



Academic Program Assessment Report for AY 2023-2024

(Due: June 1, 2024)

Program: Computer Information Systems, B.S.

Date report completed: _____

Completed by: Kuang-Yuan Huang

Assessment contributors (other faculty involved): Dr. Roberto Mejias, Dr. Kuang-Yuan Huang, Dr. Yubo Fu, Dr. Roohid Syed

Please describe the 2023-2024 assessment activities and follow-up from prior years for your program below. Please complete this form for each undergraduate major, , and graduate program (e.g., B.A., B.S., B.A.S, M.S., DNP, etc.) as well as stand-alone minors, or certificates in your department. Please copy any addenda (e.g., rubrics) and paste them in this document, save and submit it to both the Dean of your college/school and to the Associate Provost as an email attachment by June 1, 2024. You'll also find this form on the assessment website at <https://www.csupueblo.edu/assessment-and-student-learning/resources.html>. Thank you.

Brief statement of Program mission and goals:

HSB Mission statement:

The mission of the Hasan School of Business at Colorado State University-Pueblo is "We transform students, innovate in teaching, conduct ourselves with professionalism, and engage with and positively impact our stakeholders."

- Transform: We welcome students from a broad spectrum, including many from lower socio-economic strata, under-represented populations, and first generation students. The core of our mission is effecting positive change in our students so that they are prepared as business professionals.
- Innovation: We seek to improve and implement best practices. We also work to encourage innovation at our university and in regional business, government and non-profit organizations.
- Professionalism: We are recognized in the community for our professionalism. We hold ourselves to high performance standards of collegiality and ethical behavior. We seek to inspire the same in our students.
- Engagement: We connect with students, alumni, employers, community members and other stakeholders to work together and to share knowledge. We build student skills through active learning, experiential education, and collaborations with businesses and community members.
- Impact: We make ongoing campus and community contributions through a variety of service activities. Our research has positive effects on organizational knowledge and practice. Graduates of the Hasan School of Business are a critical component of Pueblo's economic infrastructure, while many make contributions in other cities, states, and countries.

Goals for Computer Information Systems Majors

At the conclusion of the CIS program, students will demonstrate the ability to:

1. Analyze, design, implement, and maintain an information system.
 - 1a. Analyze problems and design information system solutions to the problems
 - 1b. Implement and maintain information system solutions
2. Communicate clearly and effectively in writing and speaking.
 - 2a. Use and Produce high quality written communication
 - 2b. Effectively use oral communication
3. Work effectively as a team member for a common purpose.
 - 3a. Participate effectively in planning, executing, and delivering team projects
4. Identify ethical issues and provide alternatives or solutions.
 - 4a. Identify ethical issues and recommend appropriate solutions

I. Assessment of Student Learning Outcomes (SLOs) in this cycle. Including processes, results, and recommendations for improved student learning. Use Column H to describe improvements planned for 2023-2024 based on the assessment process.

A. Which of the program SLOs were assessed during this cycle? Please include the outcome(s) verbatim from the assessment plan.	B. When was this SLO <u>last</u> reported on prior to this cycle? (semester and year)	C. What method was used for assessing the SLO? Please include a copy of any rubrics used in the assessment process.	D. Who was assessed? Please fully describe the student group(s) and the number of students or artifacts involved (N).	E. What is the expected proficiency level and how many or what proportion of students should be at that level?	F. What were the results of the assessment? (Include the proportion of students meeting proficiency.)	G. What were the department's conclusions about student performance?	H. What changes/improvements to the <u>program</u> are planned based on this assessment?
Fall 2023: SLO 1a – Analyze problems and design information system	Fall 2021: CIS315 Linux Fundamentals	Direct measure: Students were asked to design and create a	17 students from CIS315 Linux Fundamentals , a CIS core course.	We expect that at least 80% of the students either meet or exceed	82% of students evaluated met either “exceeds expectations” or “meets expectations.”	82% of students evaluated met either “exceeds expectations” or “meets expectations.”	Since the result exceeds the expected proficiency level of 80%, no additional action is needed at this time.

