WGU D295 Task1 – Digital Citizenship

# The Quest of Code

## A1. Requirement Brief

**Course Details:** - **Grade Level:** 9–12

**Content Area:** Computer Science / Career and Technical Education (Information Technology Pathway)

**Course Standards:** - **National:** CTE (CSTA/IT Pathway)

**College Board Requirements:** AP Computer Science Principles - Create Performance Task

**WGU D295:** ISTE Standards for Students - International Society for Technology in Education (2016)

## A2. Learning Goal

Students will collaboratively design and develop a full-stack web application modeled as a *quest-based learning game* that demonstrates understanding of front-end, back-end, and API integration. Students will apply digital citizenship, computational thinking, and ethical technology practices while creating, deploying, and presenting their prototypes to an authentic community audience.

### A2.1 Elaboration on Goals

In the evolving landscape of computer science education, The Quest of Code transforms programming instruction into an immersive, quest-based experience that merges creativity, collaboration, and technical mastery. Students move beyond routine coding tasks to embark on a narrative-driven project—one that mirrors real-world software development and promotes computational thinking, design, and digital citizenship.

This experience emphasizes both individual mastery and team-based innovation. Students work in collaborative teams to design a functional full-stack application that embodies key software development principles and ethical computing practices. Through this approach, they engage with authentic challenges, applying both technical and creative problem-solving in a quest-ified and meaningful context.

### A2.2 Prerequisites

Classroom students are familiar with GitHub Pages, HTML, CSS, JavaScript, and Python. They actively participate in an SDLC (Software Development Life Cycle) that includes code commits, GitHub pushes, integration with team members, and pull requests (PRs) to the instructor’s repository.

### A2.3 Background

Prior to engaging in this project, the students were introduced to a project consisting of six modules: activation, demonstration, practice, application, assessment, and integration. They are to create a project that mimics this project’s techniques while learning Full-Stack development (JavaScript interacting with Python/Flask) and utilizing APIs—focusing on login, data storage, retrieval, and Gemini APIs. This learning is modeled as a quest or adventure, with students tracking through the modules as part of an ongoing “Quest of Code” experience.

### A2.4 Learning Phases

This new phase begins with *Ideation*, where students conceptualize their projects (shown below), which then moves into *Storyboarding* and *Prototyping*. Each team’s prototype will debut during the school’s **“Night at the Museum”**—an Electives Department showcase attended by families and community members, many of whom are professionals in the technology sector. During this event, students will present their prototypes and gather feedback from the audience.

The general plan includes a simplified *guest login* that allows visitors to traverse through different stages of each project, where interactions capture and log data. This authentic public feedback experience helps student teams test usability and determine whether their prototype is ready to enter the *Development Phase* of the Agile Scrum SDLC.

### A3a. AP Standards Alignment [College Board, 2024]

**AP Computer Science Principles - Create Performance Task:** [Student Task Directions](https://apcentral.collegeboard.org/media/pdf/ap-csp-student-task-directions.pdf)

“Programming is a collaborative and creative process that brings ideas to life through the development of software. In the Create performance task, you will design and implement a program that might solve a problem, enable innovation, explore personal interests, or express creativity.”

### A3b. CTE National Standards [CSTA, 2017]

* **CSTA 3A-AP-13:** Decompose problems and subproblems into parts to facilitate design, implementation, and review of programs
* **CSTA 3A-AP-17:** Systematically design and develop programs for broad audiences by incorporating feedback from users
* **CSTA 3A-AP-22:** Design and develop computational artifacts working in team roles using collaborative tools

### A3c. Digital Citizenship Principles [ISTE, 2016]

* **Empowered Learner:** Students design their learning pathways
* **Digital Citizen:** Ethical use of tools, privacy, and data responsibility
* **Knowledge Constructor:** AI and media literacy integration
* **Computational Thinker:** Efficient and creative problem-solving
* **Innovative Designer:** Iterative design, prototyping, and testing

## A4. Technology Tools

The students will continue to build and grow existing skills; they will begin to develop skills in Digital Literacy and Citizenship related to AI and API usage in coding.

### A4.1 Technical Samples

|  |  |
| --- | --- |
| Core Domains | Skill Threads |
| Front-End | HTML, CSS, JS, media presentation |
| Back-End | CRUD operations, database management |
| AI / API Integration | Internet, Deployment, JSON, |
| Data Literacy | Authentic sources, secure data handling, access tokens |
| Communication | Blogging, storytelling, web publishing, and presentation |

### A4.2 Ideation Summary from Previous Lesson

## Group 1: Game Board Progression

Theme: Learning to Code Through Life’s Analogies — ‘Roll your way from traveler to full-stack developer.’

