UNIVERSITY OF Hull

DEPARTMENT OF COMPUTER SCIENCE
ASSESSMENT DESCRIPTION 2016/17
(EXAM TESTS WORTH ≤15% AND COURSEWORK)

MODULE DETAILS:

Module Number:	08027	Semester:	2
Module Title:	Mobile Devices and Applications		
Lecturer:	S.J.Grey and Dr K.W.Elner		

COURSEWORK DETAILS:

Assessment Number:	1	of	1		
Title of Assessment:	Android Pair Matching Application				
Format:	Demonstration	Program			
Method of Working:	Individual				
Workload Guidance:	Typically, you should expect to spend between	40	and	60	hours on this assessment
Length of Submission:	This assessment should be **no** more than: *(over length submissions **will be** penalised as per University policy)*	N/A - coding exercise **words** *(excluding diagrams, appendices, references, code)*			

PUBLICATION:

Date of issue:	16th February 2017

SUBMISSION:

ONE copy of this assessment should be handed in via:	SVN		If Other (state method)	
Time and date for submission:	**Time** *(must be before 4pm)*	2:00pm	**Date**	Thursday 30th March 2017
If **multiple hand–ins** please provide details:	Students are to attend a demonstration during the week commencing 15th May which constitutes part of their assessment			
Will submission be scanned via TurnitinUK?	please select	If submission is via TurnitinUK students MUST only submit Word, RTF or PDF files. Students MUST NOT submit ZIP or other archive formats. Students are reminded they can **ONLY** submit **ONE** file and must ensure they upload the correct file.		

The assessment must be submitted **no later** than the time and date shown above, unless an extension has been authorised on a *Request for an Extension for an Assessment* form which is available from the Departmental Office (RB-308) or http://intra.net.dcs.hull.ac.uk/student/exam/Advice%20regarding%20resits%20in%20modules%20passed%20by%20compe/Forms/AllItems.aspx.

If submission is via TurnitinUK within Canvas staff must set resubmission as standard, allowing students to resubmit their work, though only the last assessment submitted will be marked and if submitted after the coursework deadline late penalties will be applied.

MARKING:

Marking will be by:	Student Name

COURSEWORK COVERSHEET:

BEFORE submission, you **must** ensure you complete the **correct** departmental ACW cover sheet (if required) and attach it to your work. The coversheets are available from: http://intra.net.dcs.hull.ac.uk/student/ACW%20Cover%20Sheets/Forms/AllItems.aspx	NO coversheet required

ASSESSMENT:

The assessment is marked out of:	100	and is worth	50	% of the module marks
N.B If multiple hand-ins please indicate the marks and % apportioned to each stage above (i.e. Stage 1 – 50, Stage 2 – 50). It is these marks that will be presented to the exam board.				

ASSESSMENT STRATEGY AND LEARNING OUTCOMES:

The overall assessment strategy is designed to evaluate the student's achievement of the module learning outcomes, and is subdivided as follows:

LO	Learning Outcome	Method of Assessment *{e.g. report, demo}*
4	*Understand the tools and processes used to create and debug an application for a suggested purpose on a mobile device.*	Demo and Program

Assessment Criteria	Contributes to Learning Outcome	Mark
User Interface Design and Usability	4	10
Application Functionality	4	40
Application Robustness	4	20
Good Coding Practice	4	10
Demonstrates understanding of code	4	20

FEEDBACK

Feedback will be given via:	Verbal (via demonstration)	Feedback will be given via:	Mark Sheet
Exemption (staff to explain why)			

Feedback will be provided no later than 4 ‘teaching weeks’ after the submission date.

This assessment is set in the context of the learning outcomes for the module and does not by itself constitute a definitive specification of the assessment. If you are in any doubt as to the relationship between what you have been asked to do and the module content you should take this matter up with the member of staff who set the assessment as soon as possible.

You are advised to read the **NOTES** regarding late penalties, over-length assignments, unfair means and quality assurance in your student handbook, also available on the department’s student intranet at:

- http://intra.net.dcs.hull.ac.uk/student/ug/Handbooks/Forms/AllItems.aspx (for undergraduate students)
- http://intra.net.dcs.hull.ac.uk/student/pgt/Student%20Handbook/Forms/AllItems.aspx (for postgraduate taught students).

In particular, please be aware that:

- Your work will be awarded zero if submitted more than 7 days after the published deadline.
- The overlength penalty applies to your written report (which includes bullet points, and lists of text you have disguised as a table. It does not include contents page, graphs, data tables and appendices). Your mark will be awarded zero if you exceed the word count by more than 10%.

Please be reminded that you are responsible for reading the University Code of Practice on the use of Unfair means (http://www2.hull.ac.uk/student/studenthandbook/academic/unfairmeans.aspx) and must understand that unfair means is defined as any conduct by a candidate which may gain an illegitimate advantage or benefit for him/herself or another which may create a disadvantage or loss for another. You must therefore be certain that the work you are submitting contains no section copied in whole or in part from any other source unless where explicitly acknowledged by means of proper citation. In addition, **please note** that if one student gives their solution to another student who submits it as their own work, **BOTH** students are breaking the unfair means regulations, and will be investigated.

In case of any subsequent dispute, query, or appeal regarding your coursework, you are reminded that it is your responsibility, not the Department’s, to produce the assignment in question.

