viewer. This is the place to add the blocks that we want to work.
- Left side: Here are the blocks we can use. There are built-in blocks, and blocks for each of the components we added in the designer.
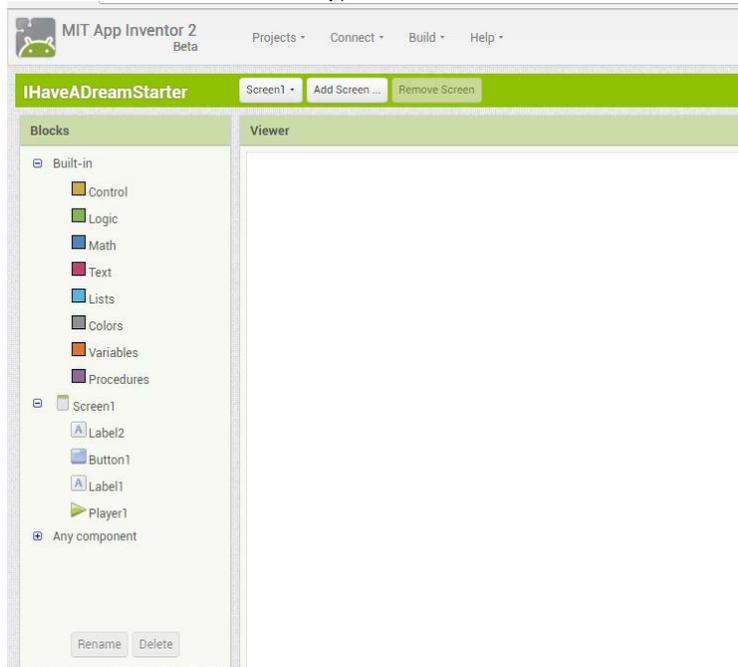
13. Add the button1 block: "When Button1.click".
14. Inside that block, Add "call player1.start".
15. Download apk & test on phone – use QR code reader again!

I have a dream 2:
1. Go back to the Designer, Add Malcom button (remove text, add image).
2. Change MLK image to the smaller MLK image.
3. Add a Layout – horizontal.
4. Drag images into the layout – on top of each other.
5. Rename buttons appropriately. (Click on the component. Just above "media" is the rename button.)
6. Change the screen horizontal alignment to "center".
7. Add an image of them together above the buttons.
8. Revise the text of the labels. Change font size.
9. Add another player for Malcom's speech. & rename players appropriately.
10. Go to Blocks to add the actions.
11. Add Malcom button & make it play
12. Try it out. Is anything wrong?
13. Control: if/ then. Click the "star" and add "else" inside the "then".
14. Make the code: If MLK is playing – pause it, otherwise play it
15. Copy code to Malcom button, and adjust to the correct player and button.
16. Test!
17. Anything wrong?
18. Add pause of other player, when a button is clicked, before you check if the player is playing.
19. Test again!
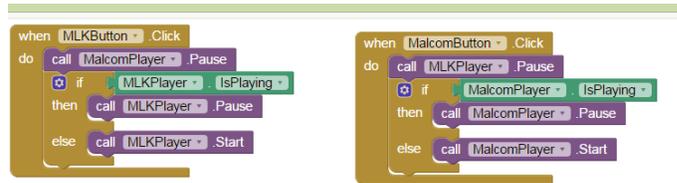
I have a dream project:
1. Change the top label to ask the user to enter what MLK Jr is telling Malcom.
2. Add text box below the top label.
3. Add text to speech media.
4. Change the MLK/Malcom image to a button to play the text to speech, when it is clicked, or add accelerometersensor that starts to text to speech when the phone is shook.
5. Add needed code.
6. Add your own stuff!

[6] Building Drawing & Animated Games: Paint Pot
http://www.appinventor.org/content/CourseInABox/drawAnimate

This example illustrates an app with many buttons that change the user interface (UI) experience. It also illustrates the use of variables, drawing lines and using the camera. On your own time, read through all of the supplemental teacher's guides for this lesson.

Using your own ideas and the suggested enhancements, enhance/customize the Paint Pot app.

**Time to share what you've done or plan to do!**

[7] Time for one more App?
Options:

1   Building Drawing & Animated Games: Mole Mash
http://www.appinventor.org/content/CourseInABox/drawAnimate/MoleMash
Using your own ideas and the suggested enhancements, customize the Android Mash app.
Science/Math teachers: think about how you could model a scientific process, or set up a simulated scientific experiment through an app using the random number generator.

2   Build Quiz & Informational Apps: President's Quiz
http://www.appinventor.org/content/CourseInABox/quizApps/PresidentsQuiz
Using your own ideas and the suggested enhancements, customize the President's Quiz app. Here is a UNK q

3   Build Apps with User-Generated Data: Note Taker
http://www.appinventor.org/content/CourseInABox/userGenerated/NoteTaker

Using your own ideas and the suggested enhancements, customize the Note Take app. (Make a grocery list, or a homework list.)

More good stuff:
- **https://course.mobilecsp.org/mobilecsp/ (Register to access the course content for free.)**
- CS Principles course materials: (On your own time, read about the Computational Thinking Practices pages 10-11 and the Big 7 ideas pages 12-38.)
- **Thinkable.com – "Cross platform" –make and test both Android and ios apps. (Our phones are not new enough for this.) Built on App Inventor. (Classic version – basically the same as App Inventor.)**
- Check out the resources on our website: www.unk.edu/academics/csit/GoogleCS4HSGrant.php