CREATE 2B EXPLAINED

KEEP THE END IN MIND WHEN DEVELOPING YOUR APP

2B EXPLAINED

CREATE 2B

ROW 2 AND 3

Reporting Category	Task	Scoring Criteria	Decision Rules	Scoring Notes
Row 2 Developing a Program with a Purpose	RESPONSE 2B	• Describes or outlines steps used in the incremental and iterative development process to create the entire program.	**Do NOT award a point if any one of the following is true:** • the response only includes the process for determining the program idea and does not address the development process used to create the entire program; or • the response does not indicate iterative development; or refinement and revision are not connected to feedback, testing, or reflection; or • the response only describes the development at two specific points in time.	• Development processes are iterative and cyclical in nature and require students to reflect AND improve on what they have created. Examples of iterative development could include reflection, revision, testing and refining, and improvements based on feedback. • The incremental and iterative development process does not need to be a formal method such as waterfall, top — down, bottom-up, agile, etc.
Row 3 Developing a Program with a Purpose	RESPONSE 2B	• Specifically identifies at least two program development difficulties or opportunities. **AND** • Describes how the two identified difficulties or opportunities are resolved or incorporated.	• Response earns the point if it identifies two opportunities, or two difficulties, or one opportunity and one difficulty AND describes how each is resolved or incorporated. **Do NOT award a point if any one of the following is true:** • only one distinct difficulty or opportunity in the process is identified and described; or • the response does not describe how the difficulties or opportunities were resolved or incorporated.	

ROW 2 – YES OR NO (PART OF 2B RESPONSE)

Reporting Category	Task	Scoring Criteria	Decision Rules	Scoring Notes
Row 2 Developing a Program with a Purpose	RESPONSE 2B	• Describes or outlines steps used in the incremental and iterative development process to create the entire program.	**Do NOT award a point if any one of the following is true:** • the response only includes the process for determining the program idea and does not address the development process used to create the entire program; or • the response does not indicate iterative development; or • refinement and revision are not connected to feedback, testing, or reflection; or • the response only describes the development at two specific points in time.	• Development processes are iterative and cyclical in nature and require students to reflect AND improve on what they have created. Examples of iterative development could include reflection, revision, testing and refining, and improvements based on feedback. • The incremental and iterative development process does not need to be a formal method such as waterfall, top – down, bottom-up, agile, etc.

In your write up, you should have a short paragraph describing the developmental loop (interative process) See next slide

https://apcentral.collegeboard.org/pdf/ap-csp-create-performance-task-scoring-guidelines-2019.pdf

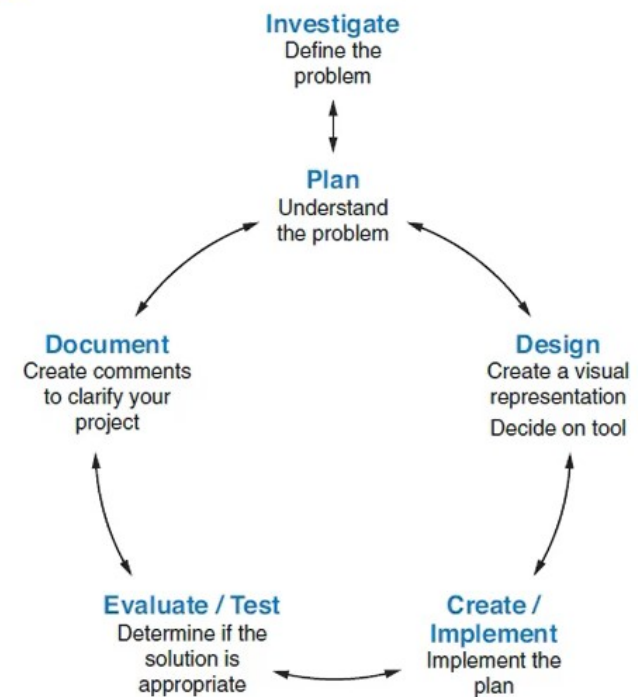# 2B "ITERATIVE AND CYCLICAL NATURE OF DEVELOPMENT"

The graphic shows the design process for creating a program.

