

VISUAL BASIC/ C# PROGRAMMING (330)

STATE – 2019

Production Portion:

Program 1: Matching Game _____ (400 points)

TOTAL POINTS _____ (*400 points*)

Failure to adhere to any of the following rules will result in disqualification:

1. Contestant must hand in this test booklet and all printouts. Failure to do so will result in disqualification.
2. No equipment, supplies, or materials other than those specified for this event are allowed in the testing area. No previous BPA tests and/or sample tests or facsimile (handwritten, photocopied, or keyed) are allowed in the testing area.
3. Electronic devices will be monitored according to ACT standards.

No more than ten (10) minutes orientation
No more than ninety (90) minutes testing time
No more than ten (10) minutes wrap-up

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Workplace Skills Assessment Program competition.

Matching Game

In this exercise, you will create a Visual Basic or C# Windows Form Application that requires the user to identify matching pairs of pictures. Upon hitting “Start Game”, the placement of pictures is visible for three (3) seconds, and then a default image is displayed.

Requirements:

1. You must create a C#/VB Windows Form Application named CS_330_ContestantNumber, where ContestantNumber is your BPA assigned contestant number (including dashes). For example, CS_330_01_2345_6789. If you are using VB, use VB instead of CS in the application name.
2. Your name and contestant number must appear as a comment at the top of the main source code file.
3. Application on Exit button press must ask for confirmation to close, with the Title of the confirmation box being “Confirm” and the text being “Are you sure you wish to exit the Matching Game?”
 - a. Exit button must be named “exitButton”
4. The main form must not have minimize or maximize, or close buttons in the Form Handle.
5. The main form must have text “Matching Game” for its title.
6. The main form must have a 3” x 4” placement of PictureBoxes.
 - a. Six images are provided. Each picture must be displayed twice to allow matching the same image.
 - b. The entire image must be visible within each PictureBox.
7. A Timer must be created and configured for a three (3) second interval.
8. The main form must have a “Start Game” button.
 - a. On click, the location of pictures must be randomized, the timer enabled, and score reset.
 - b. After three (3) seconds, the default image must be displayed for all PictureBoxes.
 - i. The timer event must only trigger once per “Start Button” click.
9. When a picture location is clicked, the image for that location is displayed (instead of the “default” image).
 - a. If two (2) images are matched correctly, the score increments by 100.
 - b. If two (2) images are matched incorrectly, the game is over.
 - i. Display a dialog stating final score.
 - ii. Allow images to be clicked to reveal, but do not allow score to change.

Sample Pictures:

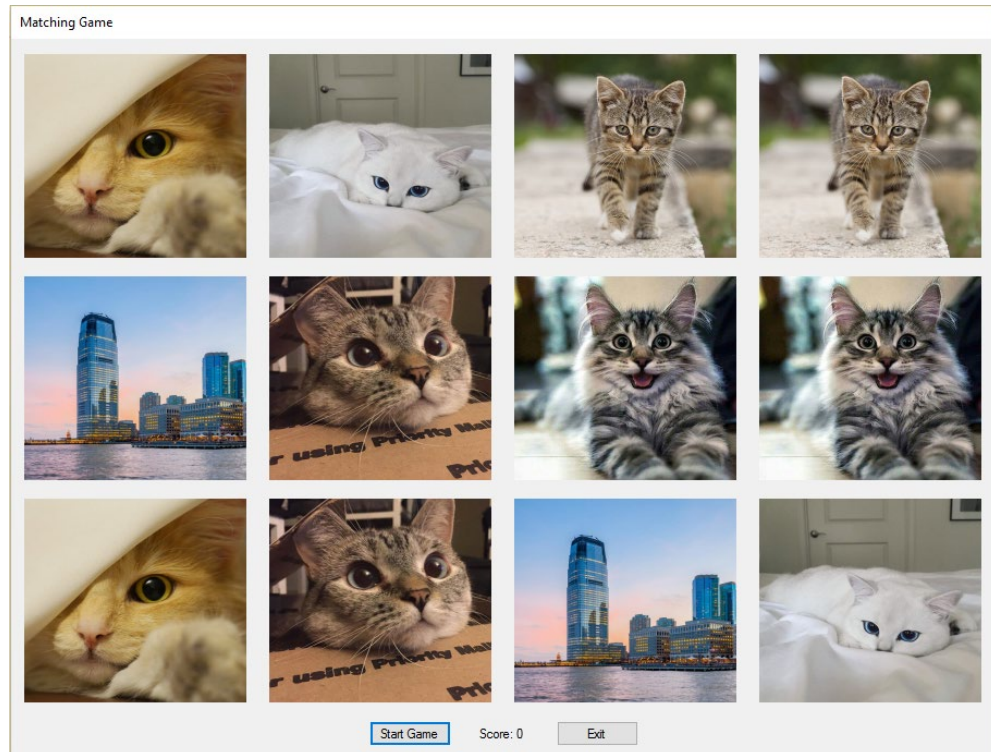


Figure 1: Main screen after form loads (randomized image locations).



Figure 2: The main form after “Start Game” is clicked and 3 seconds has elapsed.

