AP CSP Create Task

Programming Journal LogBook

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AP CS Principles

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Day 1 March 15, 2023 [Program Begin]:

❖ Today, I started working on the basic HTML structure for the number-guessing game. I began by creating the basic structure of the webpage using HTML. I added some metadata such as keywords, description, and author using meta tags.

❖ I created a title for the web page and added a favicon to it. Linking the CSS and JavaScript files was accomplished by using the link and script tags, respectively.

❖ Next, I created a section for the navigation links using the nav tag. Using an unordered list to list the navigational links, I was able to display text and hyperlink it to each of the navigational links.

❖ Along the way, CSS code was worked on to ensure a good appearance for the display on the webpage. The CSS code was responsible for styling the navigation menu bar. Specifically, areas such as its position, width, background color, font size, margin, and padding were changed. The original unordered list bullet style was changed to appear as squares and a different appearance was added for a "on hover " view.

❖ Lastly, a title/subtitle section was laid out using the header tag that will be filled in tomorrow.

❖ Day 1 saw no real programming struggles or issues.

Day 2 March 16, 2023:

❖ HTML code was further developed today by starting with the header section. It contained a centered logo image, followed by text, and a horizontal line.

❖ Additionally, the main tag was added, where a GIF was inserted to show moving images depicting aspects of the game. Initial div tags were drafted for future edits to the CSS program for further organization and aesthetics.

❖ Lastly, the first three lines of HTML code were written as the beginning of image map implementation.

❖ Day 2 contained mainly straightforward HTML coding and saw close to zero errors.

Day 3 March 17, 2023 [Progress Check #1]:

❖ Today, I completed the majority of the home page. I used the <map> tag to define the clickable areas of an image, using the <area> tag.

❖ Using the 'usemap' attribute, I added the map to the image.

❖ No programming errors resulted from today. Day 4 shall be used to begin the classic number-guessing game.

Day 4 March 20, 2023:

❖ New HTML code was added for the game difficulty selection on the classic number guessing game. The user can now click on a dropdown in order to recall the difficulty settings of the classic game.

❖ In order to enable functionality, I began JavaScript code to begin the game's logic. A function called 'difficulty()' was created today. The function's main purpose is to initialize the difficulty to an integer corresponding to the game difficulty and also output/display basic imaging and text depending on the user input choice of their desired difficulty. Using the setTimeout() method, aesthetics were added.

❖ CSS code was further developed today to ensure a high quality in appearance for the new HTML code added today.

❖ One slight program rose today, which was coming up with an effective way to include a parameter in the difficulty function. All the program was initially running smoothly, I wished to include a parameter on this function to ensure that at least one of my functions had a parameter. As I moved different pieces of my code around, I realized that I was simply overlooking this portion of the code and that I need to more effectively use my time in order to move past this initial difficulty aspect of my game and find a more appropriate time to incorporate a parameter in my function.

❖ A decision to only do one of the four games was made in order to have adequate time to do written responses and video requirements.

❖ Overall, decent progress was made and day 5 will be used to begin the random number generator the user will attempt to guess to and also game conditionals.

Day 5 March 20, 2023:

❖ Today was used to begin the classic number guessing game's game logic. I began by initializing a variable round to zero (0). This will later be used to determine how many rounds the user took in order to guess the correct number. Next, a random number was created within a certain range based on the difficulty the user selects.

❖ Basic conditionals were started today to determine whether or not the user guesses the correct number. A prompt display will appear corresponding to what happens in the game. To ensure the user does not

make the same guess multiple times, an array 'playerGuesses' was created to allow the previous user

guesses to be added to this array. A conditional if statement will then check to see whether or not the

player had already made this guess.

❖ The first programming issue that arose was with transfering what the user inputs into the textbox on the

webpage onto the javascript code. Instead of using the 'querySelector()' method, I switched over the

'getElementById()' method, which allowed the string data type to be carried over the JavaScript file and

be stored in the variable 'playerGuess'.

❖ Day 6 will be used to find a way to print out whether or not the user's secondary guess is getting closer

(warmer) or farther (colder) away from the random number.

Day 6 March 21, 2023:

In-class:

❖ In-class today, a function 'resetGame()' was created in order for the user to reset if the user wishes to

reset the game and play again. This was accomplished by using the 'location.reload()' method.