In your paragraph, talk about

- Solutions you investigated to solve the problem
- How you planned your project (flow chart, storyboard, etc.)
- How you designed your code (what was your thought process) and how you coded (where is your library of functions in your program.)
- How you evaluated/tested your program and where you may have needed to go back to the design and recode parts of your program.

The elements listed above need not be implemented in linear order. Students may choose to return to earlier phases as their design ideas change and develop.

The following graphic illustrates the iterative and cyclical nature of a development process to plan and create computational artifacts.

Investigate
Define the problem

Plan
Understand the problem

Design
Create a visual representation
Decide on tool

Create / Implement
Implement the plan

Evaluate / Test
Determine if the solution is appropriate

Document
Create comments to clarify your project

2B "INCREMENTAL AND ITERATIVE AND CYCLICAL NATURE OF DEVELOPMENT"

When you describe the things for Evaluate and test, this is the part where you are showing your LOOPING (iterative process)

EXAMPLE: In testing, something didn't work

- Had to go back to the code and update the syntax or update a line of code or

- Realized you missed a step – your brain thought it was logical, but you didn't add it to your code

- You re-tested and now it works but now you have another idea to improve it

The elements listed above need not be implemented in linear order. Students may choose to return to earlier phases as their design ideas change and develop.

The following graphic illustrates the iterative and cyclical nature of a development process to plan and create computational artifacts.

Investigate
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Create / Implement
Implement the plan

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Determine if the solution is appropriate

Document
Create comments to clarify your project

Make sure you are commenting in your code // when you make changes, updates, or have reflective moments
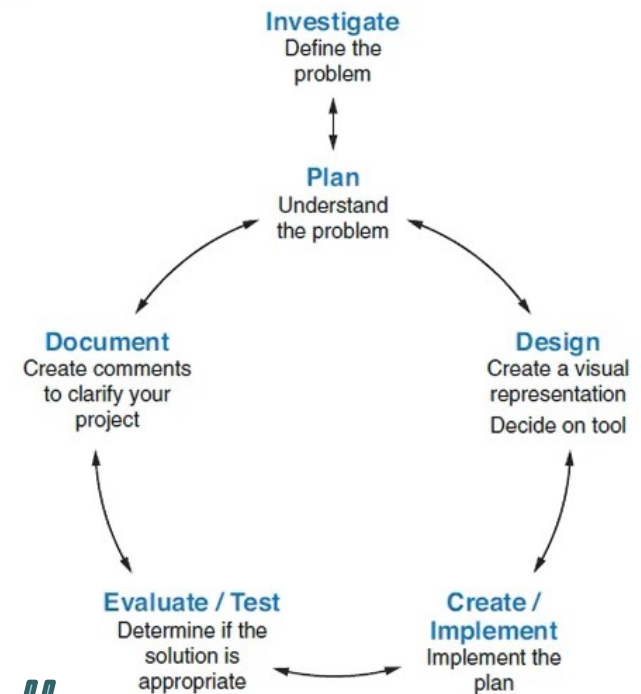
2B "INCREMENTAL AND ITERATIVE AND CYCLICAL NATURE OF DEVELOPMENT"

Your paragraph **SHOULD SHOW**

- your developmental process using the words Plan, Design, Create, Evaluate
- Your process of backtracking and updating your code to make it work better or flow more naturally

Your paragraph SHOULD **NOT** show a stream of consciousness that appears to show you are filling in the blanks and rambling (example: Monday, I did this, Tuesday, I talked to a friend about ___, etc.)

ROW 3 – YES OR NO (2B RESPONSE)

Reporting Category	Task	Scoring Criteria	Decision Rules	Scoring Notes
Row 3 Developing a Program with a Purpose	RESPONSE 2B	• Specifically identifies at least two program development difficulties or opportunities. **AND** • Describes how the two identified difficulties or opportunities are resolved or incorporated.	• Response earns the point if it identifies two opportunities, or two difficulties, or one opportunity and one difficulty AND describes how each is resolved or incorporated. **Do NOT award a point if any one of the following is true:** • only one distinct difficulty or opportunity in the process is identified and described; or • the response does not describe how the difficulties or opportunities were resolved or incorporated.	