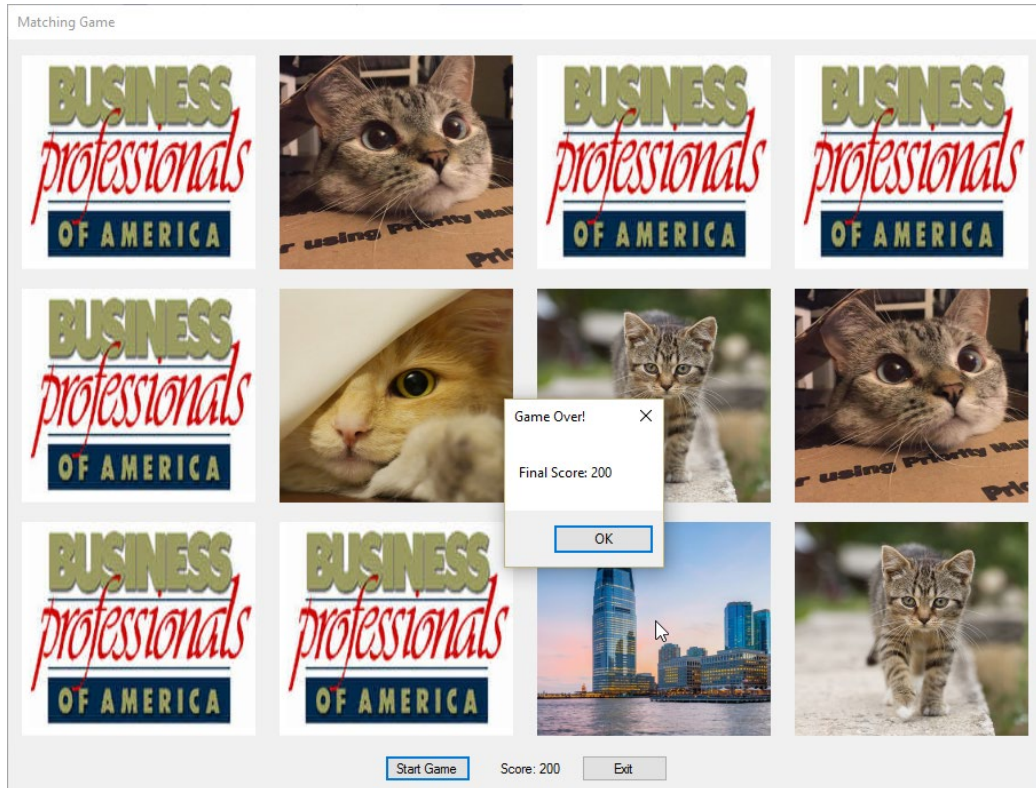


Figure 3: The main form after two correct matches and one incorrect match. Game Over dialog box also shown.

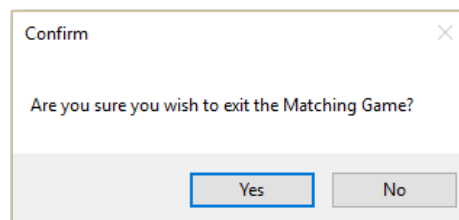


Figure 4: The confirmation window. This should be opened when Exit is pressed. If “Yes” is clicked, the application should close, otherwise return to the main form.

You will have ninety (90) minutes to complete your work.

Your name and/or school name should *not* appear on any work you submit for grading.

Submit a copy your entire solution/project to the flash drive provided. You must submit your entire solution/project so that the graders may open your project to review the source code and/or build and execute your solution/project. **Submissions that do *not* contain source code will *not* be graded.**

Development Standards

- Standard name prefixes must be utilized for variables.
- All subroutines, functions, and methods must be documented with comments explaining the purpose of the method, the input parameters (if any), and the output (if any).

Your application will be graded on the following criteria:

Solution and Project

The project is present on the flash drive _____ 10 points

The project is named according to the naming conventions _____ 10 points

Program Execution

Code copied to USB drive and program runs from USB _____ 20 points

If the program does not execute, then the remaining items in the program executive section receive a score of zero.

The program contains an Exit button that asks for user confirmation _____ 25 points

The exit button is named “exitButton” _____ 15 points

The main form does not have minimize, maximize, or close buttons
in the Form Handle _____ 20 points

The main form has 12 PictureBoxes with six (6) images displayed twice _____ 20 points

Start Game button randomizes pictures _____ 30 points

After Start Game, pictures are visible for three (3) seconds before default is shown _____ 30 points

During the initial three (3) seconds, selecting a picture is ignored _____ 20 points

Valid selections add 100 points _____ 20 points

Invalid selections display Game Over dialog box _____ 20 points

After Game Over, additional selections don't add to score, but are allowed _____ 20 points

Start Game can be clicked at any time _____ 20 points

Source Code Review

Code is commented at the top, for each function, and as needed _____ 10 points

Code uses reasonable and consistent variable naming conventions _____ 10 points

Code to start game is present _____ 10 points

Code to display images for three (3) seconds is present _____ 20 points

Code to populate image boxes is present _____ 20 points

Code for creating/tracking time is present _____ 20 points

Code for displaying image when clicking pictureBox is present _____ 10 points

Code for randomly assigning images to pictureBoxes is present _____ 20 points

Total Points: _____ 400 points