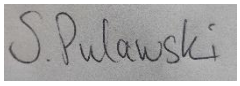
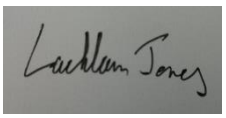
FlyDreamAir Flight Booking System

GROUP 3

MEMBER CONTRIBUTIONS COVER PAGE





Simon Pulawski spp701 Contributed

- Created project charter.
- Created work breakdown structure tasks.
- Created schedule from WBS.
- Managed and updated schedule each week.
- Individual contribution to WSM.
- Individual contribution to WBS Dictionary.
- Chaired 2 meetings, minute taker for 2 meetings.
- Collated report and completed some major report sections (alongside Georgia).
- Completed risk management (alongside Jo).
- Developed COVID-19 info page back-end and html (no styling).
- Contributed to GitHub activities.
- Reviewed and edited OneDrive documents as required.
- Final group presentation.

Georgia Gregg grg954 Contributed

- Wrote All Milestone Reports
- Work Breakdown Structure
- Portion of WBS Dictionary Entries (evenly split between all members)
- Editing and collation of all WBS Entries
- Took minutes at 1 meeting
- Chaired 1 meeting
- CSS & HTML for In-Flight and Confirm Pages
- Selected and wrote image and text content for in-flight page
- After joining the team late, attended all group meetings and actively participated in team decisions and planning
- Represented the group (alongside Kazi and Lachlan) in a ‘client meeting’ breakout session and facilitated an emergency meeting accordingly
- Wrote outline of implemented requirements for the report, and integrated relevant screenshots
- Collated and formatted the report as a whole, alongside Simon which included proofreading everyone’s work and editing where necessary

Lachlan Jones lj428 Contributed

- Assisted in research on data-storage techniques – helped to decide on which technique would be best for our project – in terms of scope and timeline
- Completed an individual WSM
- Collated all individual WSMs from all other group members into one formal WSM justification document
- Assisted in breaking up goals and sub-goals for the back-end programming section of the WBS.
- Wrote the code to implement the IndexedDB database.
- Created the back-end processes in which flights were randomly generated (per database) and stored.
- Assigned members to completing each section of the WBS dictionary
- Completed WBS dictionary definitions that I was assigned
- Implemented a daily flight schedule on the final product using JavaScript, jQuery and IndexedDB
- Took notes for the meeting on the 11th of October
- Implemented a flight management/booking script that interacted with the aforementioned database
- Coded flight selection and storage in the database
- Coded seat selection per flight and storage in the database
- Hosted the meeting on the 18th of October
- Migrated from an old storage technique (the use of JavaScript's 'localStorage' data storage technique) to the IndexedDB API.
- Created customer creation and management sections which includes interactions with the front-end pages created by Jo and Georgia and interactions with the database.
- Other CRUD features (create, remove, update and delete) that apply to customers, flights, and customers booking flights (not any employee aspects).

Jo Baker jab896 Contributed

- Prepared individual Weighted Scoring Model (WSM) and project selection justification to be included within the collated team's WSM and project selection justification document.
- Created the meeting minutes and agenda template for all team members to access.
- Took meeting minutes at 2 meetings, chaired 1 meeting, submitted meeting agenda and minutes each week.
- Reviewed all docs submitted by other team members and made suggestions where appropriate.
- Attended all group meetings and actively participated in team decisions and plans.
- FRONT END: Designed all Photoshop mock-ups for the user interface, created HTML files for all mock-up pages and coded the CSS styling for 8 unique pages.
- Contributed to regular GitHub commits and branch merging and assisted other team members using GitHub.
- Completed my share of the WBS dictionary.
- Completed the Risk Management report in conjunction with Simon.
- Helped prepare for final presentation in our practice demo run-through.

Kazi Swad Abdullah ksa255 Contributed

- Prepared an individual weighted scoring model, that was used to select a suitable project from the list of three projects provided by the instructor. The information from the WSM was later used in the group WSM and the project justification document.
- Prepared the presentation slides for the week 4 verbal progress report which was presented by Lachlan Jones.
- Created the Project Scope Statement-which has been incorporated into the main report.
- Took the meeting minutes for the meeting held on the 13th of September 2020, took appropriate documentation for it and chaired the preceding meeting as well.
- Reviewed all documentation uploaded on the shared drive and provided feedback when necessary.
- Created the Project Business Case Document which included NPV Calculation for our project.
- Completed my entries on the WBS dictionary
- FRONT END: Created the initial container website where we would be able to display the back-end functionalities of our system. This came in handy during the initial brainstorming stage when we were figuring out how our system should function.
- HOSTING: set up a GitHub page for our project, which we used both for version control mechanism and as place where we could host our system as static website. This was a convenient way for all the members to track the progress we had mode on the project.
- BACK END: participated to a lesser extent on the backend functionalities involved in the final deliverable. Some the deliverables included creating an employee management portal to our system, creating functionalities to generate flight paths from the cities involved in our system and any other programming/problem-solving activities where necessary.

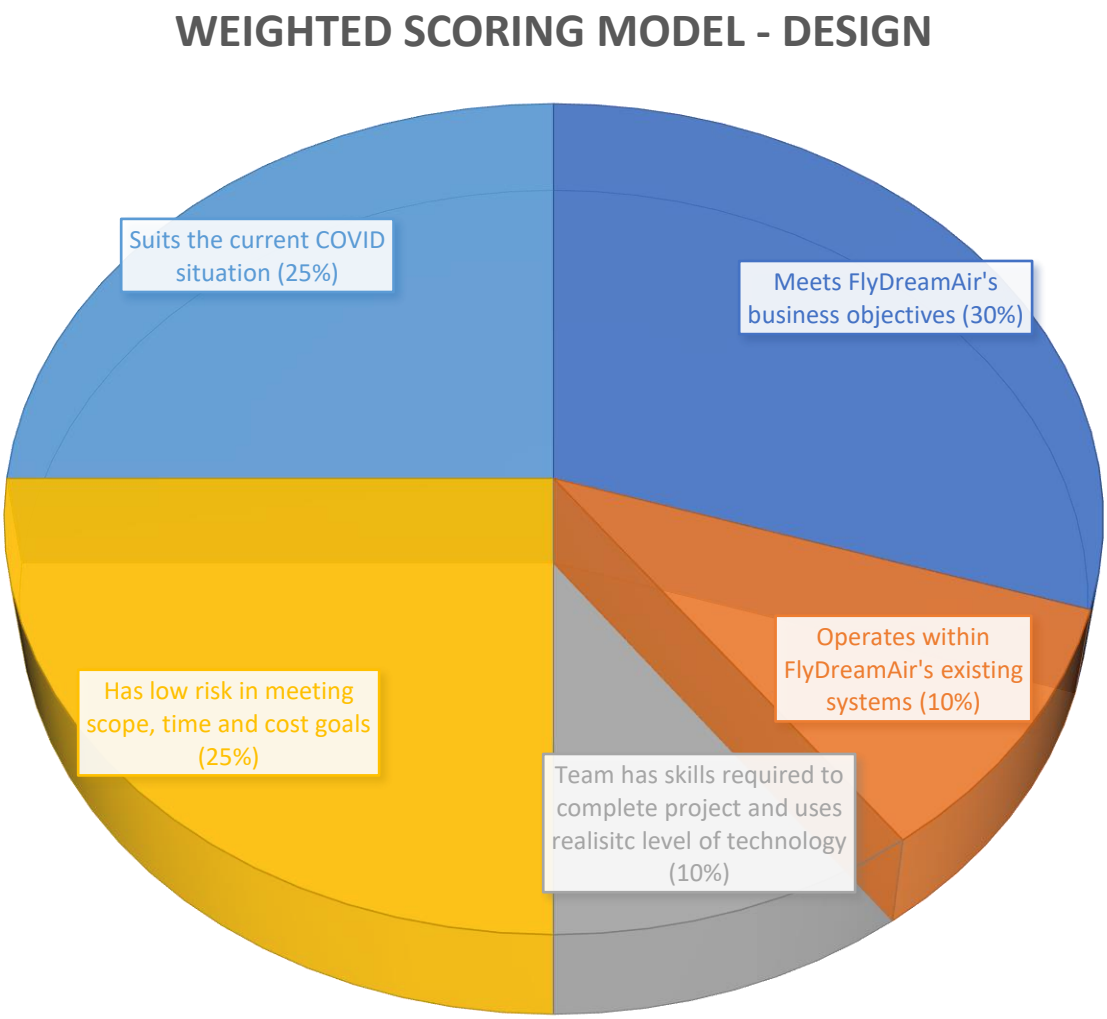
Kye Jones kj871 Very Little

- Prepared an individual WSM and justification to be collated with a team WSM and justification document
- Wrote meeting minutes for one meeting
- Chaired one meeting
- Completed effort estimation using COCOMO II
- Completed share of WBS dictionary
- Reviewed all documentation on shared drive, editing where necessary

Contents

Weighted Scoring Model

Our company has broken up the core components of what we believe a successful and economically beneficial IT undertaking into five different measures (seen below) in the form of a weighted scoring model.



Meets FlyDreamAir's Business Objectives

> *Dream Air Travel is a travel agency provides the highest ethical standard and hospitable service .*
>
> *The company operates in the Philippines with an over 12 years of successful experiences of airline, travel and tourism and aviation industry crew members*
>
> *Dream Air Travel excites you with its booking services fit your personal needs which guarantee your safety, comfort and budget. We value customer relationship and have dedicated friendly staff to ensure hassle-free experience for all passengers, it happens through the entire journey. We handle all booking professionally making sure custom-made itinerary is provided to each client. We deliver fast, reliable and 24/7 customer support and enjoy returns that you expect.*

Meeting FlyDreamAir's business objectives would be the project's number one priority, since said business objectives encompass important project goals, such as enabling a 'hassle-free experience' and valuing customer relationships. Projects that score high in this criterion greatly increase their feasibility.

Operates within FlyDreamAir's Existing System

This criterion is of a lower priority due to the company's current knowledge on FlyDreamAir's current systems. The existing systems that we have analysed and interacted with are unsophisticated, therefore it would not be difficult to integrate a new system with it. However, aspects of the existing system still need to be considered before any project can be selected. Therefore, it is included in the weighted scoring measurement (WSM) design.

