CRTC
CONCORD REGIONAL
TECHNICAL CENTER

2017 - 2018 Q2 SPUR

COMPUTER ENGINEERING

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BE PREPARED TO STAND OUT!

Q2 COMPETENCIES

2. Understand the fundamentals of programming languages that are critical to the creation of methods and the concept of structured programming

Required Learning:

8. Discuss and demonstrate the program creation process including the concepts of source code, object-oriented code, and executable code.
9. Demonstrate the ability to write computer programs using both compiled and interpreted programming languages.
10. Discuss and apply fundamental concepts of programming language. (i.e.: Data types, memory models, data structures, etc.)
11. Demonstrate and use a variety of software development tools for program implementation
12. Write computer programs utilizing the structured programming paradigm.
13. Write computer programs utilizing the object oriented programming paradigm.
14. Write programs using modularization techniques to reduce program complexity and improve program maintainability

Extended Learning:

15. Discuss and demonstrate the fundamental level of object oriented design principles including the use of classes and objects in the context of program design.
16. Discuss and demonstrate the fundamental level of instantiation, encapsulation, inheritance, and polymorphism as it applies to object oriented program design.
17. Write a program that involves the design and implementation of a custom class.
18. Discuss and demonstrate the relationship between class definition and a class implementation.

Q2 COMPETENCIES

Mastery Level: ***1*** ***1.5*** ***2*** ***2.5*** ***3*** ***3.5*** ***4***

Competency 2: Fundamentals of Object-Oriented Programming in Python

Write a brief self-evaluation summary below to justify your mastery level 'score' for Competency #2. Specifically focus on attributes 8 through 14. You may also speak to attributes 15 through 18 but they will be covered more in Q3.

I believe I was at a level 4 mastery for Competency two. I had experience before this lesson and showed it when I worked in class. When other kids were going "How do you even do that?" I was already started with a few methods on my mind. I knew what to use and were and would even explain it to others so they could understand. In most cases I used every technique I knew to write short and efficient code and would even show others more efficient coding habits and methods.

Provide at least two evidence links (to documents or screenshots) for Competency 2 here.

- https://docs.google.com/document/d/1gEWabm7ZUEDm8txrZOdximvUh6rgkka68rOwIcjgo1U/edit
- https://repl.it/@xegion/Random-Path-Generator-v40

Q2 COMPETENCIES

3. Understand event handling and user interaction in order to understand data flow and control.

Required Learning:

19. Write programs that use events to cause program execution to react to the event by writing appropriate event handler code.
20. Write programs that use a graphical user interface to provide user interaction with a program.(text-based languages, i.e. Python, ~~MFC, AWT~~, ~~HTML, CSS~~)
21. Discuss and develop a good user interface design.
22. Conduct usability testing of software.
25. Discuss and demonstrate the different file formats and structures.

Extended Learning:

23. Write programs that access external data files.
24. Write programs that input from and output to external devices.

Q2 COMPETENCIES

Mastery Level: ***1*** ***1.5*** ***2*** ***2.5*** ***3*** ***3.5*** ***4***

Competency 3: Event Handling and User Interaction in Python

Write a brief self-evaluation summary below to justify your mastery level 'score' for Competency #3. Specifically focus on attributes 19 through 22 and 25. You may also speak to attributes 23 & 24 but they will be covered more in Q3.

I think that I am at a level 4 mastery of this competency because I've done a lot of testing with user interaction and graphics especially with Python and know what works and what doesn't. I've also done a lot of debugging and can solve issues relatively quickly or may even know how to fix errors off the top of my head. I had a lot of people coming to me to ask if I can look at their code and tell them what they did wrong. I also know the difference between different file formats and their advantages and disadvantages. For example how a PNG image saves each individual pixel but a JPEG combines pixels that are next to each other that are similar in color or blend well.

Provide at least one evidence link (to a document or screenshot) for Competency 3 here.