solutions to the problems (CIS315 Linux Fundamentals)		flowchart based on a given programming problem		expectation (Need improvement , meet expectation, and exceed expectation, are the three achievement levels from low to high).		This is higher than the result of the previous assessment in 2021 (77.3% of the students met or exceeded expectations.)	
Fall 2023: SLO 1b – Implement and maintain information system solutions (CIS315 Linux Fundamentals)	Fall 2021: CIS315 Linux Fundamentals	Direct measure: Students were given a programming assignment to solve a problem using shell script	17 students from CIS315 Linux Fundamentals , a CIS core course.		100% of students evaluated met either “exceeds expectations” or “meets expectations.”	100% of students evaluated met either “exceeds expectations” or “meets expectations.” This is much higher than the result of the previous assessment in 2021 (77.3% of the students met or exceeded expectations.)	Since the result exceeds the expected proficiency level of 80%, no additional action is needed at this time.
Spring 2024: SLO 2b – Effectively use oral communication (CIS460 Cyber Security & Defense)	Spring 2022: CIS432 Senior Professional Project	Direct measure: Students were asked to conduct TVA (Threat Vulnerability Asset)	15 students from CIS460 Cyber Security & Defense		80% of students evaluated met either “exceeds expectations” or “meets expectations.”	80% of students evaluated met either “exceeds expectations” or “meets expectations.” This is higher than the result	Since the result meets the expected proficiency level of 80%, no additional action is needed at this time.

		analysis on local businesses and present their findings.				of the previous assessment in 2022 (75% of the students met or exceeded expectations.)	
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Comments on part I reporting:

In AY 2021-2022, we assessed SLO 1 (1a, 1b) and SLO 2b:

SLO 1: Analyze, design, implement, and maintain an information system.

1a. Analyze problems and design information system solutions to the problems

➔ A flowchart design assignment for assessing student problem analysis and design skills were given to 17 students of CIS 315 (Linux Fundamentals). The assignment instruction and evaluation rubrics are provided in appendix I.

1b. Implement and maintain information system solutions

➔ A programming assignment for assessing student system implementation and maintenance skills were given to 17 students of CIS 315 (Linux Fundamentals). The assignment instruction and evaluation rubrics are provided in appendix I.

SLO 2: Communicate clearly and effectively in writing and speaking.

2b. Effectively use oral communication

➔ Students' oral communication skills were assessed through their final team project presentation (CIS460 Cyber Security & Defense). Each student was assessed individually. The assignment instruction and evaluation rubrics are provided in appendix II.

The assessment results show:

1. SLO1a: **82%** of students evaluated met either "exceeds expectations" or "meets expectations".
2. SLO1b: **100%** of students evaluated met either "exceeds expectations" or "meets expectations".
3. SLO2b: **80%** of students evaluated met either "exceeds expectations" or "meets expectations".

The results indicate:

1. **SLO 1a:** 82% of the student evaluated either met or exceeded our expectations. Since the result exceeds the expected proficiency level of 80%, no additional action is needed at this time.
2. **SLO 1b:** 100% of the student evaluated either met or exceeded our expectations. Since the result exceeds the expected proficiency level of 80%, no additional action is needed at this time.
3. **SLO 2b:** 80% of the student evaluated either met or exceeded our expectations. Since the result meets the expected proficiency level of 80%, no additional action is needed at this time.

Future AoL plan:

- Assess the CIS SLO 2a (written communication) and SLO 3 (teamwork) in Fall 2024.
- Assess the CIS SLO 4 (Ethical awareness) in Spring 2025.

II. Closing the Loop. Describe at least one data-informed change to your curriculum during the 2023-2024 cycle. These are those that were based on, or implemented to address, the results of assessment from previous cycles.