Team has skills required to complete the project and uses a realistic level of technology

Our team's skillset exists over a large domain, including database management and design, front end web programming, and graphic design. Consequently, our team can consider many varying project options, as we have the capabilities to complete all of them. Projects that score higher on this criterion display features easily implementable by our team. Projects that score lower contain features that would require the team to study outside of our current domain of knowledge.

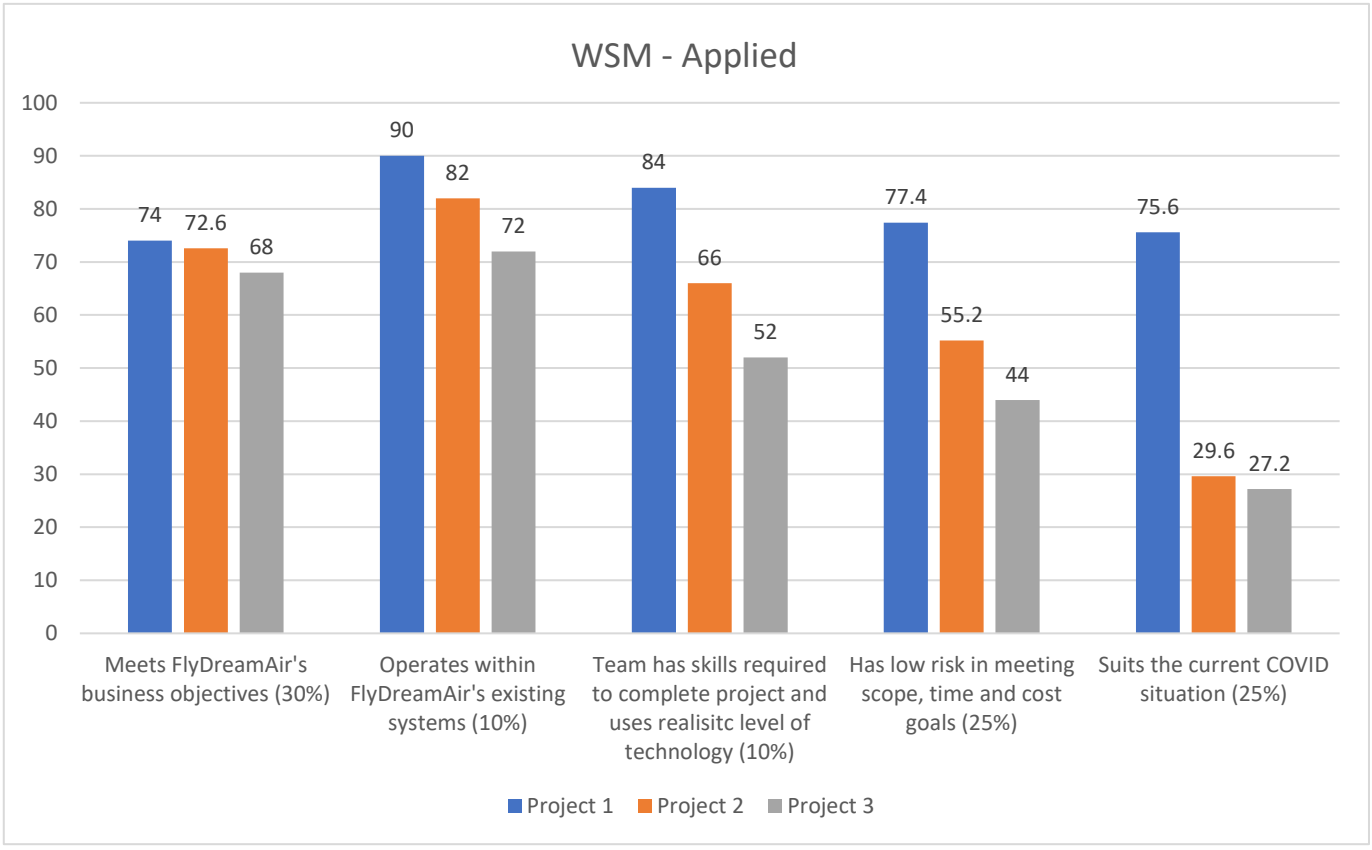
Has low risk in meeting scope, time, and cost goals

This criterion impacts the feasibility of projects immensely. A project with definite signs of not meeting scope, time and/or cost goals is not a viable option. This is due to a lack of success resulting in a lower return on investment, or perhaps a complete failure. Projects must score high in this criterion to be considered.

Suits the current COVID situation

An inability for business to adapt in these unparalleled times will result in significant damage to profit margins. In designing and creating software solutions, businesses must act accordingly. Solutions must appeal to the drastic change in the aviation industry seen in recent months. Consequently, this criterion is of a high weight in the aforementioned WSM.

Application of WSM



Meets FlyDreamAir's business objectives

Each project scored highly in this category as each of the projects is part of FlyDreamAir's business objectives. The flight booking service scored the highest as it is the most core aspect of the services that FlyDreamAir provides, the loyalty program scored second as it is also highly important and complementary to the booking service. The lounge management system scored third as it comes in at a lower priority for FlyDreamAir compared to the other two projects.

Operates within FlyDreamAir's existing system

The loyalty and lounge programs scored lower than the booking service project due to neither of the loyalty and lounge programs fitting into FlyDreamAir's existing systems, if they do not have a flight booking service. The flight booking service scored higher in this category as it builds on FlyDreamAir's existing systems and allows customers to book online.

Team has skills required to complete the project and uses a realistic level of technology

The flight booking system scored the highest as it contains the least moving parts and is the most achievable technologically. Subsequently, the loyalty program follows as the next most complex and the lounge management is the most complex technologically, resulting in the above scorings.

Has low risk in meeting scope, time, and cost goals

Following on from the last category, the flight booking system was deemed to have the lowest risk in meeting scope time and cost goals due to its relative simplicity. The loyalty program and lounge management system followed consecutively.

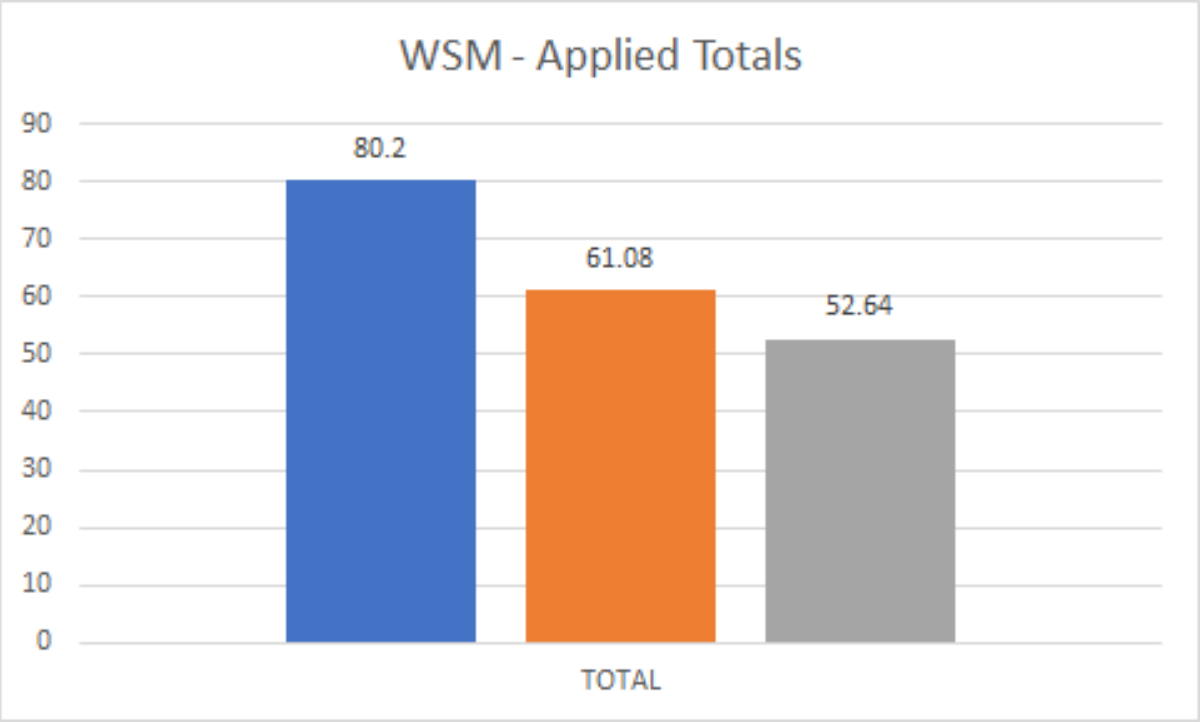
Suits the current COVID situation

FlyDreamAir wish to adapt to the changing environment around them, notably the global COVID-19 pandemic and the impacts it has on businesses. As such, this is an important criterium in selecting a project. The lounge management system was deemed the least appropriate for the current environment as the FlyDreamAir's lounges are sparsely in operation and have been highly affected by social distancing requirements. The loyalty program also scored poorly as customers will not be taking advantage of this system while travel between countries is highly restricted. The flight booking system scored the highest as customer's will still need to book flights occasionally for

essential travel and the booking system will provide a way to do this online rather than booking tickets in person at a travel agent or at a FlyDreamAir branch.

The application of the above WSM leaves us with project 1 as the highest scoring project.

This WSM recommends the selection of project 1 due to its strength in all criteria, making it the most feasible option for stakeholders.