You must show two (2) specific points in your development process where you are showing "difficulties" or "opportunities." This can be two difficulties **and** how you resolved them, two opportunities **and** how you incorporated them into your program or one of each.

You need to specifically describe how you incorporated these items into your code and the reasoning behind this.

https://apcentral.collegeboard.org/pdf/ap-csp-create-performance-task-scoring-guidelines-2019.pdf

ROW 3 – YES OR NO
WILL BE PART OF 2B TASK

Reporting Category	Task	Scoring Criteria	Decision Rules	Scoring Notes
Row 3 Developing a Program with a Purpose	RESPONSE 2B	• Specifically identifies at least two program development difficulties or opportunities. **AND** • Describes how the two identified difficulties or opportunities are resolved or incorporated.	• Response earns the point if it identifies two opportunities, or two difficulties, or one opportunity and one difficulty AND describes how each is resolved or incorporated. **Do NOT award a point if any one of the following is true:** • only one distinct difficulty or opportunity in the process is identified and described; or • the response does not describe how the difficulties or opportunities were resolved or incorporated.	

AVOID AVOID AVOID

Avoid making statements that are not <u>supported by reason/explanation</u> as to how you updated your code.
    Example: My scoring for this game didn't work, I watched a YOUTUBE video and I fixed it.

"I fixed it" does not give any indication of what was wrong and what you needed to do to fix it. (added a variable, updated the syntax, delete something that was a hindrance, added a new set of functions or procedures. Also, if you used YouTube, you need to cite this in your comments of your code.

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EXAMPLE OF 2B SHOWING THE PROCESS

2B **Disclaimer:** All code was made by me using jGrasp.

Development and Design Process: I began the process of making my guessing game by implementing a random number generator; in this case, randint. Then I added a way for the program to ask a user for a number, along with a series of if statements that compare this number to the computer-generated one; if the user's number is higher or lower than the computer's, the user is alerted of such. If the user is correct, a message is printed saying so and the game ends. However, afterward I realized that I wanted the user to be able to play again after winning. So, I placed all of the code in a **while** loop, and added a selection algorithm to the code that is run when the user is correct so that the loop is broken if the player doesn't want to play again. But if they do want to play again, I would need some way to reset the game. So I made a function, **resetGame()**, that resets all variables. I then added this function both to the beginning of the program and to the end, where the user selects to play again. I also wanted a way to count every 5 incorrect guesses and print how many incorrect guesses the user has made for each 5. To do this, I created a variable that is incremented by 1 each time the user's guess does not match the generated number. I added an if statement to the while loop that checks if this variable is divisible by 5; if it is, the number of incorrect guesses is printed.

Decision #1: One problem I faced while making my guessing game is that in the resetGame() function, I needed a way to directly modify global variables in order to reset them each time the game began. So, in order to do this I initialized all variables to None at the beginning of the script. Then, I import these variables into the resetGame() function using the **global** keyword, allowing me to directly change them within resetGame().

Decision #2: Another problem I faced while designing my guessing game is that I wanted to print a message saying how many incorrect guesses have been made whenever the amount of incorrect guesses is a multiple of 5. So, to do this, I added an if statement to the main while loop that checks to see that the amount of guesses the user has made is divisible by 5. If it is, a message along with the amount of incorrect guesses is printed.

Information from Create PT Prompt 2b, Rows 2-3 #Create_With_Code video,
by Jill Westelund, http://www.abstractingcs.com/ 2020

Notice how keywords as related to the grading prompt and functions are bolded

Keywords that need to be seen in your explanation:

Incremental   Development process

Iterative   Opportunity or Difficulty
                                    (or both)

Function (or state the function label you used)

OTHER HELPFUL Keywords:

Global and Local   Parent and Child