A. What SLO(s) or other issues did you address in this cycle? Please include the outcome(s) verbatim from the assessment plan.	B. When was this SLO last assessed to generate the data which informed the change? Please indicate the semester and year.	C. What were the recommendations for change from the previous assessment column H and/or feedback?	D. How were the recommendations for change acted upon?	E. What were the results of the changes? If the changes were not effective, what are the next steps or the new recommendations?
CIS SLO2 Communicate clearly and effectively in writing and speaking – 2b: Effectively use	Spring 2022 (CIS432 Senior Professional Project)	75% of the students met or exceeded expectations. While it is lower than the expected result of 80% , the result is still at an acceptable level. Review the CIS curriculum map and identify	The result of the previous assessment (75%) was at an acceptable level. The recommendation was to monitor student demonstration of oral communication skills during the next assessment cycle. No new	80% of the student evaluated either met or exceeded our expectations. Since the result meets the expected proficiency level of 80%, no additional action is needed.

oral communication		courses that involve the training and assessment of written communication skills. In theses courses continue to monitor the student demonstration of these skills.	implementation or curriculum change was needed at that time. (If the result is still below the expected level of 80% during the subsequent assessment cycle, remediations will need to be implemented.)	
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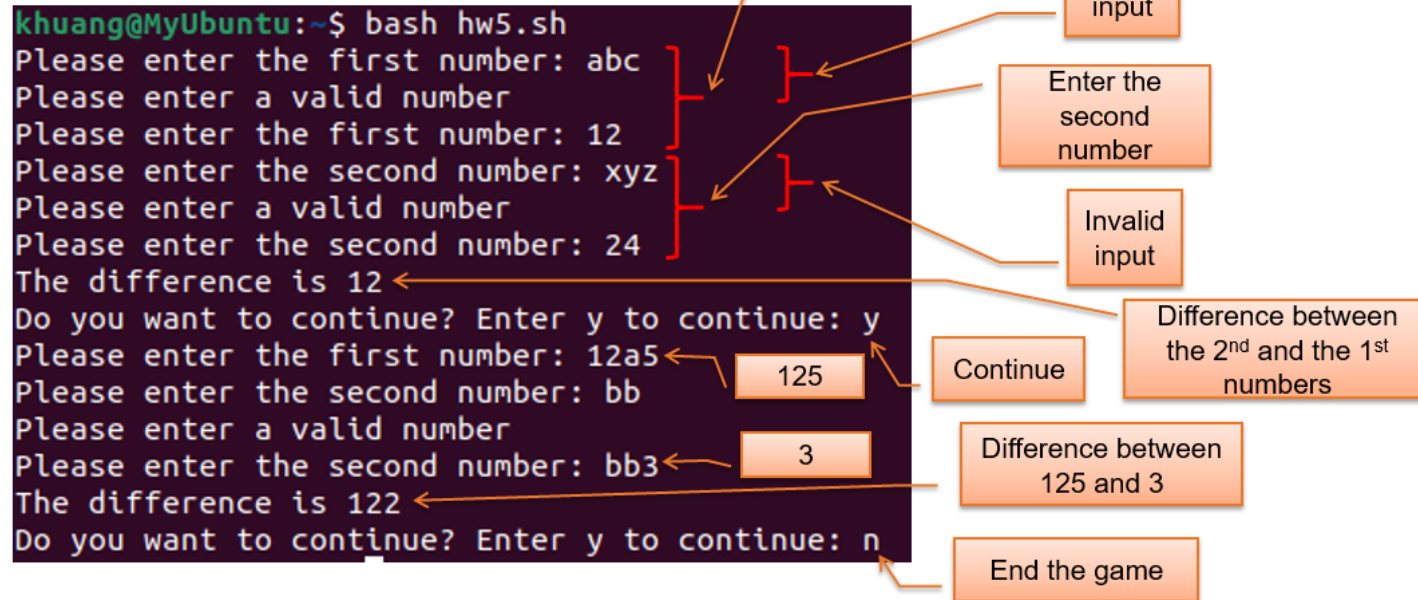
HW6 (in-class and take-home)

