UNIVERSITY OF AUCKLAND

FIRST SEMESTER, 2010
Campus: City

COMPSCI 345 & SOFTENG 350

TEST

(Time Allowed: 50 Minutes)

Note: This test contributes 12% to your final grade.

Attempt all questions.

Write your answers **legibly** on this paper.

Overflow space is available at the end of the paper, note at end of original space if you have extended your answer into the overflow space

Question	Out of	Marks
Section 1		
1. Fill-in-the-blanks	10	
Section 2		
1. Usability	9	
2. Physical models	7	
3. Form modelling	4	

Total	**30**	

Name:	UPI:	ID:

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Section 1 10 Marks
(1 mark per question)

1. Which design will get more user feedback (i.e. users will ask for more changes)? [*circle one*]

   Low fidelity (e.g. a sketch) High fidelity (e.g. a Visual Basic form)

2. '**_Heuristic**_evaluation' is a type of 'discount usability testing.'

3. In a **_cognitive_ __walkthrough__** [*two words*] you ask the question "Is the effect of the action the same as the user's goal at this point?"

4. Two distinct applications of speech recognition are Transaction and **__Transcription__**.

5. In the 5W+H heuristic we answer the six questions: Who? What? When? Where? **_Why_____**? and **__How___**? [*fill in both blanks*]

6. **_Semantic__** distance is the distance between what people want to do and the meaning of an interface element.

7. An implication of Fitts' law is that the **_largest_** Fitts-based pixel is the one under the cursor.

8. Hick's law (Hick-Hyman law) can help to optimize **__menu___** structures.

9. In the Model Human Processor, working memory must interact with long-term memory over a significant length of time before an item can be stored in **long-term memory_**.

10. Form-oriented analysis supports role-dependent viewpoints; the software engineer can view a form as an ___editable___ method call.

Section 2

1. Usability Evaluation 9 Marks
(1 mark per blank)

You are a researcher in Beryl Plimmer's HCI lab at the University of Auckland. Nintendo has developed a new version of their Wii controller that has a combination of better sensors and new vibration cancelling algorithms. Externally, the new controlled appears just like the old one, but their engineers believe the refinements will make it more usable for typing in short texts by pointing at an image of a keyboard. Your lab has been contracted to test whether the new controller is more usable than the old one for the task of typing in six-to-eight letter words.

a. Name two things that you will measure in the test and, for each, briefly justify why this is an important thing to measure.

i.___**Efficiency (i.e. how fast they can do the task – seems the fundamental innovation)**__

ii. __**Error rate (another way pointing difficulty could manifest) [also accept Satisfaction]**

b. Discuss one advantage and one disadvantage of a repeated measures (within groups) design for this experiment.

Advantage of repeated measures:

_**Each subject is their own control – hence less error in measuring effect and less** __

_**subjects needed**_____

Disadvantage of repeated measures:

_ **'Carryover effect' – fatigue, boredom, practice** _____

_____

c. Name three items that will be part of the script (or protocol) of your experiment

i.__**Greeting participant (also accept getting consent)**_____

ii. _**Explaining the task (also accept observing the task**_____

iii._**Debriefing / satisfaction assessment (also accept giving payment)**__

d. You are conducting the research in the context of the University (and Nintendo in fact wants you to publish your findings to give them publicity), so you'll need research ethics approval for the study. Name two things that will have to be included in your ethics application.

i.__**Informed consent form** __

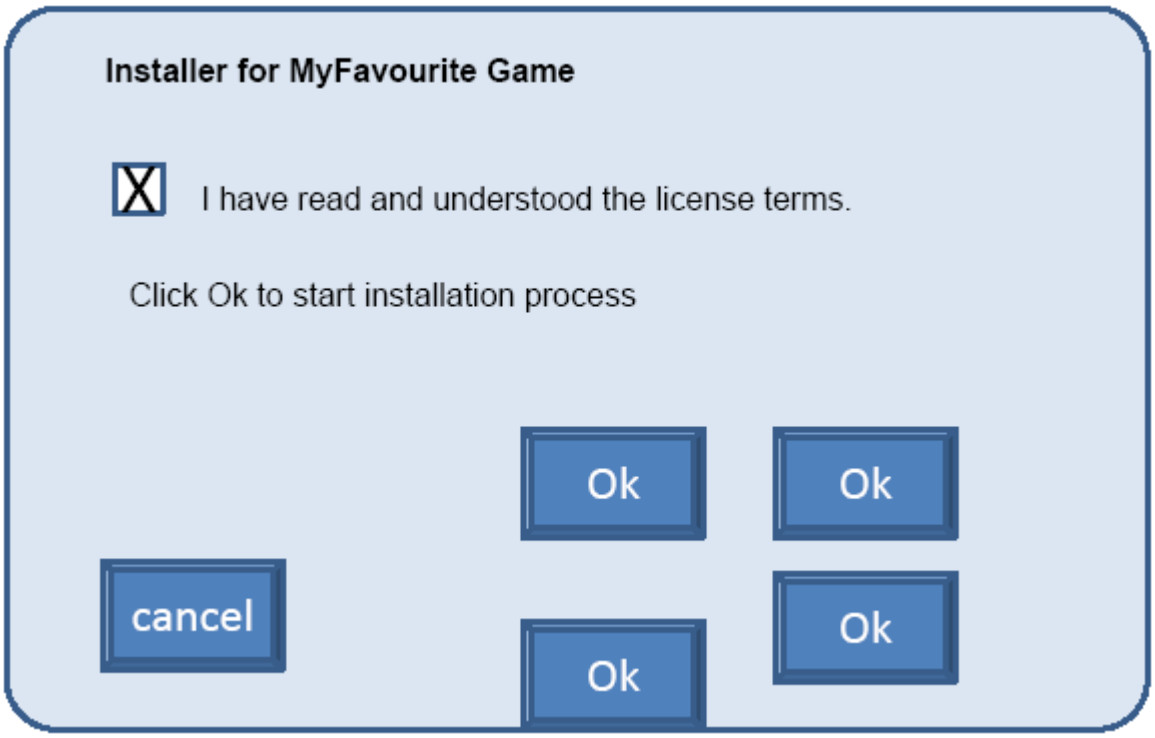
ii. _**Project information sheet (also accept: why experimentation is needed)**_