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| --- | --- | --- | --- |
| **Lesson** | **Skill or Concept (Exit)** | **Learning Activity** | **Assessment** |
| **1. Front-End: “Travel” Module** | HTML/CSS, UI/UX planning | Design a landing page (User View) that guides users on their quest; include buttons, links, and styled interface elements. | Working, responsive interface mock-up |
| **2. Back-End: “Food / Database Kitchen” Module** | CRUD operations, database schema | Create a small data model to store user progress, awards, or tokens; connect to front-end | Functional CRUD (Create/Read/Update/Delete) implementation |
| **3. Integration: “Sports / API Arena” Module** | Fetch, async data handling | Create a module that GETs/POSTs live user data (XP, tokens, progress) | Working API connection and visible data flow |
| **4. Reflection & AI: “AI / Code Coach” Module** | AI-assisted debugging, optimization | Use AI tools to identify and resolve code issues or improve features and insure credibility | Reflection report + improved code commit |

## Group 2: Data Famine Progression

Theme: Rebuilding Digital Civilization — ‘Your planet has lost its data and knowledge. Restore the civilization through quests of technology and truth.’

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| --- | --- | --- | --- |
| Planet | Theme / Analogy | Skill Focus | Quest Outcome |
| AI Planet | Awakening | AI tools for problem-solving and digital literacy | Learn to use AI ethically for research and creation |
| Media Literacy Planet | Awareness | Identifying misinformation, scams, and bias | Build a ‘Truth Filter’ web page or quiz |
| Secure Data Planet | Rebuilding Infrastructure | Secure database creation and CRUD operations | Restore the planet’s archives with encrypted data |
| Microblogging Planet | Communication | APIs, posting, and sharing securely | Create a microblog feed that broadcasts recovered data |
| Vault Planet | Completion | Synthesis of all skills | Unlock the vault and restore the knowledge civilization |

### A4.3 Assessments

This project will have several built-in checkpoints and reviews. T*he Quest of Code represents a transformative approach to computer science education, combining technical skill development with creative problem-solving and ethical technology practices. All these events are recorded on Canvas, LMS.*

* **Checkpoint 1:** Ideation finalization – sync on above
* **Checkpoint 2:** Storyboard review – story sync before code start
* **Checkpoint 3:** Pre-review Prototype – progress in GitHub
* **Checkpoint 4: Event** Participation - feedback collection
* **Summation:** Reflection of feedback with Instructor

### A4.4 Digital Citizenship

In build this lesson we have considered many topics in

1. Digital Access is directly correlated to the entire lesson.
2. Digital Communication is the core requirement of the lesson, specifically blogging and building secure chat.
3. All coding projects are published to the Open Coding Society **[OCS, 2025]** GitHub repository which contains an Apache [license](https://github.com/Open-Coding-Society/pages/blob/main/LICENSE).
4. Two AP [College Board, 2024] topics will be covered in these workshops: “5.5 Legal and Ethical Concerns” and “Safe Computing”.

B. E-Learning Environment

The entire activity is focused on e-learning. All materials are published on [Pages](https://pages.opencodingsociety.com/) in the Open Coding Society **[OCS, 2025]**. The focus of building an FE/BE Website is all e-learning.

Key E-Learning Tools

1. GitHub – This is a repository for story code for collaboration. This can be accessed in and out of school. It retains analytics on student work and progress.
2. GitHub Pages – After building code in GitHub, GitHub Pages have built in actions and rules to automatically deploy. Here is evidence of me deploying a D292 [project](https://pages.opencodingsociety.com/plagiarism). S. Here is a recent lesson on building a [blog article](https://pages.opencodingsociety.com/games/tictactoe/jupyternotebooks) produced by a student. This project's students will be doing similar activities.

### C. References

[CSTA, 2017] Computer Science Teachers Association. (2017). CSTA K–12 Computer Science Standards. Retrieved from <https://www.csteachers.org/page/standards>

[ISTE, 2016] International Society for Technology in Education (ISTE). (2016). ISTE Standards for Students. Retrieved from <https://www.iste.org/standards/for-students>

[College Board, 2024] College Board. (2024). AP Computer Science Principles Create Performance Task. Retrieved from <https://apcentral.collegeboard.org/>

**[OCS, 2025]** Open Coding Society. (2025). *Open Coding Society Curriculum Portal.* Retrieved from [https://pages.opencodingsociety.com](https://pages.opencodingsociety.com/)