Project Charter

Client	FlyDreamAir		
Project Name	Online Booking System		
Project Sponser	Associate Professor Hoa Khanh Dam	**Project Manager**	Simon Pulawski
Email	hoa@uow.edu.au	**Email**	spp701@uowmail.edu.au
Date of Project Approval	23/08/2020	**Last Revision Date**	**3/11/2018**

Project Description	To develop an IT software system to manage customers and allow them to book flights, manage flight reservations, seat selections, purchasing in-flight services such as food and drinks.		
Objectives (Deliverables)	To deliver an integrated, online booking system which provides FlyDreamAir's customers with a one application solution for booking and managing flights, seat selection and ordering of food and drink both before and in-flight. The booking system should also provide the customer with specific information on COVID-19 restrictions and isolation requirements for the country that they are visiting. The system should be entirly contactless and not require a customer to visit a service centre.		
Schedule	**Project Commencement Date**	23/08/2020	
	Project Completion Date	6/11/2020	
	Project Milestones	Project Commencement Verbal Presentation	28/08/2020
		Intermediary Milestones TBA	
		Final Delivery Date	6/11/2020
Budget	**Personnel**	5 x Developers Full-Time	
		1 x Project Manager Full-Time	
	Total Budget	$10,000.00	

Stakeholder expectations & Success Criteria	**Criteria**	**Priority**
	Customer can book flights	High
	Customer can view and modify booked flights	High
	Customer can book food and drinks before and in-flight	High
	Application provides information on COVID-19 restrictions and isolation requirements	Medium
	Application has an easy to use user interface	High
	Application is highly secure	High
	Project Delivered on time and in budget	High
	All key stakeholders are satisfied	High
	Constant, reliable communcation and reporting	High

Roles & Responsibilities	**Project Team Member**	**Role(s)**
	Kazi Swad Abdullah	Account Manager, Programmer
	Jo Baker	Quality Manager, Graphic Designer
	Kye Jones	Programmer
	Lachlan Jones	Schedule Manager, Programmer
	Simon Pulawski	Project Manager, Schedule Manager
	Georgia Gregg	Graphic Designer

Key Stakeholders	FlyDreamAir representative
	FlyDreamAir IT department
	The End User
Comments	* Budget Adjusted as project progressed * Team member John Zhang replaced by Georgia Gregg * Previously unexpected requirements uncovered when meeting with the client (management page) * Project on track and will be delivered on time * Project will be delivered within budget

Project Scope Statement

The purpose of the Project Scope Statement is to provide a definition for the scope of the project, and includes the project's scope, deliverables and the work required to complete the project.

The Project Scope Statement defines the following:

Project Summary and Justification

Project Characteristics and Requirements

Project Management Deliverables

Product Related Deliverables

Project Success Criteria

Project Summary and Justification:

FlyDreamAir is a major airline which covers both international and domestic routes through their large fleet of aircrafts and the extensive network of travel agencies. Currently, the company is trying to digitize their business processes and operations. Our team has been therefore been designated to develop and implement an online booking system, on which FLYDREAMAIRs customers can manage flights reservations, select seats and purchase inflight services.

Different degrees of permission and access will be granted to customers and staff in order to update, manage, and view reservations. The final system will incorporate a web-based dashboard through which customers can book flights, manage reservations, order inflight services and customize their experience. The web-based application will also contain additional information such as the FLYDREAMAIRS contact details and company history. The final product will reduce costs and increase revenue for the company by making it easier for customers to book flights. The system will also increase customer retention by providing superior service to existing customers. The budget for the system is $200,000, with an estimated benefit of $100,000 every year.

The scope of this project includes all the documentation for requirements gathering, planning, design, development, and implementation of the Online Booking System. The scope of this project also includes the final product which includes a customer friendly online user interface and the functionally implemented backend operations of the interface.

Not included in the scope of this project are ongoing maintenance of the system, implementing a commercial database product, ongoing help desk and/or service support, or hardware/software upgrades.

Project Characteristics and Requirements:

In order to meet the business needs there are several requirements which must be met as part of the successful execution of this project. The following high-level requirements have been identified for the project.

Meets FlyDreamAirs Business Objectives

Operate within FlyDreamAirs existing system

The project must be completed within scope, time and budget

The system must incorporate the current situation with COVID

The project includes all work associated with planning, design, development, and implementation of the online booking system for FlyDreamAir. This includes requirements gathering, conceptual and technical design and coding work, and deployment of the online booking system.

Our project team is comprised of three main programmers who will use their expertise to design, develop and implement the backend functionality of the system. Our team also consists of a web designer who is responsible for the front-end development of the system and an aviation expert who will provide the specific industry knowledge required for completing the project. All the members of the team will aid the project manager and other team members in conceptual and technical design, coding, and deployment of the system. The project manager will ensure that all team members contribute to the project management artifacts required in the project.

Project Related Deliverables

There are several project related deliverables which will be produced as a result of the successful completion of the project. The Project Manager is responsible for ensuring the completion of these deliverables.

Deliverable 1 – Justification for Project Selection

Deliverable 2 – Project Charter

Deliverable 3 – Scope Statement

Deliverable 4 – Business Case

Deliverable 5 – Work Breakdown Structure

Deliverable 6 – Risk Management Document

Deliverable 7 – Cost Estimation

Deliverable 8 – Weekly Updates

Product Related Deliverables

There are several product deliverables which will be produced as a result of the successful completion of the project. If all of the following deliverables are not met, then the project will not be considered successful.

Deliverable 1 – User Interface Prototype

Deliverable 2 – Functional Implementation

Deliverable 3 – User Manual

Deliverable 4 – Other files or programs

Project Success Criteria

Success criteria's have been established for the online booking system to ensure a measure of the successful completion of the project is maintained. The acceptance criteria are mainly qualitative in nature. All acceptance criteria must be met in order to achieve success for this project:

Meet all deliverables within scheduled time and budget tolerances.

The project must pay for itself in 2 years.

Increase customer retention and company revenue.

Must perform all the required tasks without error.

All stakeholders are satisfied with the product.

Risk Management

Risks

	Risk	Probability	Impact	Risk Reduction
R1	Team members leaving	Low	Significant	Teambuilding, honest communication, incentives, check-ins from team leader.
R2	Personnel shortfalls	Significant	Significant	Recruiting top talent, regular training incentives, matching talent with correct tasks.
R3	Unrealistic time and cost estimates	Moderate	Moderate	Using multiple techniques to estimate, analysis of past projects, honest communication with time available when accepting new tasks.
R4	Developing the wrong software functions	Low	Significant	Regular check-ins with team and client, user surveys.
R5	Changes to requirements	High	Significant	Change management, developing features in small increments, open communication.
R6	Poor productivity	Moderate	Significant	Clear action points assigned to specific team members after every team meeting, team members recap tasks they're working on for the week, weekly progress reports, accountability, regularly checking and reminding of deadlines.
R7	Tasks take longer than expected	Significant	Significant	Regular check-ins of task progress, reassignment of team members if necessary.

Risk Management Matrix

Impact	High				
	Significant	R1, R4	R6	R2, R7	R5
	Moderate		R3		
	Low				
		Low	Moderate	Significant	High
		Probability			

PROBABILITY LEVEL	RANGE
High	Greater than 50% chance of happening
Significant	30-50% chance of happening
Moderate	10-29% chance of happening
Low	Less than 10% chance of happening

IMPACT LEVEL	RANGE
High	Greater than 30% above budgeted expenditure
Significant	20 to 29% above budgeted expenditure
Moderate	10 to 19% above budgeted expenditure
Low	Within 10% of budgeted expenditure.

Risk Management Conclusions

After analysis, it was found that our project has an acceptable level of risk. The main risk factor to mitigate is R5 – Changes to requirements, as it falls past the level of tolerance. To mitigate this risk, the team should exercise effective change management by developing features in small increments and practising effective communication at our weekly meetings.

Effort Estimation

In order to estimate the person months, it will take to develop the FlyDreamAir Booking System the COCOMO II Model was utilised. This allowed several factors to be taken into consideration and an accurate estimation to be formed. Analysis of a similar project also aided the effort estimation by providing a better understanding of the requirements.

The size of the project was estimated at 2 (thousands of lines of code). This was developed through the analysis of similar projects that ranged from an estimated 2500 to 5000 lines of code, however, were larger than the planned software. This figure was also accompanied by expert opinion which assessed the requirements of the project.

Scale Factor

The scale factors in COCOMO II is used to essentially describe the project and consists of 5 parameters. Each parameter is categorised as very low, low, nominal, high or very high which all have a corresponding value. The table is shown below:

Driver	Very low	Low	Nominal	High	Very high	Extra high
PREC	6.20	4.96	3.72	2.48	1.24	0.00
FLEX	5.07	4.05	3.04	2.03	1.01	0.00
RESL	7.07	5.65	4.24	2.83	1.41	0.00
TEAM	5.48	4.38	3.29	2.19	1.10	0.00
PMAT	7.80	6.24	4.68	3.12	1.56	0.00 39

The scale factors for the FlyDreamAir Booking System are as follows:

- **Precedentedness** as high with a value of 2.48
- **Development flexibility** as nominal with a value of 3.04
- **Architecture/risk resolution** as very high with a value of 1.41
- **Team cohesion** as nominal with a value of 3.29
- **Process maturity** as nominal with a value of 4.68

Scale factor = 0.91 + 0.01 * (2.48 + 3.04+ 1.41 + 3.29 + 4.68)

Scale factor = 1.069

Effort Multiplier

Effort multipliers are also applied to account for other factors. This consists of 7 parameters and are categorised by extra low, very low, low, nominal, high, very high and extra high. Each parameter has a corresponding value. The table is shown below:

	Extra low	Very low	Low	Nominal	High	Very high	Extra high
RCPX	0.49	0.60	0.83	1.00	1.33	1.91	2.72
RUSE			0.95	1.00	1.07	1.15	1.24
PDIF			0.87	1.00	1.29	1.81	2.61
PERS	2.12	1.62	1.26	1.00	0.83	0.63	0.50
PREX	1.59	1.33	1.12	1.00	0.87	0.74	0.62
FCIL	1.43	1.30	1.10	1.00	0.87	0.73	0.62
SCED		1.43	1.14	1.00	1.00	1.00	

The effort multipliers for the FlyDreamAir Booking System are as follows:

- **RCPX** as high with a value of 1.33
- **RUSE** as very low with a value of null
- **PDIF** as low with a value of 0.87
- **PERS** as high with a value of 0.83
- **PREX** as low with a value of 1.12
- **FCIL** as nominal with a value of 1
- **SCED** as high with a value of 1

Effort multiplier = 1 * 1.33 * 0.87 * 0.83 * 1.12

Effort multiplier = 1.076

Final estimation

Effort = $2.94 * 2^{1.069} * 1.076$

Effort = 6.64 person months

Time to complete = 6.64/6

Time to complete = 1.1 months = 4 weeks 6 days

Details on Project Execution

Schedule

For the FlyDreamAir Booking System project, we implemented a traditional project management method and so Microsoft Project was used to manage schedule, cost and human resources. Please see below excerpts from the Microsoft Project file that show evidence of this tracking. Each of our weekly meeting minutes also shows evidence of project progress and tracking.

