**Activity Safety Form**

|  |  |
| --- | --- |
| **Program:** | jrDEEP Summer Academy |
| **Course Title:** | Cool Code |
| **Instructor(s):** | Connor Smith, Anastasiya Martyts |
| **Season:** | Summer |
| **Year:** | 2014 |
| **Project/Activity Name:** | Practice with Nesting |
| **Source:** | Made up by us! |
| **Grade Level:** | 5-6 |
| **Topics Covered By Activity:** | Nesting loops and statements |
| **Objective (Learning Outcomes):** | This activity will help students understand the usefulness of nesting and combining multiple loops/statements to solve a coding problem. This activity is meant to help demonstrate that and make students comfortable nesting loops and statements, as well as combining their use to make more comlex, ore powerful code. |
| **Safety Approval Date:** |  |

Please identify specific safety hazards in the table below

|  |  |  |
| --- | --- | --- |
| **Check if applicable** | **Hazard** | **Why is this required?** |
| x | Electricity | Used to power Raspberry PIs |
|  | Open Flame |  |
|  | Projectiles |  |
|  | Natural Gas |  |
|  | Compressed Air |  |
|  | Glassware |  |
|  | Dissection Equipment |  |
|  | Biological Material/Specimen |  |
|  | Chemicals |  |
|  | Tools (ex. soldering iron, hacksaw, drill)  **Please specify in the materials list** |  |
|  | Other: |  |

­­­­­­­

Safety Materials/P.P.E. Required for this Activity

|  |  |  |
| --- | --- | --- |
| **Check if Required** | **Safety Material/Personal Protective Equipment (P.P.E.)** | **Explanation (Specify when this is required i.e. is this during preparation and/or while the activity is taking place and who wears/uses the piece of P.P.E. i.e. Instructor, student etc. please be explicit)** |
|  | Goggles |  |
|  | Lab Coats |  |
|  | Nitrile Gloves |  |
|  | Table Coverings |  |
|  | Fume hoods |  |
|  | Biosafety Cabinets |  |
|  | Spill Kits |  |
|  | Disposal Mechanisms (ex. broken glass, biologics, chemicals) |  |
|  | N95 Masks |  |
|  | Other: |  |

**Background Information:** (Outline any information that would be required to support the activity. Assume the person reading this Activity Write-Up isn’t a specialist on this topic.)

**Nesting**

Nesting is a term used when a loop/statement contains another loop/statement of the same kind. For instance, to check for a series of conditions, you might want to write code with nested if statements:

if homework\_done

if broccoli\_eaten

if room\_clean

print “Well done! You can go play with friend snow!”

else

print “No going out for you, there’s still plenty of work to do!”

You can also nest loops within each other. E.g.: this code still prints students’ names and birthdays, but this time dealing with multiple classes of students

while num\_classes > 0

for class in classes

for student in class

print student.name

print student.birthday

num\_classes = num\_classes – 1

**Combining loops and if statements**

Sometimes you might need to combine nested loops and nested if/else statements to solve a coding problem. For instance, if we want to print out the birthdays of only the girls in the class, we need to put in a conditional (an if statement) into our for loop that we have seen in a previous example:

for student in class

if student.gender = F

print student.name

print student.birthday

**Preparation:** (Outline any preparation work that must be completed by you and/or anyone else (lab techs, volunteers, etc.) prior to class time. Please be as detailed as possible, and highlight any health and safety protocols to be followed.)

Raspberry PIs must be set up for coding with the screens, keyboards, and mice connected. Printouts of the instructions must be made.

**Procedure:** (Please detail **all** the steps required to complete this project/activity. State what will be done by instructor(s), counselor(s) i.e. certain steps, entire demonstration, etc. and what will be done by your students. Outline any Safety procedures required due to location/venue of activity.)

1. Provide the students with the following instructions: again, expanding on our annoying parent code, we will make the annoying parent be more or less annoying depending on certain factors:

* how long it has been since they last annoyed you/checked up on you: now the parent will not check in on you every 1 minute, but every 1-5 minutes instead (this will be done by randomly picking the time using the random function). If it has been a long time since the parent last annoyed you, they will be more annoying – i.e. ask more questions about whether you’ve done more of the tasks you had to do. If it has been a relatively short time since they last annoyed you, they will ask less questions and be less annoying.
* whether or not you have accomplished any tasks since they last annoyed you: if the annoying parent asks you if you’ve done anything and you answer saying you’ve finished some tasks, next time around they will be less annoying.

