



# Team Packet

# Visual Basic Problems



## **Visual Basic Problems**

Coffee or Tea ~ 10 points

AMC Hampton Town Centre 24 Theater ~ 20 points

Connect the Dots ~ 20 points

Crossword Tree ~ 30 points



## **Coffee or Tea (10 points)**

*(not the same as last year)*

1. Create a project with a single form
2. The title “Coffee or Tea” should appear both in the title bar of the form and as a title centered horizontally and vertically on the form.
3. Elsewhere on the form, place three command buttons:
  - a) The first button, when clicked, invokes a common dialog box to change the font of the title. When the font of the title changes, the title should be recentered horizontally and vertically.
  - b) The second button, when clicked, invokes a common dialog box to change the background color of the form.
  - c) The third button, when clicked, displays an Input Box that will ask the user if they would prefer coffee or tea. Set a default value of "Coffee", the icon to a question mark, and position the Input Box in the upper left hand corner of the screen.
    - If the user responds correctly with either coffee or tea,
      - A message box with a question mark icon and three buttons (yes, no, and cancel) should be displayed reading, “Would you like crumpets with your coffee?” (or tea if they chose tea). The yes button should be the default button.
        - If the user clicks yes, a message box with an information icon and a single OK button should be displayed informing the user that their coffee (or tea if they chose tea) and crumpets will be ready in ten minutes.
        - If the user clicks no, a message box with an information icon and with a single OK button should be displayed informing the user that their coffee (or tea if they chose tea) will be ready in five minutes.
        - If the user clicks cancel, a message box with an exclamation mark icon and a single OK button should be displayed informing the user that their order for coffee (or tea if they chose tea) has been canceled.
    - If the user response (for coffee or tea) is incorrect, the input box should be redisplayed.
    - This process should continue until a correct response is obtained.



## AMC Hampton Town Centre 24 (20 points)

The AMC Hampton Town Centre 24 Theater, Hampton, Virginia listed the following movies and showtimes for Sunday, February 8, 2004. Note this is an abridged list of only 10 movies, so you won't have to spend your entire contest time typing in data.

Movie Title	Genre	Rating	Showtimes
Barbershop 2	Comedy	PG-13	12:30, 1:00, 1:30, 2:10, 3:00, 3:30, 4:00, 5:00, 5:40, 6:20, 7:00, 7:40, 8:20, 9:00, 9:40, 10:20
Catch That Kid	Action	PG	12:30, 1:30, 2:40, 4:10, 5:10, 7:00, 9:20
Cold Mountain	Drama	R	1:50, 5:10, 8:30
Girl with a Pearl Earring	Drama	PG-13	12:40, 3:10, 5:30, 7:50, 10:10
Master and Commander: The Far Side of the World	Action	PG-13	1:40, 7:20
Miracle	Drama	PG	12:30, 1:50, 3:30, 5:00, 6:40, 8:00, 9:40
Monster	Drama	R	2:00, 4:50, 7:30, 10:00
Something's Gotta Give	Romance	PG-13	1:20, 4:10, 7:10, 9:50
The Butterfly Effect	Thriller	R	1:20, 4:10, 7:00, 7:40, 9:30, 10:20
The Lord of the Rings: The Return of the King	Action	PG-13	12:50, 4:40, 8:40

Design a Visual Basic program that allows the user to search through the data and find a movie by Genre, by Rating, by Showtime, by browsing the entire list.

The user first selects a search method (All, Genre, Rating, or Showtime). This selection could be accomplished by option buttons.

If Genre or Rating is selected, the user must next select which particular Genre or Rating to search by. If Showtime is selected, the user is presented with a list hours—12:00, 1:00, 2:00, 3:00, ..., 10:00. This selection could be accomplished by a combo box.

