AP Computer Science Principles Performance Task: Tate Museum Artworks

This performance task sets up an interactive program that allows users to explore artwork from the Tate Museum based on the year they were created. It starts with a home screen and transitions to an artwork information screen when the user presses start. The program retrieves artwork data from a dataset, filters the artwork based on the user's chosen year, and allows the user to navigate through the filtered artwork using left and right buttons. The reset button resets the displayed artwork screen, and the home button returns the user to the home screen.

```
//Sets up the initial screen
// When the user presses start, the program transitions from the home screen to the artwork info
setScreen("homeScreen");
onEvent("startButton", "click", function( ) {
  setScreen("Artworkinfo");
});

//Retrieves dataset variables from the Tate Museum Artworks dataset.
var artNames = getColumn("Tate Museum Artworks", "Artwork Title");
var years = getColumn("Tate Museum Artworks", "Year Created");
var artwork = getColumn("Tate Museum Artworks", "Artwork");

//Initializes variables for storing filtered artwork names and pictures.
//Sets the initial index.
var filteredArtNames = [];
var filteredArtPictures = [];
var index = 0;

//The search button is used to find the artwork that was created during the user's chosen year.
//The years variable is used to get input from the user on the artwork it wants from the chosen
//Based on this, the images are set with the appropriate index
onEvent("searchButton", "click", function( ) {
  index = 0;
  var Years = getNumber("Artworks");
  filterArtwork(Years);
});

//The user will be able to press the right button to see more pictures of art.
onEvent("rightButton", "click", function( ) {
  right();
});

//The left button allows users to go back to a certain image of an artwork.
onEvent("leftButton", "click", function( ) {
  left();
});

//The reset button resets the image, year, and name.
onEvent("Reset", "click", function( ) {
  reset();
});

//Filters artwork based on the provided year and updates the filtered lists.
//The function for filtering artworks is defined and has the parameter of year
//Filters out artworks created during that year.
//The conditional statements ensure that the list of artworks are within the range of the datase
//Year is a parameter for filtering artwork.
```

```javascript
function filterArtwork(year)
{
  filteredArtNames = [];
  filteredArtPictures = [];

  for(var i = 0; i < artNames.length; i++)
  {
    if(years[i] == year)
    {
      var currentArtName = (artNames[i]) ? artNames[i] : "Art Name Not Found";
      var currentArtWork = (artwork[i]) ? artwork[i] : "icon://fa-picture-o";
      appendItem(filteredArtNames, currentArtName);
      appendItem(filteredArtPictures, currentArtWork);
      setProperty("Artimage", "image", filteredArtPictures[index]);
      setText("ArtworkName", filteredArtNames[index]);
    }
  }

}

// The left function moves to the previous artwork in the filtered list and updates the display.
//When the index is greater than 0, it will decrease.
function left() {
  if(index !== 0){
    if(index > 0)
    {
      index --;
    }
    else
    {
      index = filteredArtNames.length - 1;
    }
    setProperty("Artimage", "image", filteredArtPictures[index]);
    setText("ArtworkName", filteredArtNames[index]);
  }
}

//The right function moves to the next artwork in the filtered list and updates the display.
//When the index is less than the size of the list, it will increase.
function right() {
  if(index !== filteredArtNames.length - 1){
    if(index < filteredArtNames.length - 1)
    {
      index ++;
    }
    else
    {
      index = 0;
    }
    setProperty("Artimage", "image", filteredArtPictures[index]);
    setText("ArtworkName", filteredArtNames[index]);
  }
}

//When the user clicks reset, the program will reset the image/year on the display.
// Therefore, the user can "play" again.
```

```
105   function reset() {
106     setText("ArtworkName", "Artwork Name");
107     setText("Artworks", "Select a year");
108     setImageURL("Artimage","https://studio.code.org/v3/assets/oxrhSIm4CFfEpUITKctzbVQbw_YnJ8fUl5Gh
109   }
110
111   // When the user clicks the home button, they will return to the homeScreen.
112   // They can press start if they want to play again.
113   onEvent("homeButton", "click", function( ) {
114     setScreen("homeScreen");
115     setText("ArtworkName", "Artwork Name");
116     setText("Artworks", "Select a year");
117     setImageURL("Artimage","https://studio.code.org/v3/assets/oxrhSIm4CFfEpUITKctzbVQbw_YnJ8fUl5Gh
118   });
119
120   // Creative Commons Licenses
121   // The following changes were made to the Tate Museum Artworks dataset:
122   //- Column: Webpage
123   //- Change: Replaced the webpages with images of artwork for all of the artworks
124   //- Change: Column (Webpage) was changed to Artwork
125   //- Change: When changing some of the website URL's to find images, it displayed 404 not found.
126   // - Change: Some years in the dataset had incomplete data. Therefore, I chose to not include it
127   //Tate Museum Artworks is licensed under CC BY-NC-SA 4.0
        // https://creativecommons.org/licenses/by-nc-sa/4.0/
```

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