Due: 12/12 (Tue.) 12:59pm

Submit two files: hw6.sh and the flowchart

- Requirements:
 - Create a flowchart for it (2 points)
 - It takes two user inputs and save to two variables (1 points)
 - Prompt and read user inputs twice
 - It removes non-numeric characters from the two variables (1 point)
 - Use sed command
 - It uses while loop to do input validation (2 points)
 - If any variable stores an empty text after the sed command, ask the user to enter a valid number
 - The loop continues until the user entered a valid input
 - I suggest that you write two while loops to validate the two user-inputted values. Other approaches (such as using a function) are more complicated.
 - It outputs the result of subtracting the smaller number from the larger number (2 points)
 - If V1 is greater than V2, then output V1-V2. Otherwise, output V2-V1.
 - It will ask if you want to continue to play (2 points)
 - Use another while loop. For example, if the user presses "y", then continue the loop. Otherwise leave the loop and exit the execution
- You can copy and modify test2.sh for this assignment
- Discussing with others is permitted

Sample output



Rubrics for evaluating the CIS SLO 1a: Analyze and Design Information System solutions

Evaluation Criteria	Exceeds Expectations	Meets Expectations	Needs Improvement	Score
Analysis	Shows strong ability to identify what an Information System should do	Shows some ability to identify what an Information System should do	Often fails to identify what an Information System should do	
Design	Shows strong ability to identify how components of an Information System should be implemented and integrated	Shows some ability to identify how components of an Information System should be implemented	Often fails to identify how components of an Information System should be implemented	

Rubric for evaluating the CIS SLO 1b: Implement and Maintain Information System solutions

Evaluation Criteria	Exceeds Expectations	Meets Expectations	Needs Improvement	Score
Implementation and Maintenance	Shows strong ability to implement, test, debug, and deploy an error-free & completely functioning Information System	Shows some ability to implement, test, debug, and deploy implement an error-free & completely functioning Information System	Often fails to implement, test, debug, and deploy an error-free & completely functioning Information System	

Appendix II. CIS460 assignment instruction for assessing the CIS SLO 2b (Effectively use oral communication):
(Only the part of the instruction that is relevant to the final oral presentation is shown)

Grading of the TVA Team Project:

The team TVA project and related Milestones will constitute significant percentage of your overall course grade as indicated in your course syllabus. Your team will be expected to present a professional, well-prepared and informative presentation that provides interesting TVA insights for our class members and demonstrates a valuable learning experience in Cyber-defense for you as a team.

Confidential Peer Evaluations (-5 pts. if not submitted)

All team members will be given a “*Confidential Peer Evaluation*” sheet to evaluate the relative contribution of each member within your group. **Team members receiving negative peer evaluations will be penalized (-10) TVA project points per negative evaluation. (-5 pts. if not submitted)**

Additional Team Presentation Requirements

1. All TVA Project Milestones must have (as a cover sheet) their **Team Number**, **Team name** (if applicable) and names of all the team members **for each milestone submitted**. Milestones may be submitted late at 50% credit, but all milestone must be submitted regardless.
use at least 32 font size on your Presentations slides
2. All team class presentations must use a professional presentation software interface (e.g., MS Power Point, Prezi, etc©). Presentation should be between 20-25 slides maximum,
(Note; No “Final Project Paper” is required).
3. Presenting teams must prepare **handouts** or electronic copies (in PDF format) of their TVA project presentations for all student members! (**Double check with your organization to permit this dissemination**)
4. **A hard copy and electronic copy of your Team TVA project presentation should be transmitted to Dr. Mejias for posting on BB (-10 pts. if electronic copy not submitted).**

All Presentations MUST have the following information on their Cover Slide

- CIS 460-TVA Presentation + Company name
- Team Number,
- First, Last Names of Team Members *that contributed*