If the All option is selected, the user must then choose from a list of all movie titles for the day. If a particular Genre or Rating is selected, the user chooses from a list of only those movies having that particular Genre or Rating. If a particular Showtime hour is selected, the user chooses from a list of those movies whose start time is within that hour. Thus, if the user chose 3:00, three movies—Barbershop 2, Girl with a Pearl Earring, and Miracle—would be listed for selection. The list of movies could be accomplished using a list box.

When the user clicks on a particular movie title, all information that for movie is displayed in a designated area on your form (using frames, labels, textboxes, your choice). Show the title, genre, rating, and all showtimes. This area starts empty and clears anytime a new list of movies is generated.

Four samples are pictured on the next page.

Visual Basic ~ Problem for Newport News Computer Challenge 2004  
AMC 24 ~ Page 2 of 2

AMC 24 - by Charles F. Monroe

AMC Hampton Town Centre 24 Theater  
by Charles F. Monroe  
Movies for Sunday, February 8, 2004

Search By

☒ All  
☐ Genre  
☐ Rating  
☐ Showtimes

Barbershop 2  
Catch That Kid  
Cold Mountain  
Girl with a Pearl Earring  
Master and Commander: The Far Side of the World  
Miracle

AMC 24 - by Charles F. Monroe

AMC Hampton Town Centre 24 Theater  
by Charles F. Monroe  
Movies for Sunday, February 8, 2004

Search By

☒ All  
☐ Genre  
☐ Rating  
☐ Showtimes

Master and Commander: The Far Side of the World  
Miracle  
Monster  
Something's Gotta Give  
The Butterfly Effect  
The Lord of the Rings: The Return of the King

Movie Info

TITLE: Miracle  
GENRE: Drama  
RATING: PG  
SHOWTIMES: 12:30, 1:50, 3:30, 5:00, 6:40, 8:00, 9:40

AMC 24 - by Charles F. Monroe

AMC Hampton Town Centre 24 Theater  
by Charles F. Monroe  
Movies for Sunday, February 8, 2004

Search By

☐ All  
☐ Genre  
☒ Rating  
☐ Showtimes

Select

PG-13

Barbershop 2  
Girl with a Pearl Earring  
Master and Commander: The Far Side of the World  
Something's Gotta Give  
The Lord of the Rings: The Return of the King

Movie Info

TITLE: The Lord of the Rings: The Return of the King  
GENRE: Action  
RATING: PG-13  
SHOWTIMES: 12:50, 4:40, 8:40

AMC 24 - by Charles F. Monroe

AMC Hampton Town Centre 24 Theater  
by Charles F. Monroe  
Movies for Sunday, February 8, 2004

Search By

☐ All  
☐ Genre  
☐ Rating  
☒ Showtimes

Select

4:00

Barbershop 2  
Catch That Kid  
Cold Mountain  
Monster  
Something's Gotta Give  
The Butterfly Effect  
The Lord of the Rings: The Return of the King

Movie Info

TITLE: Catch That Kid  
GENRE: Action  
RATING: PG  
SHOWTIMES: 12:30, 1:30, 2:40, 4:10, 5:10, 7:00, 9:20



## Connect The Dots (20 points)

A blank form starts the program. It has a non-default icon and its caption contains both the name of the program and the author (team/school).

The user clicks at various places on the form, creating a series of clicks. Each series of clicks is ended by a double-click. The terminating double-click is included as the last click of the series.

For each series:

- 1) On the first click, a dot is placed at that location.
- 2) On the second click, the dot is erased and a line segment is drawn in black connecting the two click locations.
- 3) On the third click, a black line segment is drawn connecting that location to the previous one.
- 4) On each subsequent click:
  - a) A line segment is drawn connecting that location to the previous one.
  - b) If the newly drawn line segment crosses any previously drawn line segment, its color is red. Otherwise, it is black.
  - c) All previously drawn line segments crossed by the newly drawn line segment turn green.
  - d) All previously drawn green line segments not crossed by the newly drawn line segment turn blue (so black line segments remain black until crossed).
- 5) Any click that immediately follows a double-click erases all previous line segments and begins a new series.



