TECHNOLOGY CAMP

DAY 5 : HANDS-ON WITH HARDWARE

Build Your Dream Connected World

Session 3

Session Name:

Build Your Dream Connected World

Summary:

This is the capstone project for the week. Students will integrate learning from lessons in cyber security, cloud computing, mobile app development, Internet-of-Things, and hands-on hardware to develop a conceptual design and diagram of a dream connected world.

Time Allotment:

65 minutes

Learning Objectives:

- *Integrate previous learning experiences into solutions*
- *Create conceptual technology designs*
- *Work in teams to create technology designs*

Supplies:

- *Scrap paper / notepad to take notes*
- *Laptop / computer with Internet for research and/or presentation*

Learning Activities:

- **(2 minutes) - Session overview**

    Apply what you have learned to develop a conceptual design and diagram of your dream connected world.

    Discuss what we learned this week and explain how all the information can be incorporated into the design and diagram. Explain that they are free to use their laptops for research in developing their designs and for their presentations. Explain that they will have 25 minutes to develop their design and diagram and

there will be 25 minutes for students to present their work to the group. Depending on number of students in class, create teams where there are no more than five teams total. Give each team 5 minutes to present.

- **(4 minutes) - Design & Diagram instructions**

  Instruct students on ideas and Items to include in their conceptual design and diagram of dream connected world.

  - *Description of your design. – General overview of their concept*

  - *What Hardware is used?-Provide information about why key hardware was selected*

  - *How are things connected and controlled?-Provide information on the connectivity (e.g. cloud, mobile, physical, etc.)*

  - *What security precautions have you included?*

  - *Explain how it all works together.*

  - *How does this design achieve your vision?*

  - *Prepare a presentation for the group.*

  Explain why each element is important in communicating their vision for the dream connected world.

- **(4 minutes) – Connected world Ideas**

  - *Connected Home- (Security, utility management, climate control, entertainment options, gardening, etc.)*

  - *Connected School- (Classrooms with computers, ebooks on tablets, real-time Internet based learning, VR integration, etc.)*

  - *Connected Government- (How government can use technology to enhance public services - DMV, Public Health, Business Permits, Tax Filing, Utilities Services, etc.)*

- ○ *Connected Shop- (information and sales, automated checkout, personalization and customization, delivery, etc.)*

- ○ *Connected Office- (Automated information sharing & workflow, Augmented and Virtual Reality (meetings, interactions, training etc.), Shared Equipment (printer/copiers, etc.), Utility and Resource conservation, etc.)*

- ○ *Use your imagination!*

- **(25 minutes) – Activity : Your Dream Connected World**

  - ○ *Divide students into five groups*

  - ○ *Description of your design.*

  - ○ *What Hardware is used?*

  - ○ *How are things connected and controlled?*

  - ○ *What security precautions have you included?*

  - ○ *Explain how it all works together.*

  - ○ *Prepare a presentation for the group.*

- **(25 minutes) – Demonstration / Team Presentations**

  - ○ *Divide the 25 minutes between the number of groups to allow for equal opportunity to present.*

  - ○ *Describe your design.*

  - ○ *What Hardware is used?*

  - ○ *How are things connected and controlled?*

  - ○ *What security precautions have you included?*

  - ○ *Explain how it all works together.*

- **(5 minutes) – Closing / Wrap-up**

Provide a brief summary of each topic and explain how they work in their final project to integrate their learning into the development of a dream connected world. Briefly go over the topics covered over the last five days.

- *Cloud Computing*

- *Mobile App Development*

- *IoT with Raspberry Pi*

- *Cyber Security*

- *Hands-on with Hardware*

- **(1 minutes) - What's next?**

  Inform students that they are finished with Hands-on with Hardware day of the camp. Students can head back to the cafeteria for a snack break. After the snack break is gaming sessions, prizes, giveaways, raffles, certificates, and a whole lot more fun.