Use nested loops and if statements to implement these two factors in your annoying parent code!

(Hint: if students are having trouble, do one of the above as an example. Doing pseudo code might help, but it might be too close to actual code to be useful – Python looks like pseudo code because it’s very simple.)

**Diagrams or any supplemental information (attach/embed if applicable):**

**Curriculum Connection (Optional)**

**Additional/Extension Activities & Procedure (if applicable):**

* Students who are ahead of the class can come up with other attributes of the annoying parents, such as other factors that determine how annoying they are (e.g. more annoying if you’ve been watching TV/playing computer games for a long time, less annoying if you haven’t)

**Student Take Home/Materials Kept:**

**None**

Materials **(Please include all materials including consumable items, tools, stationery, arts & craft supplies, chemicals, biologics, etc.).** Please identify (in the notes column) any hazardous materials PRODUCED as a result of the project/activity.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Item** | **Quantity** | **Purpose in Activity** | **Route of Transmission** | **Anticipated Health Risk** | **Safety Precautions** | **Storage/Disposal Arrangements** | **Notes** |
| Raspberry Pi | 1 per student | Programming |  | Tripping on power cords | Cable organization, tape cables to floor if necessary |  |  |

Use the below chart to inform how you fill out various sections of your Activity Safety Sheet.

|  |  |  |  |
| --- | --- | --- | --- |
| Anticipated Health Risks (Use the following relevant descriptions in the materials table) | | Safety Precautions (Use these and other descriptions the show how you will specifically address each of the safety precautions mentioned on the left side of this table.) | |
| 1 | Materials are sharp and may cut skin (Utility Knives, Scalpels, Scissors) | 1 | Instructors will advise on the appropriate use of materials (for 1-10 above) |
| 2 | Materials may poke or pierce skin (Wooden Skewers, Sticks) | 2 | Instructors will review the MSDS for materials prior to and during the activity (3-8) |
| 3 | Materials are toxic if ingested (Chemicals such as Bleach, Detergents, Indicators) | 3 | Participants will wear dust or N95 masks at all times (4 and 5) |
| 4 | Materials are hazardous if inhaled (Chemicals, Powders, Dust, Solder) | 4 | Participants will wear nitrile gloves at all times (6) |
| 5 | Materials are an irritant to lungs (Chemicals, Powders, Dust) | 5 | Participants will wear goggles at all times (7) |
| 6 | Materials are an irritant to skin (Chemicals, some Soaps, Allergens) | 6 | Students will be instructed on the use of the eye station in-lab (7) |
| 7 | Materials are an irritant to eyes (Chemicals, Powders, Dust) | 7 | Instructors will have a fire extinguisher within arm’s reach while performing activity (8) |
| 8 | Materials are flammable/Use of Open Flame (Alcohol, Gases, Fuels, Matches) | 8 | Instructors will establish a safety perimeter of 5m while performing the activity/during testing (8 and 10) |
| 9 | Participants may present serious allergies (Nuts, Shellfish, Milk, Eggs, Fruits, Food Colouring) | 9 | Instructors will review student allergies prior to commencing activity (9) |
| 10 | Materials are or can be involved as projectiles (Rocks, Golf Balls, Rockets) | 10 | Instructors will advise of any hidden allergens (9) |
| 11 | Materials present a slipping hazard if spilled | 11 | Instructors will monitor participants for indications of an allergic reaction (9) |
| 12 | Materials are hot and may burn skin. (glue guns, soldering irons) | 12 | Instructors will review the procedure with students, prior to testing (1-10) |
|  |  | 13 | Instructors will explain any necessary emergency protocol (always) |
|  |  | 14 | Instructors will debrief and discuss any sensitive issues before, during and after the activity (always) |
|  |  | 15 | Only Instructors with training will complete the specified activity or demo always. |
|  |  | 16 | Spill Clean up kit provided (11) |
| Routes of Transmission | | Questions to ask about your Materials and Activity (Address any that are relevant in your above Activity Safety Sheet) | |
| 1 | Eyes | 1 | Are there any ethical concerns regarding your workshop? |
| 2 | Skin contact | 2 | Are there any sensitive issues or activities? |
| 3 | Inhalation | 3 | Are there safety concerns if specific procedures are not followed? |
| 4 | Ingestion | 4 | Do any of the materials have an MSDS? |
| 5 | Other (please specify) | 5 | Do any of the materials or activities require special training? |
|  |  | 6 | Questions to ask about your Materials and Activity (Address any that are relevant in your above Activity Safety Sheet) |