08027 ACW Description – Pair Matching Game

Before you start please take time to read this specification in its entirety. Then read it again. Ensure that you understand what is being asked of you. If you have any doubt please ask.

Pair Matching Game is an amazing pair matching game which displays a grid of pictures (or tiles) for a short period of time before turning the pictures face down (imagine the face and back of a playing card). The user then selects two tiles which are revealed. If the pair of pictures on the tiles match they stay revealed. If they do not they are turned face down again. The goal is to turn all tiles face up.

As an enhancement instead of matching any pair of tiles only tiles which are directly adjacent to one another (vertically or horizontally) can be matched. Users must move face down tiles by dragging to swap their positions. Face up tiles cannot be moved. This means that without careful planning a use may isolate tiles that can never be turned face up.

Application Functionality

You should develop an application with the following functionality.

General Features

The application should be able to handle normal mobile device events (such as receiving a phone call or having a poor network connection) in an appropriate manner. The application should function in at least two languages. The application should function in different orientations, providing different layouts for different orientations when appropriate. Fixing the orientation will not meet this criteria.

Playing Puzzles

Puzzles can be played in the basic click mode, or in a more advanced drag mode. Users should be given a score based on their performance. It is up to the student to create an appropriate scoring method. If a puzzle is interrupted upon their return the user should have the option to continue where they left off. The scoring method should provide reasonable differentiation of performance. For example, simple awarding points for finding a correct match will always result in the same score for a completed puzzle and so does not differentiate.

Click Mode

In click mode a user presses one tile, then another. After two tiles have been pressed they should be revealed. If they are a matching pair they should stay revealed. If they are not they turn back over after a second. The user interface should be able to give some visual feedback as to when each tile has been selected to be revealed. It should also be possible to deselect a tile that has been marked to be revealed.

Drag Mode

In drag mode a user can drag one face down tile over an adjacent face down tile in order to swap their positions. Tiles are revealed in the same way as click mode, but only tiles that are adjacent to one another can be revealed. Once revealed tiles cannot be moved. This means that it is possible to reach a state where it is impossible to complete the puzzle because tiles can be permanently separated from one another.

Puzzle Management

The user should be able to choose puzzles from those available on the device, or choose to download individual puzzles from a list of puzzles available on the server. Downloaded information should be stored to the device so that the application can function without a network connection. More information about the format of data provided can be found in the Data Format section. Puzzles should be filtered in a sensible way in order to provide the user with a reasonable method of selecting an appropriate puzzle. For example, puzzles may be presented according to their size so that only puzzles of a particular size are displayed. If a puzzle has been completed previously a high score for that puzzle should be displayed allowing users to easily identify puzzles they could complete with a higher score, or have not completed at all.

Coding Style

Code should follow clear conventions concerning naming of data members and functions, and where appropriate efforts should be made to separate logic objects from presentation layers. You should use SVN throughout your

development, committing whenever an appropriate unit of work has been completed, and including an appropriate log message.

Data Format

Resources are provided via a webpage in json format. The puzzle index is found at http://www.hull.ac.uk/php/349628/08027/acw/index.json and include a list of file names of available puzzles.

```
{"PuzzleIndex":["puzzle12345.json","puzzle112.json","puzzle865.json"]}
```

Puzzle files are located in a directory at http://www.hull.ac.uk/php/349628/08027/acw/puzzles/ and include an id, the filename of a PictureSet, the number of rows in the puzzle and the initial layout of the puzzle in numerical representation.

```
{"Puzzle":{"Id":"12345","PictureSet":"fruit.json","Rows":3,"Layout":[1,3,5,6,5,1,3,6,
2,4,2,4]}}
```

PictureSet files are located in a directory at http://www.hull.ac.uk/php/349628/08027/acw/picturesets/ and include an array of file names of image files.

```
{"PictureFiles":["apple.jpg","orange.jpg","pear.jpg","strawberry.jpg","kiwi.jpg","ban
ana.jpg","cherry.jpg","pineapple.jpg"]}
```

Image files are located in a directory at http://www.hull.ac.uk/php/349628/08027/acw/images/. Note that an image can be part of more than one PictureSet.

Demonstration

Your software will be demonstrated on a Galaxy Nexus 5 X with a JellyBean 4.1 system image using API level 16 without the Google APIs. This AVD will be provided for you at you demonstration. You should not rely on any state that you have set up previously. At your demonstration you will be asked which version you would like to be marked. Make very sure that all the source code files required to make your application are committed to Subversion. It's easy to forget to add some while you are developing. A good way to check this is to check out your project to a different folder and see if you can build it. If the version that is checked out was handed in late then the normal penalties will be applied. Failure to attend your demonstration will result in your mark being capped at 40%. Your demonstration is considered to be part of your assessment.

Late Submission

As with all university coursework, you have the option of submitting late (subject to the mark penalties laid down in your student handbook). If you do decide to submit late, you should say so before your demonstration. You will need to know the revision number you wish to be considered. Your submission will be taken from the state of your Subversion repository at that time.

Important note about Subversion

An empty ACW project has been created for you to work in. It is your responsibility to make very sure that all the source code files required to make your application are committed to Subversion. It's easy to forget to add some while you are developing. A good way to check this is to check out your project to a different folder and see if you can build it. Do not leave it until the last minute to commit your work. When you do commit your work you should include ACW FINAL in the SVN log. This indicates that you have made a submission. You can do this multiple times before the deadline if you need to. Submissions made after the deadline will be subject to the usual penalties.