## Crossword Tree (30 points)

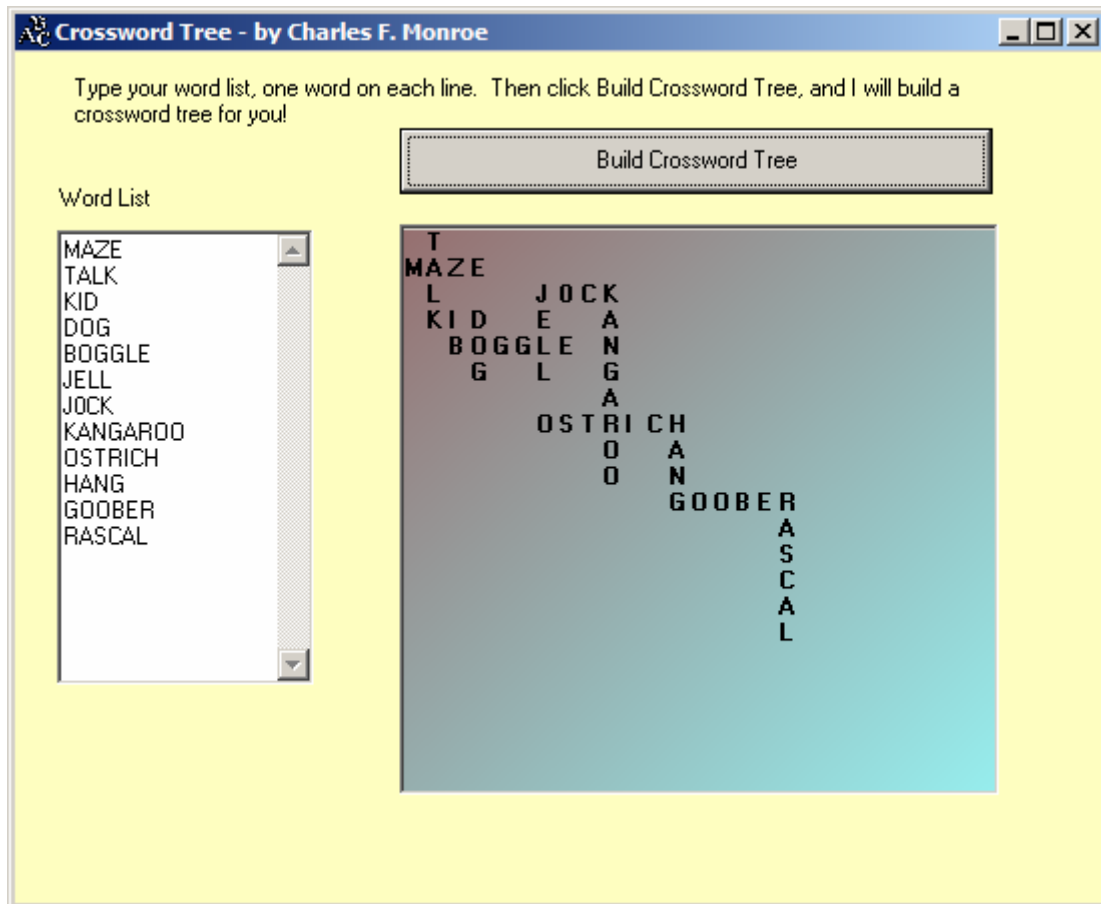
This program takes a list of words and arranges them in a “crossword tree” so that each word, beginning with the second, crosses the previous at the first letter in the previous word that is found in the current word.

The first word is horizontal, the second vertical, the third horizontal, and so on.

The first word is shifted down just enough so that the top of the first letter of the second word touches the top of the picture box. Oh, did I forget? Display the crossword tree in a picture box.

Output stops when your program runs out of words or a word has no common letter with its previous word.

Sample:



(No, you do not need to shade your picture box.)