# SET09109 Fundamentals of Parallel Systems (2013)

# Final Group Assignment

# Specification

You are required to work in groups of preferably two or at most three people. You can choose your own group members. Please inform me of the makeup of your group.

You will be provided with a version of a multiplayer game that implements the Pairs Game. The object of the game is to find the matching pairs both in terms of the colour and the numeric value. An example of a single player version of the game is available at <http://www.hatley.info/youngsters/game.html> . An archived Eclipse project for the supplied version is available in the Assessment folder of the WebCT pages for this module.

The supplied multiplayer version is documented in “Interactions within the Pairs Game”, also available in the Assessment folder. In this version of the game each player is able to expose two squares in their own time. A player also has to indicate that they want to progress to choose the next possible pair if they have not exposed a matching pair. The Player process automatically makes a claim on behalf of the player. However, another player may have claimed the same pair BEFORE a player makes a claim because the available pairs are only updated after a successful claim.

## The Challenge

The challenge is to modify the game implementation so that players have to take it in turn to expose squares and all players can see the squares that have been exposed. If a player exposes a pair they can continue with their turn by exposing more squares. A player’s turn ceases as soon as they expose two squares that do not match.

## Requirements

You will supply all requirements as a group. There is no requirement for an individual contribution. All members of the group will be awarded the same mark unless they indicate to the contrary on their submission.

The weight of each Requirement to the overall mark for the Challenge is indicated together with the percentage mark this carries in the Lab Book overall.

### Requirement 1 (0)

To demonstrate your solution to the challenge to me during a normal Practical Class.

### Requirement 2 (0.25 – 10marks)

To provide a critical review, of no more than 150 words, of the supplied implementation in terms of its:

1. Use of data structures
2. Communication structures and interactions

### Requirement 3 (0.50 – 20 marks)

Document your solution, using process network and channel interaction diagrams and accompanying text of no more than 200 words, in terms of its:

1. Use of data Structures
2. Communications structures and interactions

DO NOT INCLUDE A LISTING OF YOUR PROCESS DEFINTIONS

### Requirement 4 (0.25 – 10 marks)

You will be allocated another two groups with whom you should interact. You should provide the other groups with the document that is Requirement 3 by email. You will then play each other’s game implementation.

You should then provide a critical review of the other two groups’ solution, of no more than 150 words each, in terms of its:

1. Use of data Structures
2. Communications structures and interactions

## Key Dates

Requirement 1 to be completed by 4pm on 15th April

Requirement 2 submit as part of the Lab Book by 4pm on 17th April

Requirement 3 submit to School Office by 10am on 26th March   
 must also be submitted as part of the Lab Book

Requirement 4 submit as part of the Lab Book by 4pm on 17th April

***If requirements 1 and 3 are not achieved by the due date and time then only requirement 2 will be awarded marks.***

## Final Submission

Requirements 2, 3 and 4 should be submitted as part of your Lab Book. These will constitute 40% of the mark for the Lab Book. Please ensure that you indicate the other member(s) of your group.

If you do not want each member of your group to be awarded the same mark then please indicate on a separate sheet the weight (a number between 0.0 and 1.0) you wish to be allocated to each member. This sheet should be signed by all members of the group. The mark allocated to the group as a whole will be multiplied by the weights indicated.

**The hand-in date and time for the complete Lab Book is 4pm on the 17th April to the school office. It is required that the hand-in is submitted as a printed document.**

**The Lab Book contributes 50% of the total mark for the module. The examination contributes the other 50%.**