❖ Additionally, two new variables were created to add an objective to the game. The 'maxRounds' variable

was created in order to serve as the max limit of guesses, or attempts in order for the user to guess the

correct number. The variable is assigned to an integer value using conditionals based on what game

difficulty the user chooses. The second variable that was initialized was the 'pMoney' variable that will

be used to serve as the initial, starting amount of money the user begins with.

HW:

❖ New ideas for the classic number guessing game were developed today. New game objectives were thought of such as creating a giving the player more money depending on how few guesses they require. Additionally, a plan for developing a function with parameters was thought by creating a 'randomNum()' function that would use two parameters as a range, and would return a random number is that given range.

Day 7 March 22, 2023:

❖ Today, a function with parameters was created to generate a random number more efficiently. This was done by using the Math.Floor() & Math.Random() methods, and by passing the min and max values as a range through the function randomNumGenerator() as parameters. The use of a function here helped with code efficiency and allowed the program to be prevented from having repeated lines of code multiple times.

❖ The second thing accomplished today was beginning the prizes portion of the game. Some additional pseudo-code was laid out to help program the aspects of this function tomorrow.

Day 8 March 23, 2023:

❖ Today, a random number generator function was created.

❖ The function 'randomNumGenerator()' accepted two crucial parameters to properly run. The parameters 'rangeMin' and 'rangeMax' corresponded to the range in which the random number was generated. This function was necessary in order to make the program far more efficient and allowed quick accessibility to a random number for other key features that will be later coded.

❖ In addition to this, some refinement and edits were made to the 'prizes()' function. This function coded basic code about game prize cost, conditionals to check the player money against the prize cost, and basic output.

Day 9 March 24, 2023:

❖ Today was spent mainly on sound effects and creating game prizes.

❖ A 2D array 'sounds' was created in order to hold various paths to different sound effects. The sub-array was chosen based on the scenario that the sound effect was needed and the specific element of that particular sub-array was randomly selected from a random number. The use of a random number was incorporated because it allowed for the user to hear one of three different sound effects each time that game scenario occurred, preventing repetitive sounds.

❖ The 'prizes()' function was further developed through the addition of conditional 'if()' statements to produce customized outputs and variable assignments based on particular game scenarios that may exist. In this function, today I added new user prompts, allowing them to input the prize they desired. There were a few initial problems within these code segments, because the variables were not properly assigned and initialized, leading to an incorrect output (e.g. printing the user has $0). The 'pMoney' variable was subtracted from the money it took to buy the prize. This 'prizes()' function was called inside the 'playGame()' function initially using the 'setTimeout()' JavaScript method in order to amuse after five (5) seconds.

Day 10 March 27, 2023:

❖ Today, necessary CSS edits were made to ensure that the webpage output was a high quality output. CSS edits were made to specific IDs and general things such as buttons, labels, etc. Color, background-color, and size of specific things were the first priority.

❖ Additionally, today was a debugging and program examination day due to the game not running correctly. Debugging was accomplished through the use of simply printing out what variable assignments were on the console using 'console.log()'.

❖ The identified problem was excessive, new assignment to the 'randomNum' variable. This leads to a new random number being generated each time the user makes a guess, leading to an impossible game.

❖ This issue was resolved by declaring the 'randomNum' variable as a constant by preceding the variable name with 'const'.

Day 12 March 30, 2023 [Program End]:

❖ Today, three main tasks needed to be completed. Edits to the end game program, such as the 'prizes()' function, music selection updates, and finalized edits and display, through CSS edits.

❖ First, I removed the 'score()' function that was initially used to give assignment to the pMoney variable. Instead, now I directly ran that particular code prior to the calling of the 'prizes()' function. It was important to run these conditional 'if()' statements right before the 'prizes()' function call because they could give the variable holding player money an integer value.

❖ The second thing today was creating an option for the user to listen to background music while playing the game. A creative aspect in the code was needed, so including an option for the user to select a song

to listen to while playing seemed like a good idea. The output of the audio was similarly accomplished

to the sound effects previously programmed.

❖ Lastly, crucial last minute CSS edits were made in order to display an output in a good-looking manner.

The home page added a background song, and a dark mode feature was created through basic CSS edits

through JavaScript code.

❖ A video of the program was taken in order to capture the program's functionality, input, and output.

After making the JavaScript into a PDF file, the written responses were filled out accordingly.