- https://docs.google.com/document/d/18Ev9jFAYEdaRIYYQap2WVqnBNwQL1E2tQWSpI_1RqEE/edit

Q2 COMPETENCIES

8. Understand the necessary employability skills in order to achieve success in today's workplace

Required Learning:

40. Decision-Making & Problem-Solving: Demonstrate and apply good decision-making and problem-solving skills by outlining issues in situations/problems and determining, collecting, and organizing information needed in order to formulate a solution.
41. Self –Management**:** Demonstrate and apply self-management skills by adhering to regulations, being responsible, and following through on commitments.
42. Communication Skills: Demonstrate and apply effective communication skills: verbal, written, visual, and listening.
43. Ability to Work with Others: Demonstrate and apply the necessary skills in order to work effectively with others.
    AAI 9. Personal Work Habits: Explain the work habits an employer looks for in an employee in this industry.
44. Information Use - Research, Analysis, Technology: Demonstrate and apply the use of information through research, analysis, and technology.
    AAI 5. Underlying Principles of Technology: Explain through discussion the technology.
45. Mathematical Concepts: Demonstrate mathematical and computation skills as applied to real world situations.
46. General Safety: Demonstrate and apply safe practices and procedures in the workplace.
    AAI 8. Health, Safety, and Environment: Explain the health and safety laws and practices affecting the employee, the surrounding community, and the environment in this industry.
47. Career Development: Demonstrate personal/career development skills by completing a career plan.

Q2 COMPETENCIES

Mastery Level: ***1*** ***1.5*** ***2*** ***2.5*** ***3*** ***3.5*** ***4***

Competency 8: Employability Skills

Write a brief self-evaluation summary below to justify your mastery level 'score' for Competency #8. Specifically focus on attributes 40 through 47. You should reference field trips, visitors, and the Interview Unit.

Provide at least two evidence links (to documents or screenshots) for Competency 8 here.

- https://docs.google.com/document/d/13mFRLFhdKtnjtz2X5fm1uaEzQMd_65vqnD271fvInY0/edit

Goal Setting - Development of Quarterly SMART goals

- Identifying specific short-term target goals
- Monitoring/Measuring progress toward the goals
- Documentation of steps taken toward the goals
- Regularly Reflect upon its relevance toward meeting CTE competencies
- Define new and/or revise previous goals quarterly

Write a brief self-evaluation that speaks to the Q2 Goals you set for yourself. Did you meet them? How? Or Why not?

Turn in work on time - I was a bit better about turning in work when it was due. Me and Gopal where ahead of the class at one point but I still turned in a bunch of stuff like a day late.

Be more aware of when CRTC work is due - I was a lot better about knowing when stuff was due but I would just forget to turn it in if it was homework.

Provide at least two goals to work on during Q3 here.

- Turn in work on time.
- Be better about remembering when homework is due.

Professional Skills: Rate yourself in each category according to how well you think you've met the rubric expectations. Then add a brief explanation for your rating.

Collaboration ***1 2 3 4***

Explain: I feel like I have a level 4 mastery in Collaboration because I always made sure that we worked as a team. Even though in groups I was the one that did most of the programming I still made sure that my partner was involved. Whether I told them what to type or typed it myself I always made sure that my partner understood what I was typing.

Communication ***1 2 3 4***

Explain: I feel like I have a level 4 mastery in Communication because I was always talking to my partner in a productive manner. As I mentioned in the previous competency I made sure that my partner understood what I was typing and I even showed examples to make sure they understood the material.

Inventiveness ***1 2 3 4***

Explain: I feel like I have a level 4 mastery in Inventiveness because I've gone and written my program different when ever I had the chance. The game we are making is a great example of this. Where every group mostly has a defined path using different objects to move too. My method allows the player to choose where ever in the room they want t o go.

Self-Direction ***1 2 3 4***

Explain: I feel like I have a level 4 mastery in Self-Direction because even though I got all my classwork done in a timely manner. I still struggled with getting all of my homework in on time and finished.

Q&A - Input is suggested, but not required

What questions do you have for me?

What can I do to improve?

What can you do to help yourself, me, or your peers improve?

Other comments?