# Create software components using Java (7266/7267-205)

## e-Quals
## Assignment guide for Candidates
Assignment B

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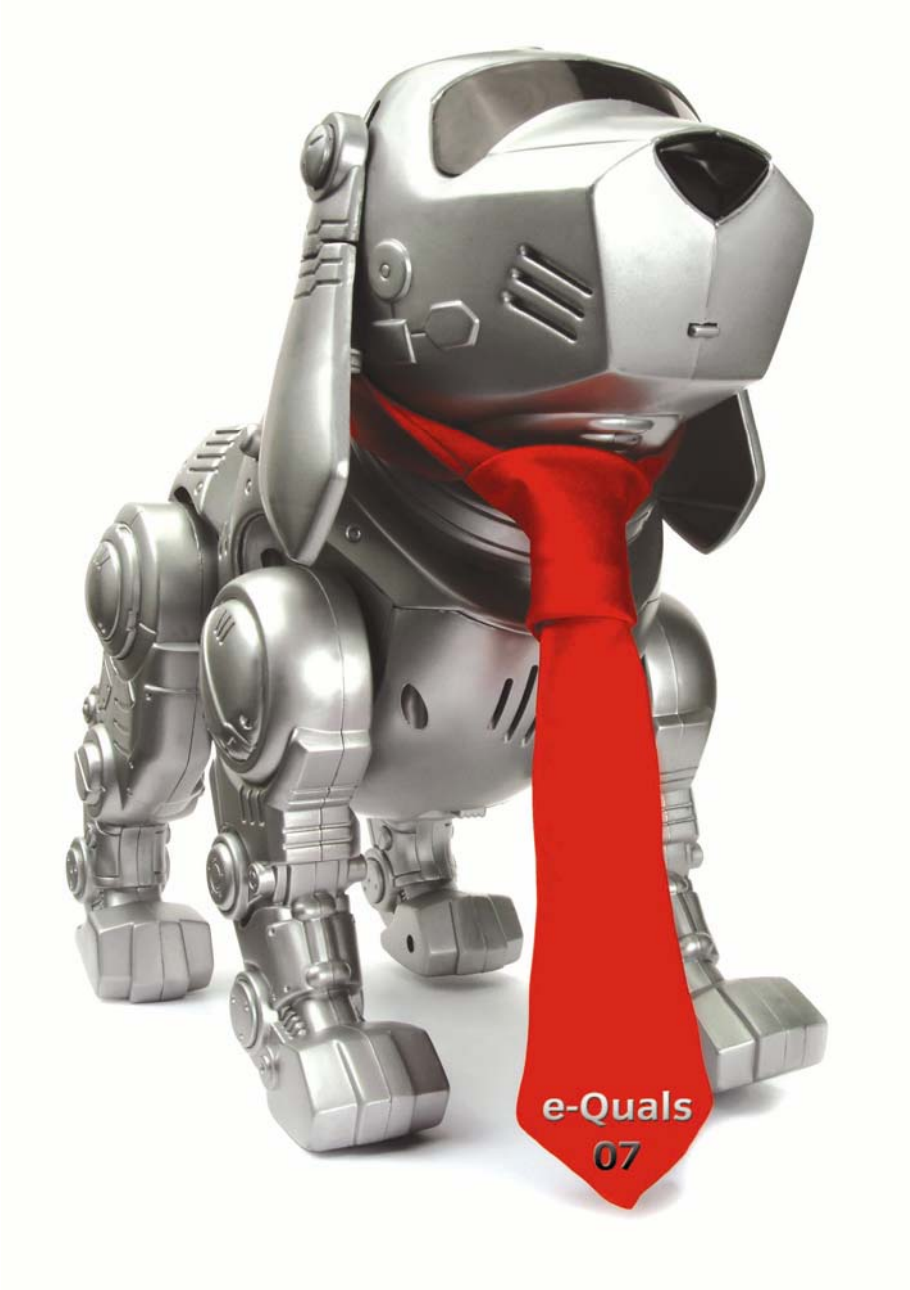

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# Level 2 Create software components using Java (7266/7267-205) Assignment B

Introduction – Information for Candidates

## About this document

This assignment comprises part of the assessment for Level 2 Create software components using Java (7266/7267-205).

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## Health and safety

You are asked to consider the importance of safe working practices at all times.

You are responsible for maintaining the safety of others as well as your own. Anyone behaving in an unsafe fashion will be stopped and a suitable warning given. You will **not** be allowed to continue with an assignment if you compromise any of the Health and Safety requirements. This may seem rather strict but, apart from the potentially unpleasant consequences, you must acquire the habits required for the workplace.

## Time allowance

The recommended time allowance for this assignment is **4** hours.

# Level 2 Create software components using Java (7266/7267-205)

Candidate instructions

Candidates are advised to read **all instructions** carefully before starting work and to check with your assessor, if necessary, to ensure that you have fully understood what is required.

**Time allowance:** 4 hours

**Assignment set up:** A scenario is provided for candidates in the form of a company specification for a new product.

This assignment is made up of **two** tasks

- **Task A** - provides a detailed design specification that should be followed by candidates when developing their program.
- **Task B** - provides presentation criteria that should be followed by candidates when producing their work.

## Scenario

A games software development company, GameChoice, is developing a games program for use on the Internet. It will be run using a Java applet. The applet will allow a user to play the classic game of Hits and Misses in which the player must guess the colours of pegs.

