Otago Boys' High School

White Eco Motel - Online Reservations

Assessment due date: Term 4, week 5 (Friday)

Credits: 12

Use complex programming techniques to develop a computer program (3.7)		
Achievement	**Merit**	**Excellence**
Use complex programming techniques to develop a computer program.	Use complex programming techniques to develop an informed computer program.	Use complex programming techniques to develop a refined computer program.

Use complex processes to develop a digital technologies outcome (3.8)		
Achievement	**Merit**	**Excellence**
Use complex processes to develop a digital technologies outcome.	Use complex processes to develop an informed digital technologies outcome.	Use complex processes to develop a refined digital technologies outcome.

Assessment Conditions: students can work collaboratively to discuss ideas and give one another feedback. However, they must code their program independently.

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Use complex programming techniques to develop a computer program (3.7)

Use complex programming techniques to develop a computer program involves:

- writing code for a program that performs a specified task
- using complex techniques in a suitable programming language
- setting out the program code clearly and documenting the program with comments
- testing and debugging the program to ensure that it works on a sample of expected cases.

Use complex programming techniques to develop an informed computer program involves:

- documenting the program with appropriate variable/module names and organised comments that describe code function and behaviour
- following conventions for the chosen programming language
- testing and debugging the program in an organised way to ensure that it works on a sample of both expected cases and relevant boundary cases.

Use complex programming techniques to develop a refined computer program involves:

- ensuring that the program is a well-structured, logical response to the task
- making the program flexible and robust
- comprehensively testing and debugging the program.

Explanatory notes a complex computer program:
- uses variables storing at least two types of data (e.g. numeric, text, Boolean, object)
- uses sequence, selection and iteration control structures
- takes input from a user, file, sensors, or other external source
- produces output
- uses two or more complex programming techniques.

Examples of complex programming techniques include:
- programming or writing code for a graphical user interface (GUI)
- reading from, or writing to, files or other persistent storage
- object-oriented programming using class(es) and objects defined by the student
- using types defined by the student
- using third party or non-core API, library or framework
- using complex data structures (e.g. stacks, queues, trees).

Use complex processes to develop a digital technologies outcome (3.8)

Use complex processes to develop a digital technologies outcome involves:

- using recognised and appropriate project management tools and techniques to plan the development of a digital technologies outcome
- decomposing the digital technologies outcome into smaller components
- trialling components of the outcome
- testing that the digital technologies outcome functions as intended
- addressing relevant implications.

Use complex processes to develop an informed digital technologies outcome involves:

- effectively using project management tools and techniques to manage development, feedback and/or collaborative processes
- effectively trialling multiple components and/or techniques
- effectively using information from testing and trialling to improve the functionality of the digital technologies outcome.

Use complex processes to develop a refined digital technologies outcome involves:

- synthesising information gained from the planning, testing and trialling of components
- discussing how this information led to the development of a high-quality digital technologies outcome.

Explanatory notes, examples of project management tools and techniques include:

- Agile or waterfall techniques (Design Thinking)
- Kanban or scrum boards (Trello)
- version control software (v1 , v2)
- collaboration tools (sharing via google docs)
- managing assets (correct folder structure and naming of image / files etc)

Task Introduction

You have been hired to create an online reservation form for a new boutique motel in Dunedin called **White Echo Motel.** The form will allow users to reserve a room online and allow for extra's such as buffet breakfast (which is $25 extra each per night that is booked - not per person).

Allow users to book extras: cots (free) full body massage $60, facials $40 . The reservations need to be stored in a real time database so that the manager can then approve bookings as they are created. The GUI must allow the program to book number of nights (max 10 nights) and their check in date. Create a text area for the users to add any additional comments.

The location of this new motel is going to be 2 Arthur Street Dunedin and their contact phone number is 03 4775277 and email whiteEchomotels@gmail.com

They have yet to decide their colour palette, but they want it to be modern and sleek. The GUI is going to be linked to their website that is being designed by another developed in your company. It should include a header with their logo and contact details in a footer. Ensure the booking form is mobile / tablet friendly.

The GUI should present a summary of their booking and output a text confirmation once the booking has been confirmed.

Error messages should be user friendly and allow users to recover from their error messages.