2. Physical models 7 Marks

a)

Consider the following screen layout for a full-page dialogue to confirm installing a game. The rectangle with the rounded edges describes the screen reachable with the mouse. Four candidate positions for the ok button are shown. The mouse cursor is supposed to start at the checkbox.

What, according to Fitts' law, would be the fastest button position? And what would be the slowest position? Explain both of your answers. We name the four positions: upper left, upper right, lower left and lower right. (4 marks)



Lower left is the fastest because it is at the screen border. _____

Lower right is the slowest button because it is the farthest away._____

b) Describe the interaction with the screen above with the Keyboard Level Model (KLM) from the start to the end. Assume the page starts up with the checkbox unchecked, and you have to check it in order to confirm the installation. You do not have to apply Fitts' law for the operators. For each instance of an operator, give a comment on what the purpose of that action is. (3 marks)

Letter	Operator / comment	Time
M	Think about the checkbox	1.35
P	Move mouse to the checkbox	1.1
B	Tick the checkbox	0.2
M	Think about next step	1.35
P	Move Mouse to ok button	1.1
B	Click Ok.	0.2

TOTAL ____5.3s___

3. Form modeling 4 marks

A news organization offers a set of news sections. Create a system with which visitors can subscribe to a news section and unsubscribe later. If they subscribe, they should receive the news by email, but this delivery does not have to be modeled. However, the users should be able to see their subscriptions. Also no news articles etc. in the sections have to be modeled.

a) Create a screen diagram for the system. (2 marks)

b) Create a form storyboard for the same system. (2 marks)

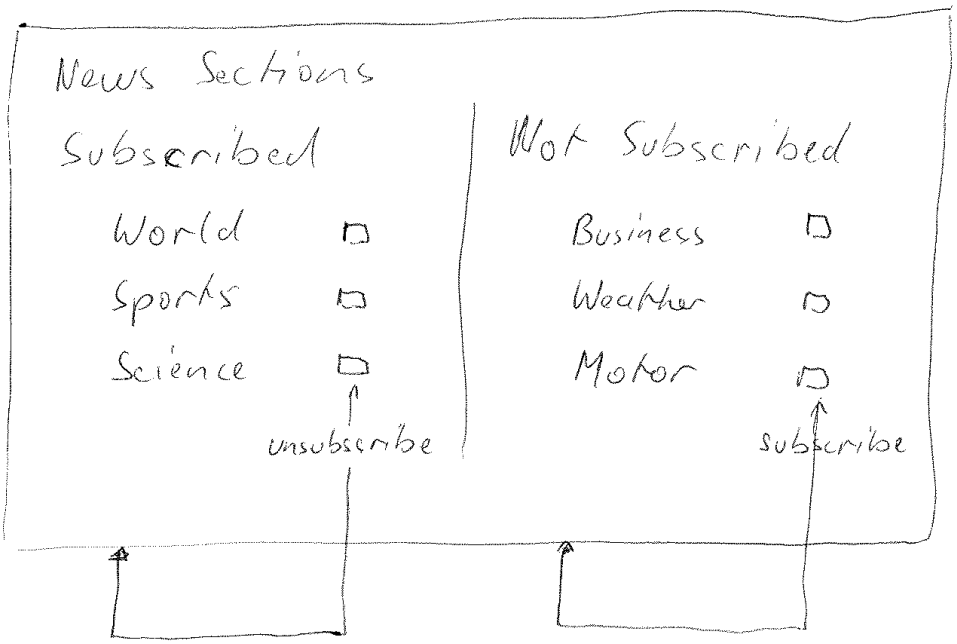
345/350 Mid Term Test

Model Solution

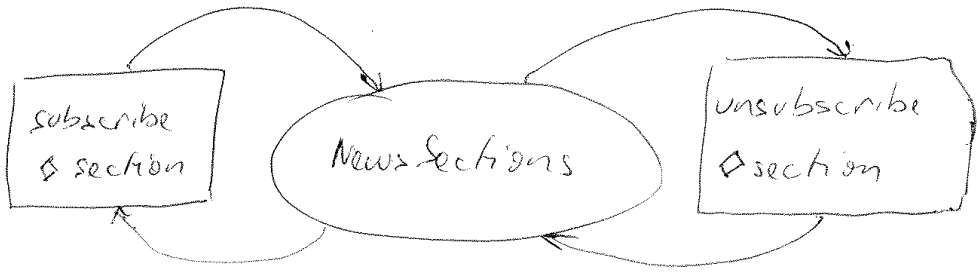
Question 3

solution I a single Page System

a)



b)



Extra Space – number questions carefully

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