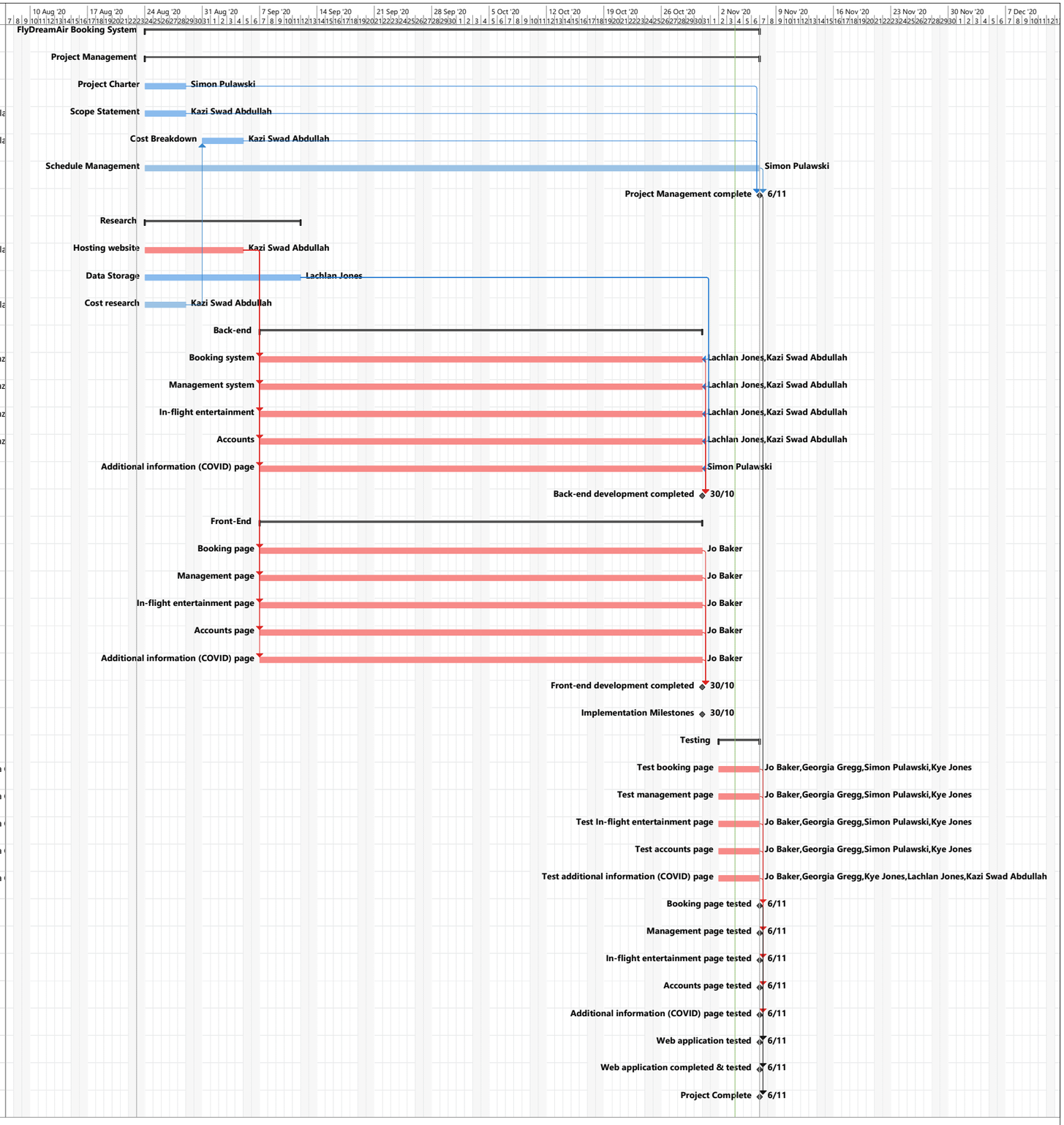
Cost Management

FlyDreamAir Booking System	**$9,768.00**
Project Management	**$816.00**
Project Charter	$96.00
Scope Statement	$96.00
Cost Breakdown	$96.00
Schedule Management	$528.00
Project Management complete	$0.00
Research	**$384.00**
Hosting website	$96.00
Data Storage	$192.00
Cost research	$96.00
Back-end	**$3,840.00**
Booking system	$768.00
Management system	$768.00
In-flight entertainment	$768.00
Accounts	$768.00
Additional information (COVID) page	$768.00
Back-end development completed	$0.00
Front-End	**$3,840.00**
Booking page	$768.00
Management page	$768.00
In-flight entertainment page	$768.00
Accounts page	$768.00
Additional information (COVID) page	$768.00
Front-end development completed	$0.00
Implementation Milestones	**$0.00**
Testing	**$888.00**
Test booking page	$192.00
Test management page	$192.00
Test In-flight entertainment page	$192.00
Test accounts page	$192.00
Test additional information (COVID) page	$120.00
Booking page tested	$0.00
Management page tested	$0.00
In-flight entertainment page tested	$0.00
Accounts page tested	$0.00
Additional information (COVID) page tested	$0.00
Web application tested	$0.00
Web application completed & tested	$0.00
Project Complete	$0.00

Human Resource Management

Resource Name	Work
Unassigned	0 hrs
Lachlan Jones	36.5 hrs
Data Storage	*4 hrs*
Booking system	*8 hrs*
Management system	*8 hrs*
In-flight entertainment	*8 hrs*
Accounts	*8 hrs*
Test additional information (COVID) page	*0.5 hrs*
Kazi Swad Abdullah	40.5 hrs
Scope Statement	*2 hrs*
Cost Breakdown	*2 hrs*
Hosting website	*2 hrs*
Cost research	*2 hrs*
Booking system	*8 hrs*
Management system	*8 hrs*
In-flight entertainment	*8 hrs*
Accounts	*8 hrs*
Test additional information (COVID) page	*0.5 hrs*
Simon Pulawski	33 hrs
Project Charter	*2 hrs*
Schedule Management	*11 hrs*
Additional information (COVID) page	*16 hrs*
Test booking page	*1 hr*
Test management page	*1 hr*
Test In-flight entertainment page	*1 hr*
Test accounts page	*1 hr*
John Zhang	0 hrs
Georgia Gregg	4.5 hrs
Test booking page	*1 hr*
Test management page	*1 hr*
Test In-flight entertainment page	*1 hr*
Test accounts page	*1 hr*
Test additional information (COVID) page	*0.5 hrs*
Kye Jones	4.5 hrs
Test booking page	*1 hr*
Test management page	*1 hr*
Test In-flight entertainment page	*1 hr*
Test accounts page	*1 hr*
Test additional information (COVID) page	*0.5 hrs*
Jo Baker	84.5 hrs
Booking page	*16 hrs*
Management page	*16 hrs*
In-flight entertainment page	*16 hrs*
Accounts page	*16 hrs*
Additional information (COVID) page	*16 hrs*
Test booking page	*1 hr*
Test management page	*1 hr*
Test In-flight entertainment page	*1 hr*
Test accounts page	*1 hr*
Test additional information (COVID) page	*0.5 hrs*

ID	Task Mode	Task Name	Work	Duration	Predecessors	Start	Finish	Resource Names
1		**FlyDreamAir Booking System**	**203.5 hrs**	**55 days**		**Mon 24/08/20**	**Fri 6/11/20**	
2		**Project Management**	**17 hrs**	**55 days**		**Mon 24/08/20**	**Fri 6/11/20**	
3		Project Charter	2 hrs	1 wk		Mon 24/08/20	Fri 28/08/20	Simon Pulawski
4		Scope Statement	2 hrs	1 wk		Mon 24/08/20	Fri 28/08/20	Kazi Swad Abdulla
5		Cost Breakdown	2 hrs	1 wk	11	Mon 31/08/20	Fri 4/09/20	Kazi Swad Abdulla
6		Schedule Management	11 hrs	11 wks		Mon 24/08/20	Fri 6/11/20	Simon Pulawski
7		Project Management complete	0 hrs	0 days	3,4,5,6	Fri 6/11/20	Fri 6/11/20	
8		**Research**	**8 hrs**	**15 days**		**Mon 24/08/20**	**Fri 11/09/20**	
9		Hosting website	2 hrs	2 wks		Mon 24/08/20	Fri 4/09/20	Kazi Swad Abdulla
10		Data Storage	4 hrs	3 wks		Mon 24/08/20	Fri 11/09/20	Lachlan Jones
11		Cost research	2 hrs	1 wk		Mon 24/08/20	Fri 28/08/20	Kazi Swad Abdulla
12		**Back-end**	**80 hrs**	**40 days**		**Mon 7/09/20**	**Fri 30/10/20**	
13		Booking system	16 hrs	8 wks	9,10FF	Mon 7/09/20	Fri 30/10/20	Lachlan Jones,Kaz
14		Management system	16 hrs	8 wks	9,10FF	Mon 7/09/20	Fri 30/10/20	Lachlan Jones,Kaz
15		In-flight entertainment	16 hrs	8 wks	9,10FF	Mon 7/09/20	Fri 30/10/20	Lachlan Jones,Kaz
16		Accounts	16 hrs	8 wks	9,10FF	Mon 7/09/20	Fri 30/10/20	Lachlan Jones,Kaz
17		Additional information (COVID) page	16 hrs	8 wks	9,10FF	Mon 7/09/20	Fri 30/10/20	Simon Pulawski
18		Back-end development completed	0 hrs	0 days	13,14,15,16,17	Fri 30/10/20	Fri 30/10/20	
19		**Front-End**	**80 hrs**	**40 days**		**Mon 7/09/20**	**Fri 30/10/20**	
20		Booking page	16 hrs	8 wks	9	Mon 7/09/20	Fri 30/10/20	Jo Baker
21		Management page	16 hrs	8 wks	9	Mon 7/09/20	Fri 30/10/20	Jo Baker
22		In-flight entertainment page	16 hrs	8 wks	9	Mon 7/09/20	Fri 30/10/20	Jo Baker
23		Accounts page	16 hrs	8 wks	9	Mon 7/09/20	Fri 30/10/20	Jo Baker
24		Additional information (COVID) page	16 hrs	8 wks	9	Mon 7/09/20	Fri 30/10/20	Jo Baker
25		Front-end development completed	0 hrs	0 days	20,21,22,23,24	Fri 30/10/20	Fri 30/10/20	
26		**Implementation Milestones**	**0 hrs**	**0 days**		**Fri 30/10/20**	**Fri 30/10/20**	
33		**Testing**	**18.5 hrs**	**5 days**		**Mon 2/11/20**	**Fri 6/11/20**	
34		Test booking page	4 hrs	1 wk	27	Mon 2/11/20	Fri 6/11/20	Jo Baker,Georgia
35		Test management page	4 hrs	1 wk	28	Mon 2/11/20	Fri 6/11/20	Jo Baker,Georgia
36		Test In-flight entertainment page	4 hrs	1 wk	29	Mon 2/11/20	Fri 6/11/20	Jo Baker,Georgia
37		Test accounts page	4 hrs	1 wk	30	Mon 2/11/20	Fri 6/11/20	Jo Baker,Georgia
38		Test additional information (COVID) page	2.5 hrs	1 wk	31	Mon 2/11/20	Fri 6/11/20	Jo Baker,Georgia
39		Booking page tested	0 hrs	0 days	34	Fri 6/11/20	Fri 6/11/20	
40		Management page tested	0 hrs	0 days	35	Fri 6/11/20	Fri 6/11/20	
41		In-flight entertainment page tested	0 hrs	0 days	36	Fri 6/11/20	Fri 6/11/20	
42		Accounts page tested	0 hrs	0 days	37	Fri 6/11/20	Fri 6/11/20	
43		Additional information (COVID) page tested	0 hrs	0 days	38	Fri 6/11/20	Fri 6/11/20	
44		Web application tested	0 hrs	0 days	39,40,41,42,43	Fri 6/11/20	Fri 6/11/20	
45		Web application completed & tested	0 hrs	0 days	32,44	Fri 6/11/20	Fri 6/11/20	
46		Project Complete	0 hrs	0 days	45,7	Fri 6/11/20	Fri 6/11/20	