Rubrics for evaluating the CIS SLO 2b: Effectively use oral communication

Evaluation Criteria	Exceeds Expectations (3)	Meets Expectations (2)	Needs Improvement (1)	Score
Kinetics (Body Language)	<p>Presenter's body language and voice tone demonstrates high confidence and comfort with the subject matter.</p> <p>Presenter demonstrates high confidence, empathy and comfortable interaction with the audience.</p> <p>Presenter gestures are confident, relaxed and natural and match the content and purpose of the presentation.</p> <p>Presenter makes an excellent delivery with a voice that projects enthusiasm, interest and confidence.</p>	<p>Body language and voice tone reflect the presenter's relative comfort and command of the subject matter in interacting with the audience.</p> <p>Presenter uses appropriate gestures and body language that are somewhat confident.</p> <p>Presenter makes a good delivery with some level of confidence in body language and voice modulation.</p>	<p>Body language and voice tone reveal presenter's discomfort and lack of confidence with the subject matter.</p> <p>Presenter reveals a reluctance to interact with the audience.</p> <p>Presenter's body movement is terse and stiff.</p> <p>Presenter may appear fearful or highly nervous of his/her audience.</p> <p>Presenter's body language lacks confidence, and voice projection is often hard to understand.</p>	
Organization	<p>Presenter follows a very clear and logical sequence in their presentation that the audience can follow.</p> <p>Presenter focuses on the defined and critical points of the presentation and provides clear explanations for each point.</p> <p>Presenter provides clear and concise "takeaways" and conclusions for the audience.</p>	<p>Presenter follows a logical sequence in their presentation but does not provide any additional information.</p> <p>Presenter uses a "checklist" approach to the presentation material.</p> <p>Presentation structure is adequate and mechanical but lacks strong definition and emphasis.</p>	<p>Presenter offers no logical sequence of information.</p> <p>Presenter does not provide clear explanations and elaborations of the subject matter.</p> <p>Presenter fails to focus on the critical points of the presentation.</p> <p>Presenter does not provide clear and concise conclusions for the audience.</p>	

Subject Matter Knowledge	<p>Presenter clearly demonstrates excellent and in-depth knowledge and confidence with the subject matter.</p> <p>Presenter demonstrates a clear understanding of the details and interconnection links of the elements of the subject matter.</p> <p>Presenter clearly and thoroughly addresses questions from the audience regarding the subject matter.</p> <p>Presenter makes a professional and thorough analysis and presentation to the audience.</p>	<p>Presenter reflects a relative comfort with the subject matter.</p> <p>Presenter demonstrates a good understanding of the details and interaction of the elements of the subject matter.</p> <p>Presenter addresses and replies to most questions regarding the subject matter.</p>	<p>Presenter is unclear and not well informed with the subject matter.</p> <p>The presenter appears to be unsure and disorganized in their presentation of the subject material.</p> <p>Presenter may just be repeating facts without understanding details or interaction with other elements of the subject matter.</p> <p>Presenter cannot address basic questions regarding the subject matter.</p>	
Articulation (Delivery)	<p>Presenter speaks clearly and loudly enough and for all in audience to hear, at a comfortable rate, makes no grammatical errors, and pronounces all terms correctly and precisely.</p> <p>Presenter is enthusiastic and engaging.</p> <p>Presenter is extemporaneous and natural.</p>	<p>Presenter speaks clearly and loudly enough to be heard by most in audience, at an appropriate rate, (some/rare awkward pauses or halting delivery), makes few grammatical errors, and pronounces most terms correctly with fluid delivery overall.</p>	<p>Presenter mumbles, speaks too quietly to be heard by many in audience, mispronounces words, and makes serious and persistent grammatical errors throughout the presentation.</p> <p>Presenter loses train of thought and is tentative.</p>	
Content Clarity and Completeness	<p>Presenter handles all elements professionally.</p> <p>Presenter develops and supports ideas using well- chosen examples and creative details.</p>	<p>Presenter handles material competently and includes essential information, which is factually correct.</p>	<p>Presenter misses two or more essential elements.</p> <p>Presentation contains major factual errors and mis-representations.</p>	