Computer Coding Scavenger Hunt using Quick Response Codes (Resource Exchange)

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COMPUTER CODING SCAVENGER HUNT USING QUICK RESPONSE CODES

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PCEE DIV | OHIO NORTHERN UNIVERSITY | WVU INSTITUTE OF TECHNOLOGY

Example C++ Code from the Harry Potter Coding Scavenger Hunt

```
//// ScavengerHuntHalloween.cpp : This file contains the 'main' function. Program ex
////
//
#include <iostream>
using namespace std;

int surprise(int& value1, int value2);

int main()
{
    cout << "Hello Witches and Wizards! Welcome to the Halloween Scary Scavenger Hunt
    cout << "Today we will be reviewing concepts we have been learning over " << endl
    cout << "the past few weeks: functions, pass by reference, and arrays! " << endl
    cout << "(With a little loop review thrown in :-)" << endl;

    // We will be experimenting with a completely virtual scavenger hunt this time.
    // So very, very little going around the building. You will need to scan the QR
    // codes provided around the room. The only time you will need to leave
    // the room is at the very end of the scavenger hunt.

    // Good Luck! May your brooms fly straight and your owls come home to roost.

    int tempVal = 1;
```

ESSENTIAL SKILLS

- Problem solving
- Teamwork
- Understanding syntax
- Interpreting code

PURPOSE

- Active learning activity to have students practice reading code and not using the compiler to predict the outcome

INTRODUCTION AND SAMPLE ACTIVITY

Teaching computer programming can be challenging and difficult to make exciting. A scavenger hunt can energize the classroom and will get students up and moving around. This novel use of normal course materials is easy to create, easy to set up in any classroom, easy to relocate, and requires no re-set time between uses.

The QR codes are used to deliver the clues or allow the students to "check-in" at each step.

The students act as the computer and interpret the code (clues) to find the next clue (i.e., next colored QR code and/or location) in the hunt.

The supplied 5 clue C++ Harry Potter Halloween Themed scavenger hunt covers: variable declaration, Strings, assignment statements, print statements, if statements, computer arithmetic, case/switch statements, arrays, loops, pass by value vs. pass by reference, casting to different data types, ASCII, and functions.

INCLUDED

- All materials for a C++ Harry Potter themed code scavenger hunt are supplied including:

- ▶ C++ Code
- ▶ QR Codes
- ▶ Lesson Plans
- ▶ Background Info
- ▶ FAQs
- ▶ Classroom Script

PURPOSE: PROVIDE FUN HANDS-ON ACTIVITIES FOR MIDDLE AND HIGH SCHOOL TEACHERS AND CS OUTREACH PRACTITIONERS

These scavenger hunts are flexible in time length so that they can be simply added to ongoing class curriculums or during a computer/technology week.

We provide suggestions, samples for an engineering math scavenger hunt, and tips for creating scavenger hunts for a variety of STEM fields.

```
void displayArrayLocation(char nextLocation[], int index)
{
    switch (nextLocation[index])
    {
        case 'G': cout << "Gold Gallons colored "; break;
        case 'R': cout << "Gryffindor Red colored "; break;
        case 'Y': cout << "Hufflepuff Yellow colored "; break;
        case 'J': cout << "Jackolantern or Pumpkin colored "; break;
        case 'B': cout << "Ravenclaw Blue colored "; break;
        case 'W': cout << "Hedwig's white owl feather colored "; break;
        case 'D': cout << "Dumbledore's gray beard colored "; break;
    }
    cout << "QR code\n";
}
```

Grade Level Recommendations:

Middle or High School, College Freshman

Need Materials:

*Materials: (1) colored printer ink or color copier,
(2) 8.5 X 11 white paper, and (3) tape*

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Google Drive with Materials:

<https://tinyurl.com/r6gw5rt>

COMMON CORE STANDARDS COVERED

01

Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.

02

Engage effectively in a range of collaborative discussions with diverse partners on topics, texts, and issues, building on others' ideas and expressing their own clearly

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```
//You found another clue! Messages
//
//Now if you have a second...Arthur Weasley has a
//very serious question for you...
//As you must know all about muggles...
//What exactly is the function of a rubber duck?
//
#include <iostream>
using namespace std;

int main() {
    cout << "Arthur Weasley: ";
    cout << "What exactly is the function of a rubber duck?" << endl;

    string items[10] = { "Strawberry Ice cream", "Green Pen", "Blue Book", "White Quill", "Gold Switch", "Rubber Duck", "Dumbledore's Beard", "Hedwig's Feather", "Jackolantern", "Pumpkin" };
    items[9] = "Dumbledore's Beard, or cat?";
}
```

```
//
//If you catch this clue, your house will win the
//Quidditch Match.
//And you can collect your prize from Dr. Stephany Coffman-Wolph
//See you soon!
//
#include <iostream>
using namespace std;

void changeValue1(int& val1) {
    val1 += 55;
}

void changeValue2(int& val1) {
    val1 -= 7;
}
```

SCAN ME