Project: FlyDreamAir
Date: Thu 5/11/20

Task
Split
Milestone
Summary
Project Summary
Inactive Task
Inactive Milestone
Inactive Summary
Manual Task
Duration-only
Manual Summary Rollup
Manual Summary
Start-only
Finish-only
External Tasks
External Milestone
Deadline
Critical
Critical Split
Progress
Manual Progress

Work Breakdown Structure

Phase 1 Project Management

1.1 Project Charter
1.2 Scope Statement
1.3 Cost Breakdown
1.4 Schedule Management

Phase 2 Research

2.1 Hosting Solution
2.2 Data Storage
2.3 Cost Research

Phase 3 Back-end

3.1 Booking Page
3.2 Management Page
3.3 In-Flight Entertainment Page
3.4 Account Page
3.5 Additional Info (COVID) Page

Phase 4 Front End

4.1 Booking Page
4.2 Management Page
4.3 In-Flight Entertainment Page
4.4 Account Page
4.5 Additional Info (COVID) Page

Phase 5 Implementation & Testing

5.1 Integration of Front and Back
5.2 Booking Page Testing
5.3 Management Page Testing
5.4 In-Flight Entertainment Page Testing
5.5 Account Page Testing
5.6 Additional Info (COVID) Page Testing

WBS Dictionary

WBS Dictionary Entry 24th August 2020
Project Title: FlyDreamAir Online Booking System
WBS Item Number: 4
WBS Item Name: Scope Statement
Description: The definition of the project scope is defined in the deliverable from this work breakdown schedule deliverable. This document describes the scope of the project itself, justification for the definition of this scope, project characteristics and requirements, the deliverables that will be produced by the end of the project (either product related of management related), and the project success criteria.

WBS Dictionary Entry 24th August 2020
Project Title: FlyDreamAir Online Booking System
WBS Item Number: 6
WBS Item Name: Schedule Management
Description: Schedule Management refers to the ongoing awareness of, conformity to, and adjustment of, the project's progress, with particular reference to the expected progression of tasks as outlined in Gantt Chart. Schedule Management requires all members to participate in regular (eg. weekly) meetings to evaluate the progress of deliverables and achievement of milestones. Based on these in-meeting evaluations, meeting minutes should be written, and clear action points set to ensure work continues to progress in line with the Gantt Chart. The Gantt Chart should also be adjusted to reflect the true expectations of progress if need be.

WBS Dictionary Entry 24th August 2020
Project Title: FlyDreamAir Online Booking System
WBS Item Number: 10
WBS Item Name: Data storage - research
Description: This item requires team members to research how we are going to store our data. This involves researching such data storage techniques as databases and servers, and other alternatives such as JavaScript local storage. Team members are required to learn about these different types of data storage techniques and then decide on which technique to use in our system.

WBS Dictionary Entry 24th August 2020
Project Title: FlyDreamAir Online Booking System
WBS Item Number: 11
WBS Item Name: Cost Research
Description: The purpose of the cost research section is to provide a breakdown of all the expenses that are borne during the development of the system. To investigate this, we made assumptions based on similar projects that have been completed, that were of a similar scope, time, and budget. We found that the major cost of any IT system project was the cost associated with labour, followed by software, training and other costs. The operational cost was the ongoing cost of providing support to the customer, whenever it will be required.

WBS Dictionary Entry 24th August 2020
Project Title: FlyDreamAir Online Booking System
WBS Item Number: 9
WBS Item Name: Hosting Website
Description: The purpose of this section was to investigate all the options for hosting the system online. We decided to go with the most cost-effective solution, however this was not a requirement for our project, we decided that it would be a convenient way to implement version control and for the team to collaborate with one another. It was also a way that everyone could track the progress we have made on the project in real time. We decided to host the website on GitHub for free using a domain name that we bought online at a very affordable price.

WBS Dictionary Entry 31st August 2020
Project Title: FlyDreamAir Online Booking System
WBS Item Number: 5
WBS Item Name: Cost Breakdown
Description: The purpose of the cost breakdown is to provide justification in terms of the quantitative costs of implementing a project and/or solution. It is used to estimate the viability of the project in terms of the net present value solution. For our project, we assumed a discount factor of 7%, for all our yearly total costs, including the initial development cost. The initial development cost and the yearly operating cost have been explained in the cost research section. The cost breakdown is used to illustrate the costs incurred each year the system will be in use, until the benefits of the project make up for the total incurred costs.

WBS Dictionary Entry 7th September 2020
Project Title: FlyDreamAir Online Booking System
WBS Item Number: 13
WBS Item Name: Booking system – Back end programming
Description: This WBS item requires team members to create the back-end functionalities of the booking systems. Involved in this item is the programming of an array in the user object which holds all booked flights, as well as the creation of flight objects, which can be selected by users and added into their own object array. These objects need to be stored for later use through interactions with JavaScript local storage.

WBS Dictionary Entry 7th September 2020
Project Title: FlyDreamAir Online Booking System
WBS Item Number: 16
WBS Item Name: Accounts – Back end programming
Description: Requires the team to program all aspects of user accounts, such as account creation, password storage and email storage. Login functionality must be programmed as well, using user arrays and interactions with JavaScript local storage. All arrays to store any information related to the user and their purchase must be stored in the user accounts object. Any interaction with the system will involve interaction with the accounts system.

WBS Dictionary Entry 7th September 2020
Project Title: FlyDreamAir Online Booking System
WBS Item Number: 20
WBS Item Name: Booking page
Description: The booking page on the web application serves two purposes. Firstly, it will display the results of the search initiated by a user of the application, and secondly it serves as a gateway into the booking process. While the name of this item suggests it is a single page, this is not the case, rather it is a collection of pages: a search form page, a search results page, and the selection of flights page/s. There will be a main page with a search form that the user can select flight details specific to their needs. Once the user submits the form, they will be directed to the search results page that lists flights that fit the criteria that they entered. If the flight is one-way, this will be one page of flights along with a confirmation page. If the user requires a return flight, there will be an additional flight selection page. The user will be informed of specific flight details and be informed of the total price on the confirmation page. This task involves the front-end design of the booking page (including all necessary pages to complete this task), i.e. the HTML coding and CSS styling. Appropriate images and icons may need to be sourced or created to contribute to the aesthetics of the application.

WBS Dictionary Entry 7th September 2020
Project Title: FlyDreamAir Online Booking System
WBS Item Number: 21
WBS Item Name: Management page
Description: The management page is where a user can manage their booking and it sits within the account page (WBS item 23). The user can visit this page once they have registered an account (by making a booking), and have logged in. On this section of the accounts page, a user will be able to edit their seat selection and their in-flight refreshments/entertainment. The user will be able to see their booked flights, and access information regarding cancelling or changing their flights. This task involves the front-end design of the management section of the accounts page, i.e. the HTML coding and CSS styling. Appropriate images and icons may need to be sourced or created to contribute to the aesthetics of the application.

WBS Dictionary Entry 7th September 2020
Project Title: FlyDreamAir Online Booking System
WBS Item Number: 22
WBS Item Name: In-flight entertainment page
Description: The in-flight entertainment page leads the user through a series of pages related to selections they can make once they have confirmed their flight/s. Firstly, they will be able to select their preferred seat (via a dropdown), then they will be able to select in-flight refreshments (food and drink) and in-flight entertainment (via a series of checkboxes). They will only be able to select one seat per person, but they may select multiple in-flight options or none if they prefer. The user will be informed of the price. Once all selections have been made, the user will be directed to a passenger information page where they must fill in the details of the passengers and nominate a booking contact. The booking contact will become the registered user of the application who can login and manage the booking. The final page is the payment page where the user confirms their selections and makes payment. Once payment has been made, they will be directed to their accounts/management page. This task involves the front-end design of the in-flight entertainment page (including all necessary pages to complete this task), i.e. the HTML coding and CSS styling. Appropriate images and icons may need to be sourced or created to contribute to the aesthetics of the application.

WBS Dictionary Entry 7th September 2020
Project Title: FlyDreamAir Online Booking System
WBS Item Number: 23
WBS Item Name: Accounts page
Description: The accounts page within the web application can be accessed once a registered user has logged in. On the page, the user will be able to edit their personal details such as name, email, and password. The page will also contain the management page (WBS Item 21). This task involves the front-end design of the accounts page, i.e. the HTML coding and CSS styling. Appropriate images and icons may need to be sourced or created to contribute to the aesthetics of the application.

WBS Dictionary Entry 7th September 2020
Project Title: FlyDreamAir Online Booking System
WBS Item Number: 14
WBS Item Name: Management System
Description: The management system is in place for users to manage all aspects of their flight. This will be done by logging in to their account, where the individuals flight information is stored. From here the user is able to modify their flights, as well as their in-flight entertainment. Passenger details can also be updated at any time.

WBS Dictionary Entry 5th October 2020
Project Title: FlyDreamAir Online Booking System
WBS Item Number: 27
WBS Item Name: Implement booking page
Description: The team is required to merge the back-end functionality with the front-end html and CSS coding. To complete this task, each page must refer to a JavaScript source file. In addition, IDs are referenced from the html code in the JavaScript file to create button functionality, search functionality, and any other type of user interactivity that is the systems is required to provide.

