VCU CodeVA Capstone Requirements Document
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Description

This document outlines the requirements for the VCU Capstone project in partnership with CodeVA during the Fall semester 2019. It is expected that we will revisit this document to outline the requirements for the Spring semester 2020. Most work and projects will be executed in 6 - 8 week sprints with expected deliverables and progress updates.

Three projects:

- Coaches Academy Development and Revision
- Program Support Working Groups For Curriculum
- Ongoing Grant Support

Coaches Academy

Coding Lesson Activity Creations & Revision (K-5)

- Analyze and Review Current K5 Coaches Academy Coding Lesson Activities
- Developing understanding of Visual programming languages (ie. Scratch
- Develop understanding of Lab lecture model of instruction.
- Create or modify coding activities for:
  - More rigor
  - Expressing concept more clearly
  - Including missing concepts
  - Grade level appropriateness
  - Text based programming language (ie. python) "twins"
- Conduct stakeholder reviews with current classroom teachers to get feedback on materials created

- Will research and develop resources articles, etc. to be included as apart of the CodeVA CS Knowledge Base
- Review submissions for technical accuracy

We will take these requirements to produce these deliverables:
- Scratch Starter Projects and Completed Projects for each activity
- A brief description of the concept being illustrated by the activity.
- A starter and completed project for each Python program
- All programs, scratch or python should include comments
- Each project should have a categorization (mild ,medium, spicy)
- Stakeholder Review Presentations
- Articles and resources submitted to the CS knowledge base
- Outlined process for technical review of submission

Middle School Python Lessons

- Create or modify coding activities for:
  - More rigor
  - Expressing concept more clearly
  - Including missing concepts
  - Grade level appropriateness
  - Text based programming language (ie. python) "twins"
- Conduct stakeholder reviews with current classroom teachers to get feedback on materials created
- Will research and develop resources articles, etc. to be included as apart of the CodeVA CS Knowledge Base
- Review submissions for technical accuracy

We will take these requirements to produce these deliverables:
- Python Starter Projects and Completed Projects for each activity
- A brief description of the concept being illustrated by the activity.
- Bridge programming activities from visual to text based languages
- Articles and resources submitted to the CS knowledge base
- Outlined process for technical review of submission

Program Support

AP Computer Science Principles Programs

- Develop practice programs and solutions for AP CSP online course
- Develop Solutions to longer projects
- Develop outlines for CS topics such as cybersecurity, Big Data
- Will research and develop resources articles, etc. to be included as apart of the CodeVA CS

Knowledge Base
- Review submissions for technical accuracy

We will take these requirements to produce these deliverables:
- Collaborate with curriculum development team to understand content and rigor requirements for the AP CSP Course

After School Content Creation and Review

- Observe CodeVA Camps
- Develop activities that build computer science skills to be used for after-school enrichment activities for clubs, etc.

We will take these requirements to produce these deliverables:
- Creation of 6+ activities with full instructions, goals, supplies list, etc. for anyone to use to enrich the computer science skills for students

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Grant Support

Grants Support

- Work with grant project teams and support project/grant needs

We will take these requirements to produce these deliverables:
- Develop resources needed