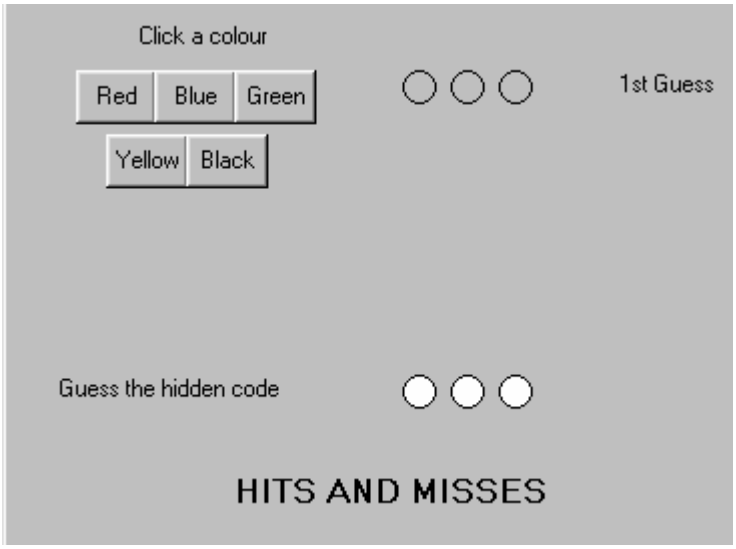
The outline specification for the applet states that

- the program randomly selects three colours from five possible colours
- the player has 6 guesses to work out which three colours in the correct sequence have been chosen by the program
- the game continues until either the player has solved the coloured code or has had 6 guesses
- if the player guesses the code before they have lost 6 lives, they have won
- if the player loses all their lives before they guess the coloured code, they have lost.

## Task A

*Candidates should use the following detailed specification to fulfil the company's requirements:*

1 Create a HitMiss applet that has a GUI similar to that shown below:




2 The playing area is light gray in colour.

3 The title HITS AND MISSES must be displayed at the bottom with the text in blue and a large font size.

4 The 5 playing colours are red, blue, green, yellow and black and are displayed on buttons below the instruction 'Click a colour'.

5 The guess line is displayed as the guess number alongside 3 open circles.

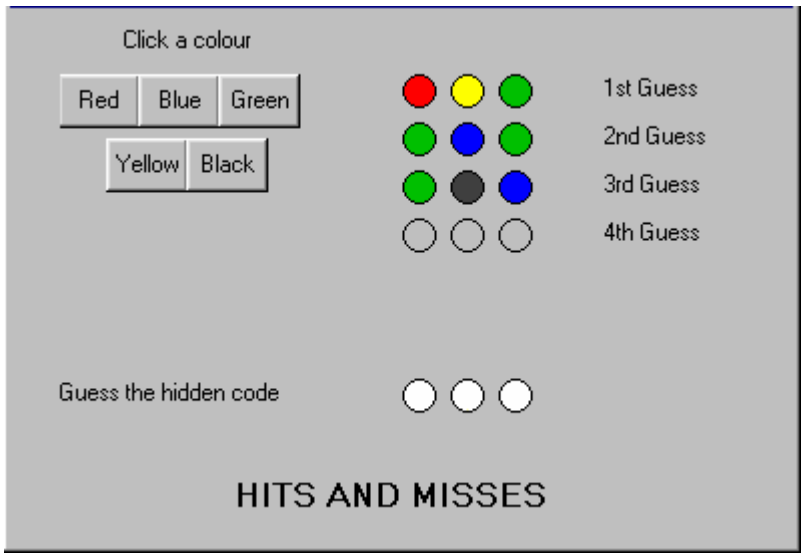
6 When the applet starts a random sequence of 3 colours must be generated from the 5 available. Repetition of colours in the sequence is allowed. (Some code has been produced by your manager to demonstrate the use of the Random class. This code is listed in Appendix A.)

7 The 3 colour code generated by the program is displayed as 3 filled white circles next to 'Guess the hidden code'.

8 The player selects a colour by clicking a colour button with the mouse. When a colour is selected the next open circle in the guess line is replaced with a filled circle of the selected colour. The three open circles are replaced from left to right.

9 If the player guesses the code in 6 or less guesses then replace the 'Guess the hidden code' with 'You win'.

10 When three colours have been selected the program should display the next guess number together with three open circles on the next line (see below which shows a game after 3 guesses).




11 If the player has not solved the code after 6 guesses then replace the 'Guess the hidden code' with 'You lose'.

12 At the end of the game the correct code should be revealed by replacing the white filled circles for the hidden code with the correct colours.

13 Test the applet and resolve any logical or run-time errors.

14 Print a program listing.

15 Produce a screen print of the HitMiss applet.

## Task B

*Candidates should follow the criteria below when producing their work:*

1 The program conforms to the design specification.

2 The program uses the most appropriate data type(s).

3 The program syntax is consistently indented to aid readability.

4 The program is commented.

# Note

- Candidates should produce the following for their assessor:
  - A printed program listing.
  - Printout of the HitMiss applet (screen print).
- At the conclusion of this assignment, hand all paperwork and removable media to the test supervisor.
- Ensure that your name is on the removable media and all documentation.
- If the assignment is taken over more than one period, all removable media and paperwork must be returned to the test supervisor at the end of each sitting.

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