WBS Dictionary Entry 26th October 2020
Project Title: FlyDreamAir Online Booking System
WBS Item Number: 41
WBS Item Name: Test In-Flight Entertainment Page
Description: The purpose of the section is to test the inflight entertainment page in great detail and to discover if there are any issues that are needed to be resolved, or if there are any improvements that are needed to be made. We conducted the testing within ourselves and all the team members contributed equally to the feedback process.

WBS Dictionary Entry 30th October 2020
Project Title: FlyDreamAir Online Booking System
WBS Item Number: 26
WBS Item Name: Implement Additional Information (COVID) Page
Description: To show the relevant information for each state on this page, the front end code needs to be connected to the backend java script code that will respond to the select form on the page. The COVID information will be displayed using the front-end set CSS styling, and the connected javascript will allow the text content of the information displayed to change accordingly as the selection is changed.

WBS Dictionary Entry 30th October 2020
Project Title: FlyDreamAir Online Booking System
WBS Item Number: 30
WBS Item Name: Implement accounts page
Description: This task requires the merging of the front-end accounts page with the back-end functionality. There will be a HTML page where functional elements will contain IDs and classes. Additionally, there will be an external JS page to implement the required functionality, and an external CSS file that contains the styling of the web application.

WBS Dictionary Entry 30th October 2020
Project Title: FlyDreamAir Online Booking System
WBS Item Number: 28
WBS Item Name: Implement Management System
Description: This task requires the front-end and back-end to merge in order to function. To complete this task the details of the flight must be displayed using html, css and javascript. When a detail is changed, it will be updated in the backend using javascript.

WBS Dictionary Entry 30th October 2020
Project Title: FlyDreamAir Online Booking System
WBS Item Number: 32
WBS Item Name: Testing Additional Information (COVID) Page
Description: To ensure the system is functioning correctly, all pages need to be tested. The purpose of testing the COVID Information Page is to ensure the CSS and HTML executes correct visual representation of the elements in accordance with early visual mockups. The functionality of the page is to be tested also, making sure the javascript connects to the page and executes in a way that implements correct display of information responsive to the state selection box.

Milestone Reports

Project Management Setup

Reference Number: Milestone 1

Description:

The achievement of this milestone is indicated by the completion of initial project management deliverables required for planning and starting the project. The deliverables required to signify the achievement of this milestone include items from the WBS/Gantt Chart sections *Project Management* and *Research*.

Deliverables:

In no particular order:

Project Charter	WSM	Meeting Minutes Template
Scope Statement	Application of WSM	Data Storage Solution
Gantt Chart	WBS	Hosting Solution
Cost Breakdown	Cost Management	
Risk Assessment	Human Resource Management	
Risk Matrix	Effort Estimation	

Trend: Progressing

Progress leading up to the achievement of this milestone went smoothly. Trend isn't easily negatively influenced at such an early stage since there's no set of pre-requisite tasks to threaten delay.

Tolerance:

5 days – there is some room at this early stage to delay the project without dramatic repercussions, however it is imperative that this milestone be achieved ASAP since it directly affects the definition and setup of the project, and therefore its starting point.

Expected Date:	**Actual Date:**	**Variance:**
Friday September 11th	Monday September 7th	4 business days (early)

Issues and Comments:

The successful collaboration of team members and distribution of workload allowed for this milestone to be achieved ahead of schedule. Note that WBS Item 'Schedule Management' can be considered part of the initial project management tasks, but since it is an ongoing task that can't officially end until the project is complete, it has been omitted to ensure this milestone is achievable.

Front-End Build

Reference Number: Milestone 2

Description:

The achievement of this milestone is indicated by the completion of the front end components (to the extent achievable without backend attachment, ie, in isolation from the functioning system)

Deliverables:

Visual Mockups for all pages
HTML for all pages
CSS for all pages

Trend: Progressing

Progress leading up to the achievement of this milestone went smoothly. The addition of a new team member with prior experience in CSS and HTML helped move this project along quicker than expected

Tolerance:

Tolerance for this milestone is extended and varied. There is tolerance for some pages to be completed in the 3 deliverable stages for this milestone (mockup, html, css). The delay of each page's front end somewhat affects the progress of coding the backend for the same page, but there's no real concern until closer to the project's deadline if this milestone is not completed in full.

Mockups: 5 days

HTML and CSS Complete for at least some pages: 10 after mockups completed

HTML and CSS Complete for ALL pages: 20 days

Expected Date:	**Actual Date:**	**Variance:**
(full completion for all pages)		
Friday October 30th	Tuesday November 3rd	2 business days

Issues and Comments:

The distribution of workload between Jo and Georgia, as well as the flexibility of the back-end team members to access and work on pages as they were front-end completed one by one allowed for this milestone to be achieved through consistent progress across the duration of the project.

Back-End Build

Reference Number: Milestone 3

Description:

The achievement of this milestone is indicated by the completion of all back end components (to the extent achievable without front end attachment, ie, in isolation from the visual and HTML components)

Deliverables:

Working code for all system functionalities on all pages:

Working in-browser database (using IndexedDB) to perform basic CRUD procedures (create, remove, update and delete)

- Register – interaction with the customer table in the database to create users.
- Customer log in – interaction with the customer table to update users.
- Employee log in – currently reliant on customer table, new table to be added in next sprint.
- Flight generator – randomly generates flights and stores them in the database.
- Flight bookings – create and update interaction with the customer table and the flight table.

COVID-19 Information – JavaScript and jQuery code with information on each state hard-coded into the script.

Trend: Progressing

The distribution of workload between Lachlan, Simon, and Kazi, allowed for this milestone to be achieved through consistent progress across the duration of the project. Collaboration with the front-end team Jo and Georgia also enabled the back-end to be coded with overall functionality according to the HTML design in mind.

Tolerance:

Like the front end, tolerance for this milestone is extended and varied. It is imperative that the functionalities in the deliverables list here be consistently completed as the project progresses to ensure the components will be ready for integration as the front end aspects are finished. However, it is acceptable for the completion of *all* functionalities (therefore this milestone) to be delayed slightly.

3 business days

Expected Date:	**Actual Date:**	**Variance:**
Friday October 30th	Tuesday November 3rd	2 business days

Issues and Comments:

The impact front end design had on exactly how backend functionality needed to be coded (and vice versa) had some impact on the timeline for achieving this milestone. There were some cases where overall structure needed to be adapted to ensure this milestone would be achievable. The backend

team worked tirelessly, and adapted well to sudden and unexpected changes in the schedule management to ensure the milestone was achieved before the point of risking the project's completion.

Integration of Front and Back

Reference Number: Milestone 4

Description:

The achievement of this milestone is indicated by the connection of back end and front end aspects of the system, to allow for the testing phase. Note that this milestone does not require perfect, successful functioning of the connected aspects, just the integration of them to each other.

Deliverables:

All front end and back end code set up to call each other where necessary, ie, any 'placeholder' code that wasn't needed to build the aspects in isolation from each other has now been removed/replaced.
(eg, HTML files should now contain correct links to JavaScript files where required).
GitHub repository should be completely up-to-date and contain all necessary files.
Live site should be running all front and back end components, live and ready for testing.

Trend: Progressing

The distribution of workload between front end and back end teams, as well as the flexible knowledge base of key team members allowed for functionalities to be connected page by page as milestones 2 and 3 neared completion, with extra work put it after their completion to ensure this goal could be achieved in time for testing as per the schedule.

Tolerance:

Tolerance for this milestone is low, since it directly affects the final testing phase as we approach the deadline for the completion of the project as a whole.

3 business days

Expected Date:	**Actual Date:**	**Variance:**
Friday October 30th	Wednesday November 4th	3 business days

Issues and Comments:

The impact front end design had on exactly how backend functionality needed to be coded (and vice versa) had some impact on the timeline for achieving this milestone. There were some cases where overall structure needed to be adapted to ensure this milestone would be achievable. The backend team worked tirelessly, and adapted well to sudden and unexpected changes in the schedule management to ensure the milestone was achieved before the point of risking the project's completion.

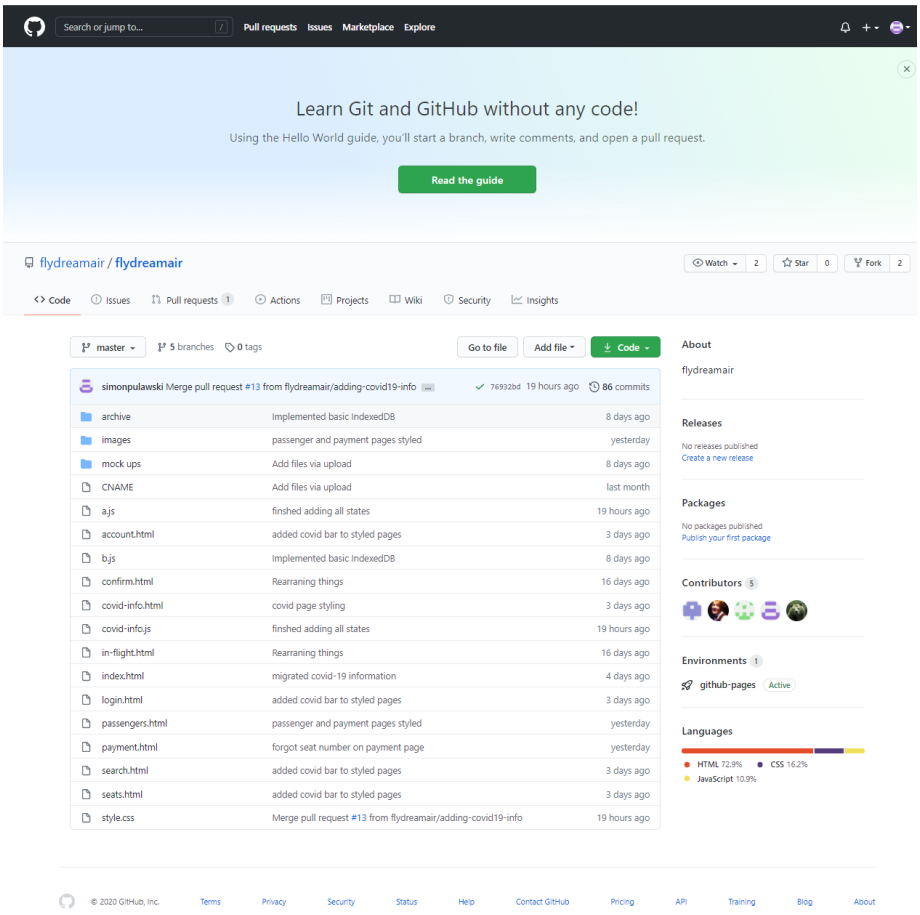
Version Control

For our project we employed GitHub as our version control service. Each developer in our team would work on their code on their local machine and would perform commits of the work they had finished. The developers would then push their commits on their local machine to our online repository on GitHub. Changes were often major and would require their own branch and so the developers would post these changes and then submit a pull request on GitHub for their changes to be merged into the master branch, which is the branch that is being hosted live at https://flydreamair.xyz/ . Typically, when a developer made a pull request, another developer would review and confirm the pull request so that we had some method of verification and checking.