The Programs Specifications

- The GUI must have a logo in the top right hand corner and an appropriate heading and a footer containing contact details
- The GUI should clearly display the room with a photo, price and description
- The user should be allowed to select their hotel room
- Enter their number of nights – number input (max 10)
- Check in date – date input
- Allow users to select from extra options (facials, massage, breakfast, cot)
- A booking summary
- A button to confirm their reservation
- A reset button
- The program must store all of the booking details to a real time firebase database

Once the user has selected their room, allow them to add in their details

- First name
- Last name
- Cell phone number
- Email address

High fidelity example of possible desktop layout

White Eco Motel Reservations

White Echo Motel

Step One: Pick from our luxurious Rooms

Studio Room $219 per night	Executive Studio $249 per night	Two Bedroom Suite $329 per night	Family Suite $289 per night
Ideal combination of style and functionality, offering modern	Perfect haven for business and pleasure. Enjoy more space with	Stunning suites offering sophisticated style and space.	Excellent choice for a family or groups of friends wanting more

Step Two: Make a Reservation Now:

Select your room from the following options:

- ✓ Superior Room
- ○ Family Room
- ○ Exectuve Suite
- ○ Two Bedroom Suite

Step Three – Induldge yourself

Why not take the stress out of your visit and add some extra special services to your stay with us.

- ☐ Buffet Breakfast - $25 per person
- ☐ Facial – $40
- ☐ Full body Massage – $60
- ☐ Portable Cot – FREE

Step Four – Select your check in date:

Check in date:
dd/mm/yyyy

Step Five – Enter your number of nights:

Number of nights:
2

Step Six – Enter your details

First name:
John

Last name:
Smith

Email address:
jonhsmith@gmail.com

Cellphone:
0274822556

Comments
Please enter any other information here

Booking Summary

Room Type:	Superior Room
Check in date:	6/08/2018
Price per night:	$289
Number of nights:	3
Extras:	Cot
Breakfast:	$25 per day
Total cost:	**$569**

Please double check your reservation before confirming

Confirm your reservation   Reset

White Eco Motel
2 Arthur Street, City Rise, Dunedin , 9016
(03) 477-5277
white-ecomotels@gmail.com

3.7 and 3.8 Practice Assessment Task 2019

Step 1: Empathize(1 lesson)

1. WITHIN your 13DGT/Assessment folder, create a new folder called 3.7 Practice Assessment (Your name)
2. Download the portfolio template and save as your name to this folder.
3. Carry out some initial research into other online Motel Booking forms within NZ. Screenshot 3 examples and annotate them in terms of usability, error messages and aesthetics etc.

Answer the following questions in your design log

- Define the purpose of your outcome.
- Who will be the end users?
- What are the client's specifications?
- Identify and describe 3 relevant implications

Step Two: Define / Trello Board (1/2 lesson)

1. Use a Trello Board as your project management tool to help you plan and the development of your program.
2. Break your task into the Design Thinking Steps
3. Decompose your outcome into components and create Trello board tasks for each step

Step Three: Ideate (1/2 lesson)

1. Create a low fidelity wireframe of your GUI using Pencil, seek feedback from your end users / teacher
2. Ideate 3 colour palettes and 3 font options for your GUI
3. Get users to vote on their preferred font/colour options

Step Four: Prototype / Testing (5 lessons)

- Set up your site / images folders
- Create your HTML/CSS/JS files

- Begin creating the GUI with a logo and nav bar / footer

- Each time your writing code you should be **trial multiple components or techniques to determine which one will be best for the overall quality of your outcome. For example, you might trial the use of pop-up menus, text boxes or radio-buttons to get the same information from the user in a GUI. You might assess their quality in terms of functionality, usability, flexibility, interface aesthetic, etc. for your outcome.**

- Create a program that handles expected data first then go about adding in code to handle error message and invalid data

- Once your program correctly calculates the output, create your firebase project to store the data.

- Ensure you are adding descriptive code comments to each section of code as you code (HTML/CSS/JS)

- Clean up your code, **validate and save as a new version** as you continue to add more complexity to your code. Keeping **versions of your html/js** files ensures you have something to reference back to.

Testing Evidence

You need to provide evidence of effectively using the information from testing and trialling to **improve the functionality of the outcome**. You may use your project management tools to record and gather evidence of testing, trialling and feedback.

Alternatively, you could take screen captures, recorded in a simple table showing dates, images and a brief statement identifying the stage of your process. You could also capture the process using screencasts. Whatever approach you use, be sure to annotate/discuss the changes you have made and why.

You must comprehensively test your program and document this process.

Step Six: End User Testing (continual)

1. When you think your program is working as expected, have a range of people test your form – record this.

2. Have you incorporated user suggestions and feedback to improve the usability, aesthetics, and functionality of the program?

3. Seek written feedback from your end users
4. If you make changes, screenshot this and explain why.
5. Provide videos of your testing your GUI with your 5 test cases of data, provide a screenshot of your saved data in firebase, proving that it stores it as expected.

Step Seven: Addressing the implications (1 lesson)

1. Write a final reflection, explain how the information from the planning, testing and trialling of components to develop a high-quality outcome.

2. **Discuss how this information** lead to the development of a high-quality outcome.
3. This should include evidence of how the **outcome addresses relevant implications**