At the Center of Coding, Computer Science, and Computational Thinking Literacies
Agenda for Today

1. Preparing Youth for the Unknown Future
2. Libraries Ready to Code Overview and Definitions
3. Libraries Ready to Code in Three Phases
4. Libraries Ready to Code Themes
5. What’s Next
6. Selected Resources
Preparing Youth for the Unknown Future

● Children entering school now will work in jobs or pursue careers not yet imagined.

● Technology changes the nature of how we communicate, how we work, and how we live.

● There is tremendous opportunity for innovative approaches to solving complex social and economic problems which challenge local communities and across the globe.

● Today’s workforce requires technical and digital skills. As technologies continue to advance and as emerging technologies are embedded across work sectors and in daily life, the demand for specific sets of cognitive skills will increase as essential in order to integrate these technologies into a variety of areas related to work and life.

● This calls for more attention to developing skills such as taking initiative and collaboration as well as creativity and problem solving.
Libraries Ready to Code: Overview and Definitions
What is Ready to Code?

Libraries Ready to Code is an initiative of the American Library Association, sponsored by Google, to ensure libraries have the **resources, capacity, and inspiration** to design and implement activities that promote computational thinking and computer science among our nation’s youth.
What is Computational Thinking

Computational Thinking is about understanding what a problem is, developing solutions, and presenting those solutions in a way that a computer, a human, or both can understand.
What is the big problem you are trying to solve? Can you break it down into smaller, manageable parts?

What similarities do you see within the bigger problem and its parts? Trends?

What general principles can you identify? What information is relevant and what can be set aside?

What step-by-step instructions or set of rules can you design to solve the problem?

Kids learn computational thinking when they:
- tinker
- create
- design
- build
- code
- make

For more info, visit: www.cityof homer-ak.gov/library
Why Libraries?

- Informal learning
- CT is a literacy
- Lifelong learning
- Broadening participation
- Equity of Access
Libraries Ready to Code in Three Phases
Ready to Code: A Summary

- **Phase I Environmental Scan**: Research to understand the lay of the land of libraries and coding

- **Phase II Pre-Service**: Working with faculty in library & information science programs to revise syllabi & integrate computational thinking literacies

- **Phase III In-Service**: 28 libraries across US funded to design & implement Ready to Code activities
Phase III: Developing & piloting library supports

2018 (report in 2019)

Phase II: Preparing pre-service librarians

2017 (report forthcoming)

Phase I: Surveying libraries

2016
<table>
<thead>
<tr>
<th>Challenges</th>
<th>Opportunities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Library staff lack skills and dispositions</td>
<td>Increase access and exposure for non-dominant youth &amp; families</td>
</tr>
<tr>
<td>Library Science programs don’t integrate Ready to Code themes</td>
<td>Expand library capacity to support formal &amp; informal learning</td>
</tr>
<tr>
<td>Traditional models of library staffing and youth &amp; family activities don’t support Ready to Code themes</td>
<td>Increase impact through cross-sector collaboration</td>
</tr>
</tbody>
</table>
Phase II: Embedding Computational Thinking in Library Science Programs

6 Faculty from Library and Information Science Graduate Programs
Phase II Goals

- Design and pilot pre-service technology courses for youth librarians that embed Ready to Code themes.
- Create models for courses in Library Science curriculum and share with colleagues.
- Challenge current and future youth librarians to develop requisite teaching skills and pedagogical expertise to engage youth through programs that foster computational thinking literacies.
Over the course of the project faculty came to describe computational thinking as a critical literacy for youth and therefore aligned with the mission and ability of libraries to provide equitable access to opportunities to develop this literacy.

--Ready to Code Evaluation Report
Phase III - Building Capacity of Library Staff

28 school and public libraries
Created unique CT programs and
Built a Community of Practice
Phase III Goals

Enable any library - regardless of CS expertise or resources - to offer programs that prepare U.S. kids with future skills

1. **Design a toolkit** that every library around the country can use to implement free Computational Thinking and CS programs

2. **Build a cohort of leaders** to provide expertise, develop and test a toolkit, and be ambassadors for Ready to Code
The Libraries Ready to Code Themes
Ready to Code Themes: Strong Programs for Strong Communities

Ready to Code programs facilitate computational thinking by:

- Broadening Participation
- Connecting to youth interests and emphasizing youth voice
- Engaging with communities
- Engaging with families
- Demonstrating impact through outcomes
<table>
<thead>
<tr>
<th>Recognize</th>
<th>Learn</th>
<th>Implement</th>
<th>Advocate</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Recognize</strong> how CT relates to youth services library work and to community</td>
<td><strong>Learn</strong> techniques to integrate CT into library activities</td>
<td><strong>Implement</strong> effective CT programs</td>
<td><strong>Advocate</strong> for the value of library CT programs to stakeholders</td>
</tr>
<tr>
<td>Recognizes that equitable and inclusive learning environments are required to reach diverse youth through library CT activities.</td>
<td>Learns how to design equitable and inclusive learning environments to support CT and plans potential strategies for their unique environment.</td>
<td>Implements equitable and inclusive CT learning environments, including focused recruitment and retention efforts.</td>
<td>Communicates the value of CT learning environments that are equitable and inclusive, especially in ways that show evidence of effectiveness.</td>
</tr>
<tr>
<td>Connecting youth interests and emphasizing youth voice</td>
<td>Recognizes that connecting to youth interests and emphasizing their voice can strengthen engagement and learning in CT.</td>
<td>Learns about local youth’s interests and how to give these youth opportunities to design and implement CT activities.</td>
<td>Implements CT activities that embed youth interests and youth leadership.</td>
</tr>
<tr>
<td>Engaging with communities</td>
<td>Recognizes the value of working with community members, organizations, and a variety of stakeholders in planning and implementing CT activities.</td>
<td>Learns about expertise available in the community to support CT activities and explores ways to make connections with individuals and organizations.</td>
<td>Implements partnerships with community members, organizations, and stakeholders in the design and implementation of CT activities.</td>
</tr>
<tr>
<td>Engaging with families</td>
<td>Recognizes that family can play a key role in supporting CT learning, by connecting CT to learning that happens in other places.</td>
<td>Learns about the needs and interests of local families in order to design and implement community and family-based CT activities.</td>
<td>Implements CT activities in which families are actively engaged through participation and/or communication.</td>
</tr>
<tr>
<td>Demonstrating impact through outcomes</td>
<td>Recognizes that CT activities can be strengthened and of more value when there is measured impact on youth, families, the library, and community stakeholders.</td>
<td>Learns how to measure the impact of the library’s CT activities to address community CT needs and develops a plan for evaluation and/or measurement.</td>
<td>Implements short- and long-term data gathering that can be used for program improvement and that can demonstrate the effect of CT activities on youth, families, libraries and the community.</td>
</tr>
</tbody>
</table>
At each location, at least one RtC program was facilitated by at least one library staff, and in many cases it was >.
What’s Next...

● Website Launch!
● Ready to Code Ambassador Program
● Train the Trainer Program
● Research Agenda?
● Assessing Impact of programs
● Applying Ready to Code to Adult Learners
Selected Resources

- Libraries Ready to Code [Website](#)
- Phase I Report: [Ready to Code: Connecting Youth to CS Opportunities Through Libraries](#)
- Advocacy Video: [Ready to Code](#)
- Policy Brief: [Careers for Youth in the Digital Age Careers for Youth in the Digital Age](#)
Thank You!

Marijke Visser
mvisser@alawash.org