To view our team's project source code and GitHub, please visit https://github.com/flydreamair/flydreamair . Please also see below some excerpts from our GitHub page showing evidence of our effective use of version control.

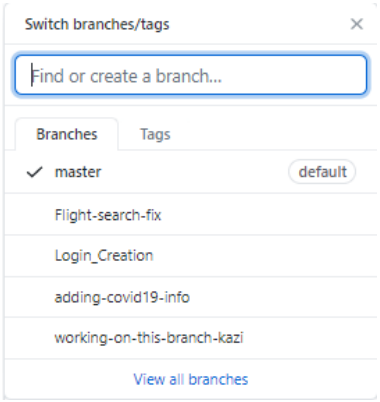
Main Page

The main page shows our master branch which is hosted at https://flydreamair.xyz . The main page also shows evidence of our commits, contributors and show a pull request.



Branches

The below screenshot is indicative of our use of branches. Because branches were often deleted after they were merged into master, this is not an exhaustive list of all the branches used in the project.

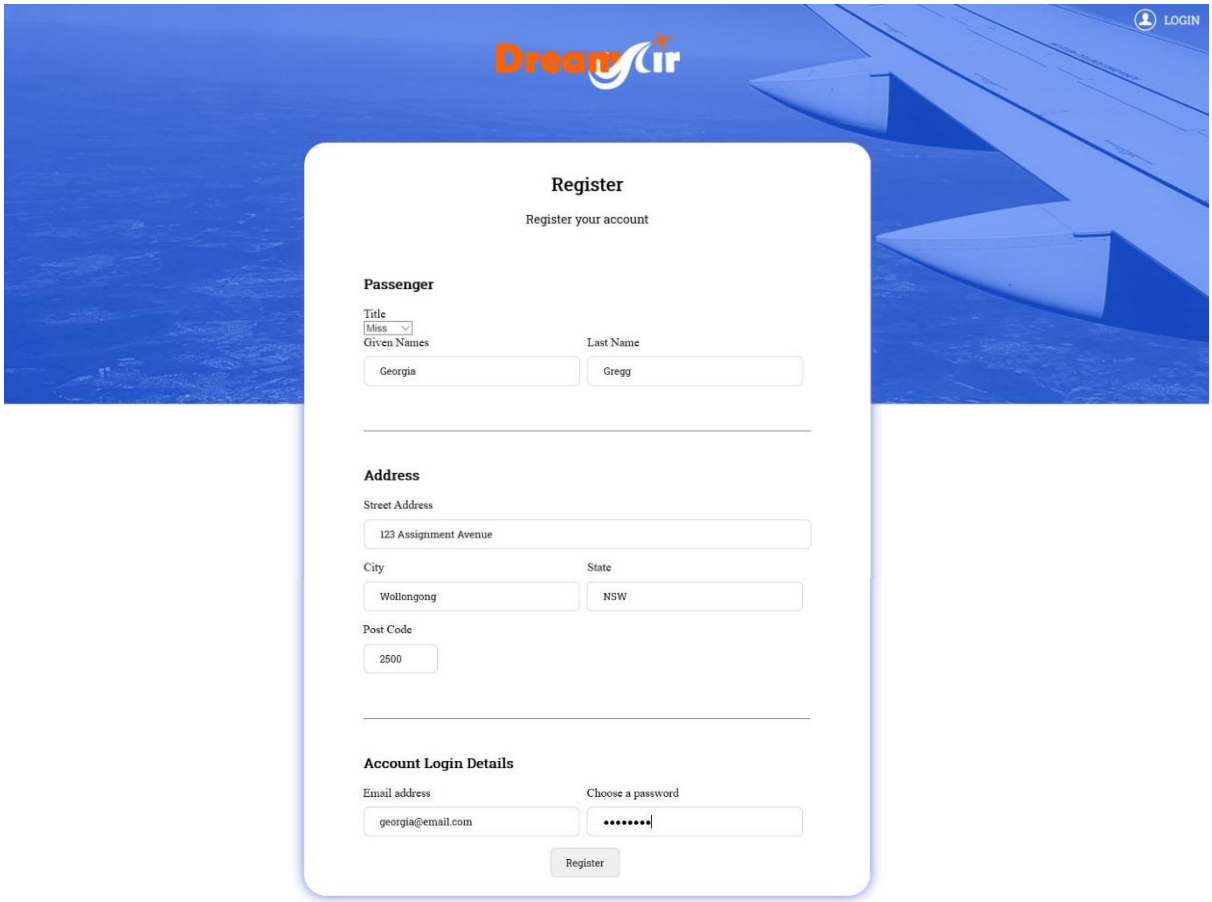


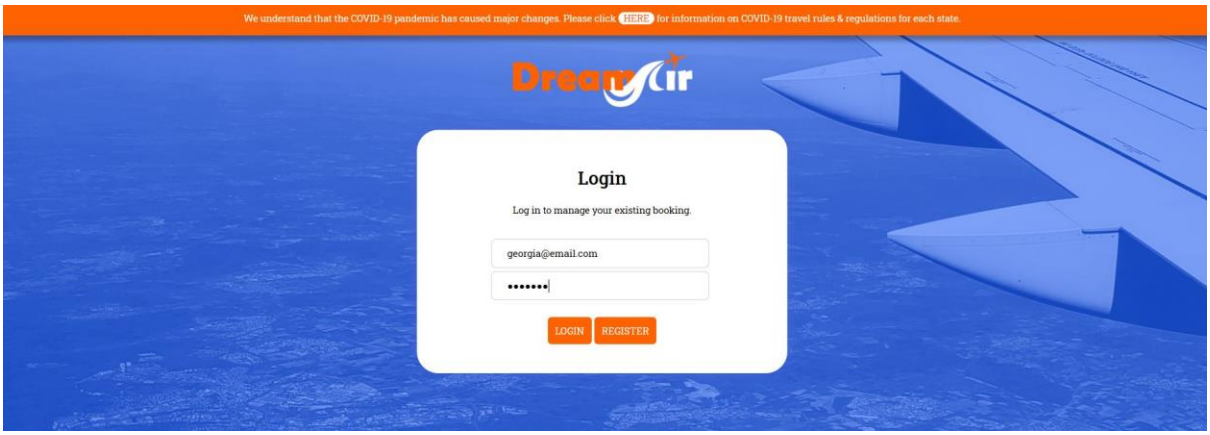
The Working Prototype

The live FlyDreamAir site can be accessed at https://flydreamair.xyz/index.html

Register Customer Account

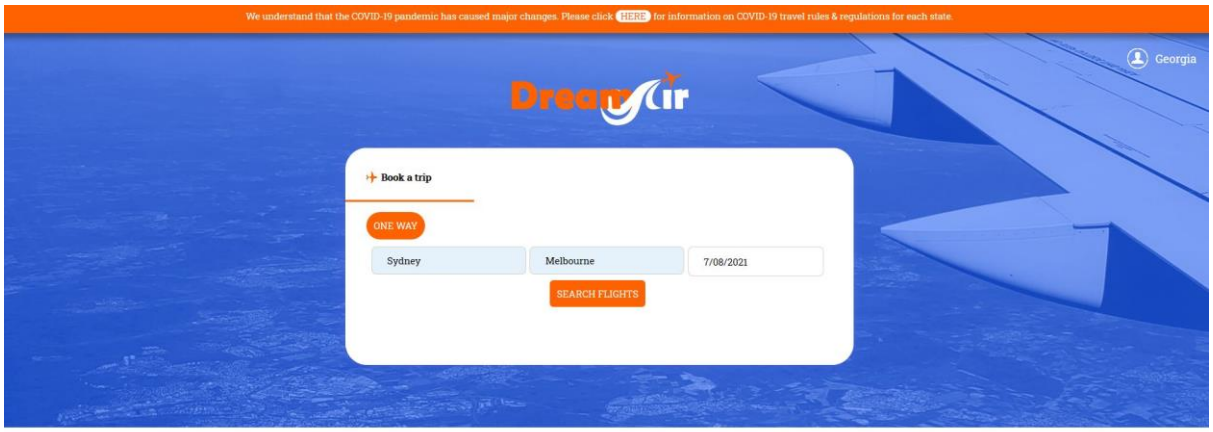
Customers can register an account and later log in and out of the account using their email and password. All fields are required and registration will not execute if missing values.

