Fundamentals of Computer Science

Subject: Career and Technical Education
Grade: 09
Expectations: 39
Breakouts: 97

(a) Introduction.

  1. Career and technical education instruction provides content a81k8.5 (pr)-.en(n)6263.50i -2.066 202 Tc 1.036 0 T 202 T-3.

(B) examine the role of certifications, resumes, and portfolios in the computer science profession;

    (i)   examine the role of certifications in the computer science profession

    (ii)   examine the role of resumes in the computer science profession

    (iii)   examine the role of portfolios in the computer science profession

(C) employ effective technical reading and writing skills;

    (i)   employ effective technical reading skills

    (ii)   employ effective technical writing skills

(D) employ effective verbal and nonverbal communication skills;

    (i)   employ effective verbal communication skills

    (ii)   employ effective nonverbal communication skills

(E) solve problems and think critically;

    (i)   solve problems

    (ii)   think critically

(F) demonstrate leadership skills and function effectively as a team member;

    (i)   demonstrate leadership skills

    (ii)

(C) discuss methods and create and publish web pages using a web-based language such as HTML, Java Script, or XML; and

    (i)   discuss methods [of] using a web-based language

    (ii)   create web pages using a web-based language

    (iii)   publish web pages using a web-based language

(D) use generally accepted design standards for spacing, fonts, and color schemes to create functional user interfaces including static and interactive screens.

    (i)   use generally accepted design standards for spacing to create functional user interfaces, including static screens

    (ii)   use generally accepted design standards for spacing to create functional user interfaces, including interactive screens

    (iii)   use generally accepted design standards for fonts to create functional user interfaces, including static screens

    (iv)   use generally accepted design standards for fonts to create functional user interfaces, including interactive screens

    (v)   use generally accepted design standards for color schemes to create functional user interfaces, including static screens

    (vi)   use generally accepted design standards for color schemes to create functional user interfaces, including interactive screens

(3) Communication and collaboration. The student communicates and collaborates with peers to contribute to his or her own learning and the learning of others. The student is expected to:

(A) seek and respond to advice or feedback from peers, educators, or professionals when evaluating problem solutions;

    (i)

(B) communicate an understanding of binary representation of data in computer systems, perform conversions between decimal and binary number systems, and count in binary number systems;

  (i) communicate an understanding of binary representation of data in computer systems

  (ii) perform conversions between decimal and binary number systems

  (iii) count in binary number systems

(C) identify a problem's description, purpose, and goals;

  (i) identify a problem's description

  (ii) identify a problem's purpose

  (iii) identify a problem's goals

(D) demonstrate coding proficiency in a programming language by developing solutions that create stories, games, and animations;

  (i) demonstrate coding proficiency in a programming language by developing solutions that create stories

  (ii) demonstrate coding proficiency in a programming language by developing solutions that create games

  (iii) demonstrate coding proficiency in a programming language by developing solutions that create animations

(E) identify and use the appropriate data type to properly represent the data in a program problem solution;

  (i) identify the appropriate data type to properly represent the data in a program problem solution

  (ii)

(I) communicate an understanding of and use conditional statements within a programmed story, game, or animation;

    (i) communicate an understanding of conditional statements within a programmed story, game, or animation

    (ii) use conditional statements within a programmed story, game, or animation

(J) communicate an understanding of and use iteration within a programmed story, game, or animation;

    (i)

(F) analyze how electronic media can affect reliability of information.

    (i)   analyze how electronic media can affect reliability of information

(6) Technology operations and concepts. The student understands technology concepts, systems, and operations as they apply to computer science. The student is expected to:

    (A) identify and explain the function of basic computer components, including a central processing unit (CPU), storage, and peripheral devices;

        (i)   identify the function of basic computer components, including a central processing unit (CPU)

        (ii)   identify the function of basic computer components, including storage devices

        (iii)   identify the function of basic computer components, including peripheral devices

        (iv)   explain the function of basic computer components, including a central processing unit (CPU)

        (v)   explain the function of basic computer components, including storage devices

        (vi)   explain the function of basic computer components, including peripheral devices

    (B) use system tools, including appropriate file management;