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ICS3C0

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Software Environment

1. **software integrated development environment (IDE):**

* The Explorer
* The Source Editor
* The Debugger
* The Compiler
* The Data File Viewer

**For each main feature listed in #1 above, explain the feature and how the Arduino Create environment provides this feature.**

The Explorer- The Explorer Filesystems tab presents a hierarchical view of

directories and files that have been mounted for use in NetBeans.

* The Source Editor- The Source Editor is a modern programmer&#39;s text editor

that is optimized for writing Business BASIC source code.

* The Debugger- The Debugger incorporates BBj debugging and editing tools into

the NetBeans environment, adding the ability to work with multiple files and

manage projects.

* The Compiler-
* The Data File Viewer- The Data File Viewer provides a convenient way to view the contents of database files.

**Version Control System**

1. **List five main features of a software version control system.**

* Size
* Backup and Restore.
* Synchronization.
* Long-term undo and Short Term Undo
* Track Changes

2. **For each main feature listed in #3 above, explain the feature and how the GitHub environment provides this feature.**

* Size- Unlimited space for repository.
* Backup and Restore- Files are saved as they are edited
* Synchronization- Let’s people share files and stay up-to- date with the latest version.

Short-term undo and Long term undo- If you download a file you handed in and

needed to make changes and messed it up then you can go back to github and download the same file and go back to the good version.

* Branching: Keeps multiple streams of work independent from others.

1. **Explain any version control features that we have not made use of in the class so far but that would be useful in the future**

  Branching

**Programming Errors**

1.    Define and explain a “syntax error” when programming code.

  **Syntax Error** - A character or string incorrectly placed in a command or instruction that causes a failure in execution.

2.    Create a sample Arduino program that has a syntax error. Answer this question by copying and pasting your sample code below and by providing an explanation.

int GreenLED = 12;

int RedLED = 11;

void setup()

{

pinMode(GreenLED, OUTPUT);

pinMode(RedLED, OUTPUT);

}

void loop()

{

dot(4); blank(1); //H

dot(1); blank(1); //E

dot(1); dash(1); dot(2); blank(1); //L

dot(1); dash(1); blank(1); //A

dot(1); dash(1); dot(2); blank(1); //L

}

int dash(int times) {

digitalWrite(GreenLED, HIGH);

delay(750);

digitalWrite(GreenLED, LOW);

delay(750);

}

int dot(int times) {

digitalWrite(RedLED, HIGH);

delay(250);

digitalWrite(RedLED, LOW);

delay(250);

}

int blank(int times) {

digitalWrite(GreenLED, LOW);

digitalWrite(RedLED, LOW);

delay(1000);

}

3.    Define and explain a “runtime error” when programming code.

  **Runtime Error** - A program error that occurs while the program is running.

4.    Create a sample Arduino program that has a runtime error. Answer this question by copying and pasting your sample code below and by providing an explanation.