BREAKPOINT CODING PRACTICE

Working with Collections

ARRAYS

You are back in high school. Another year is about to start, and you are excited to see your three best friends.

- Create a string array that will store the names of three people.
- Populate that array with the names of your three best friends.
    - If you don't have three friends, make some up.
- Loop through the array and display a greeting to each of your friends.

You want to make sure that you don't have lunch with any want you don't like, so you create a "lunch buddy" list. The table seats eight people, and you want every seat taken.

- Create another string array to store the names of 8 people
- This array will hold the names of 8 people you would like to have lunch with
- Add your best friends to this new array and populate the remaining elements with five other names.
- Display a lunch invitation to each person informing them how many people are on the list

You need to make sure you maintain an average test score of 80. Otherwise, you'll be grounded.

- Create an empty array that will store ten test scores
- Use the Console window to populate the test scores
- Display the average grade in the Console window

LISTS

You have graduated from school and gotten a job as a Software Developer. You are going to celebrate by having a party.

- Create a list to store your guest list
- Populate your list with some guests
- Loop through your list to display an invitation message

You've decided to rent a hall and have a bigger party, but you can't think of anyone else to invite.

- Write the code that will let the user invite five more people to your party.
- Display the new guest list
- Five additional guests were too many, and you have exceeded the room limit. Allow the user to uninvite any two guests by name.
  - If the same name shows up twice on the list, remove the one that was entered last.

The hall caught on fire two weeks before your event. Now you have to cut your guest list in half.

- Write the code that will reduce your list in half by uninviting people the people that were invited last.
- Create a "waiting list" and put the people you are removing onto the waiting list
- Display a message to those guests, explaining what happened. Tell them what number they are on the waiting list and the total number of people on the list.

Now that you have your guest list, you want to know how much money they are going to gift you.

- Display a message asking each guest how much they are going to give.
- Store those amounts in another list.
- Display a message with the total amount you are expecting to receive.

DICTIONARIES

You have been working for several years now, and that office romance has finally turned into an engagement. It's time to start planning for the wedding. You need a venue for the reception, but after the last event planning ended in flames, you decide to research some options.

- Create a dictionary that will store the name of the venue as well as the number of guests it can accommodate.
- Populate the dictionary however you desire
- Display the list to your spouse-to-be and allow them to add new venues or remove ones they don't like.

Once you have selected the venue, it's time to start building the music list. Before you start selecting every song you belt out in the shower, you should ask your spouse to be for a list of their preferred music styles, so you don't upset them with your choices.

- Ask your spouse to populate a list of music genres that are permitted for the reception.
- Also, ask them for a list of forbidden songs.
- Create a dictionary that will store the song's name and genre.
- Use the Console window to populate the dictionary, make sure the genre is approved, and the song is not forbidden.
- All your spouse to select a music genre and display the songs you have entered for that genre

Now that you have the essential aspects of the wedding figured out, it's time to get to more important matters. What's the plan for the bachelor/bachelorette party? You don't trust your friend that should be planning this ever since the Minnesota beach party in January.

- Create a dictionary to store a list of locations and the number of votes that the location receives.
- Populate the dictionary with five locations from which to choose.
- Do the same thing to vote for the activity of choice. Populating five of your favorite activities
- Display the choices to your friends in the Console window and let them vote on the location and activity.
- Update the dictionary every time a vote is cast.
- Display the resulting information once all votes are cast to see where you will be going and what you will be doing.

STACKS

The wedding is approaching fast. You have just spent several hours socializing with a bunch of your mom's coworkers that you have never met before at the bridal shower. Before your mother leaves, she kindly reminds you that you should fill out your thank you cards in the order of gift expense. Those that spent the most should be thanked first. You don't see how that matters since all the Thank You cards get mailed the same day, but you decided not to argue the point. Instead, you write an application to help you out.

- Create a stack collection that will let you store the gifts you received
- Populate the collection with the list expensive gift to the most expensive
- Loop through the collection displaying the gifts from most expensive to least.

The wedding is tomorrow, so today it's all about rehearsals. Your avid gamer friends in the wedding party were up late playing the latest release. They didn't pay too much attention to the order they were supposed to enter and exit the ceremony. To help them out, you are going to write an app for their phone. You need to make sure they understand that the first members of the wedding party are the last to leave.

- Create a Stack collection that will simulate the order of the wedding procession.
- Enter the names of the wedding party in the order they will be walking down the aisle
- Since a Stack is a Last In First Out collection, your application will easily be able to display the reverse order in which the wedding party will exit the wedding.

QUEUES

The big day is finally here, and everyone is excited to attend the reception. It seems that your entire wedding party wants to give a toast during dinner. Seeing the five pages the best man is carrying around, you fear that there won't be enough time for everyone to speak. You decide to solve this problem the way you always do by writing some software. You explain to your wedding party that you will create an app to list the toasts by priority. When dinner is over, the time for toasts ends.

- Create a queue collection to store the names of wedding party members
- Populate the collection in the order of importance (maid of honor, best man, etc.)
- Use the console window to display who the next toast giver is every time the enter key is pressed.

Your mother got a glimpse of the application you created for your wedding party toasts and would like you to create something similar for the "dollar dance." She wants to make sure her business associates are in the front of this list since they will be "more generous than family."

- Create a queue collection to store the names of wedding quests
- Allow your mother to populate the collection with the order she deems appropriate.
- Allow her to navigate through the collection with the click of a button.