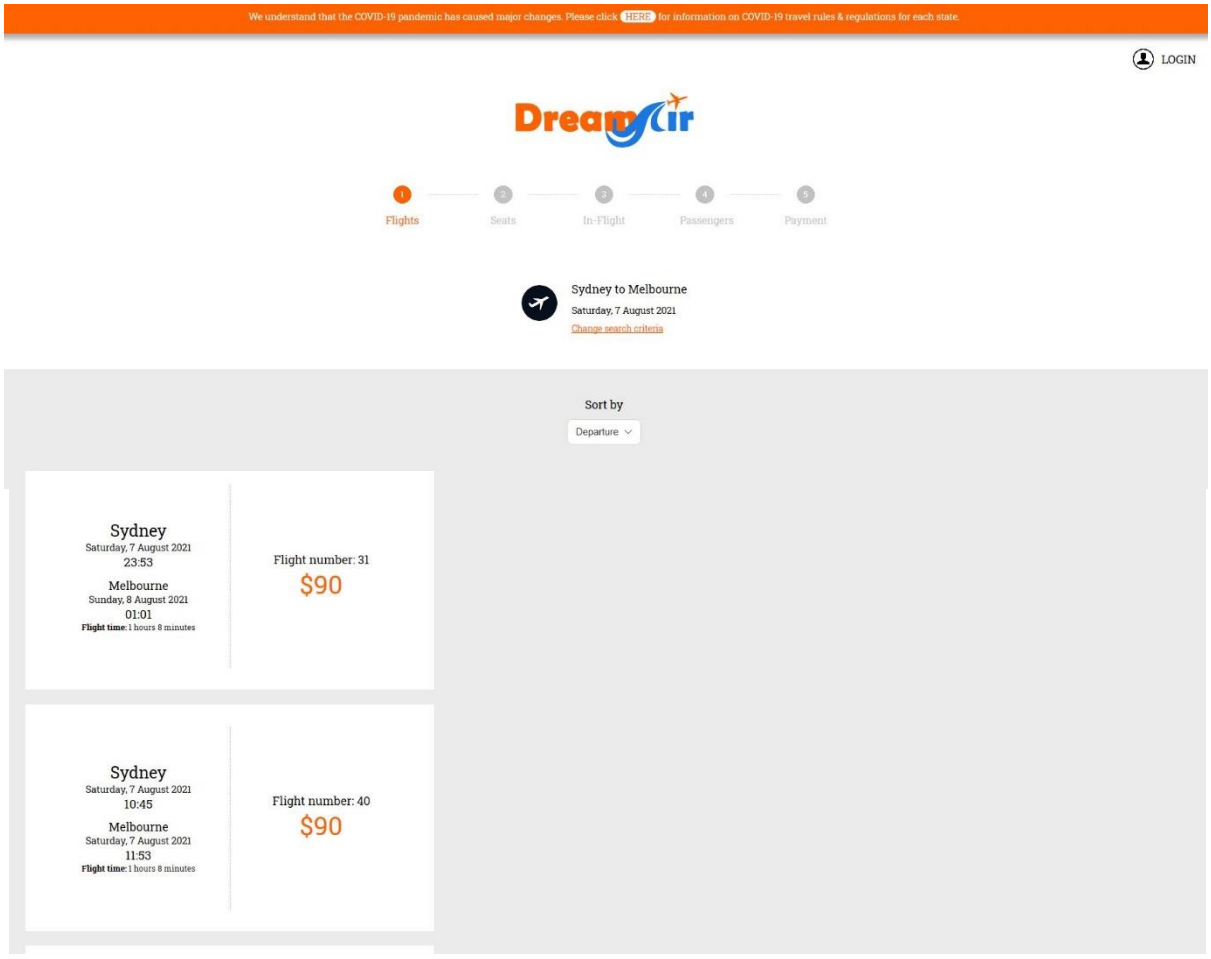




Search for Flights

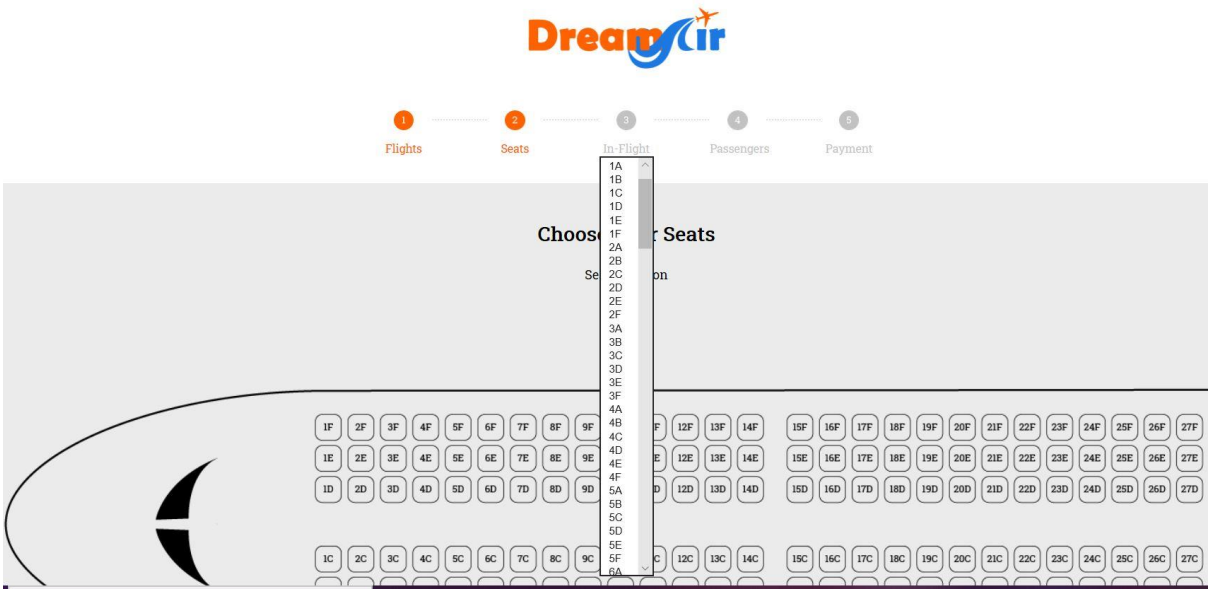
Customers can search for flights using departure, destination, and date values. Again, all fields are mandatory and a search cannot be executed with missing information. We implemented a flight generator to simulate the real-life experience of varying departure times and number of flights available on any given day.





Seat Selection

Customers can select their seat on the plane, and the selection will be added to their booking



In-Flight Selection

Customers can select from 4 categories of in-flight extras: Something Substantial, Something Light, Drinks, and Entertainment. Like the seat selection, these details will be added to the customer's booking record. The bottom of the page will display a total cost for the items selected.

(see over page)

DreamAir

1 Flights — 2 Seats — 3 In-Flight — 4 Passengers — 5 Payment

Choose Your In-flight Options

SOMETHING SUBSTANTIAL

NONE

Pesto Pasta

penne pasta in a pesto sauce with cherry tomatoes

Beef Lasagna

Traditional Beef Lasagna with a side salad

Baked Salmon

Baked Salmon, served with mixed vegetables

SOMETHING LIGHT

NONE
CRUMBLY CAKE
DELICIOUS WRAP
FRUIT SALAD

$7.95

Crumbly Cake

small piece of carrot cake with cream cheese frosting

$7.95

Delicious Wrap

chicken and salad wrap with aioli

$7.95

Fruit Salad

a fresh mix of australian grown fruits

SOMETHING TO DRINK

SPRITE

$3.00

$3.00

$3.00

SOME ENTERTAINMENT

FINDING NEMO

$10.50

50 First Dates

romantic comedy with an all star cast

$10.50

Finding Nemo

something for the whole family to enjoy

$10.50

The Notebook

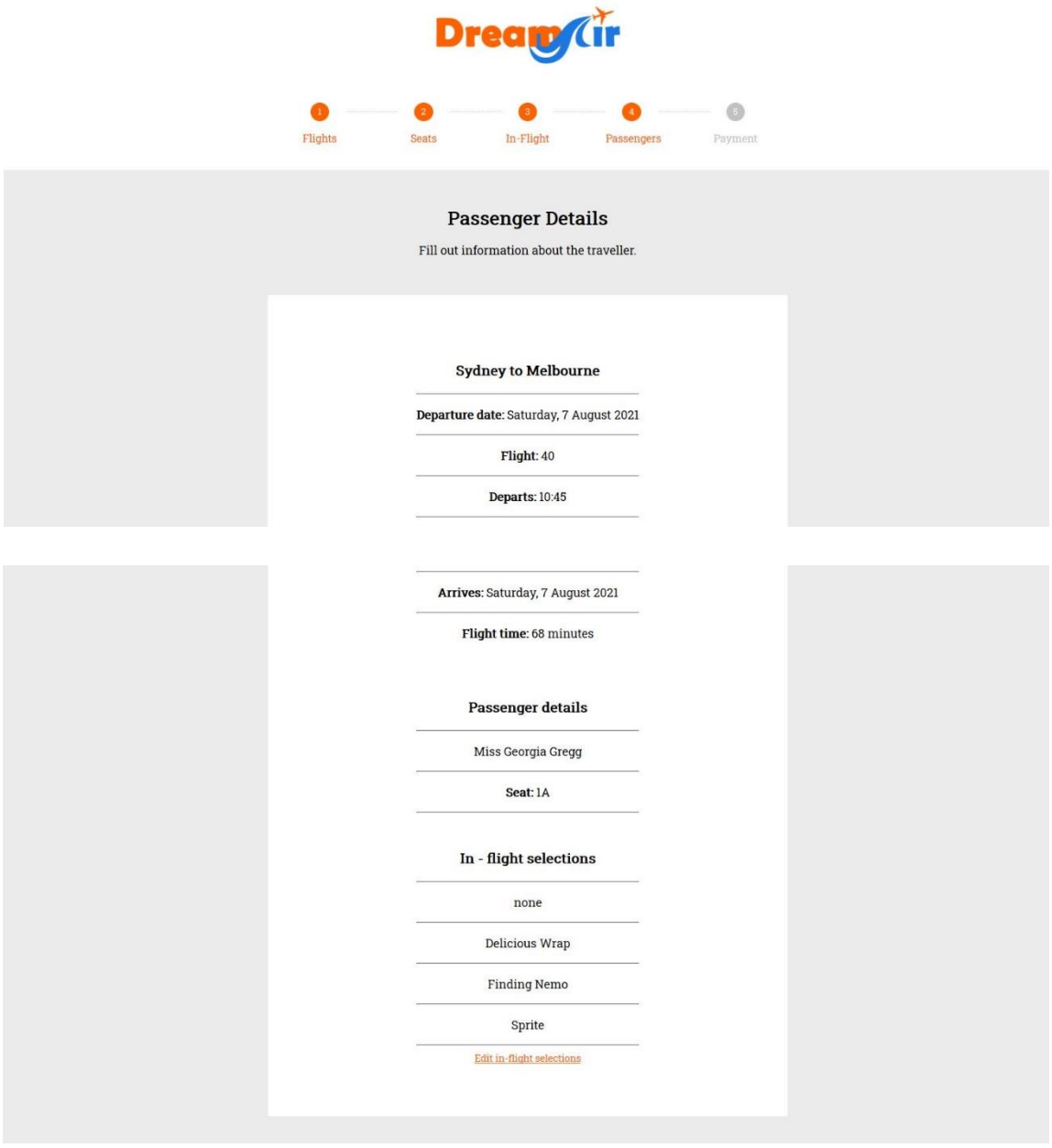
a romantic drama based on the Nicholas Sparks novel

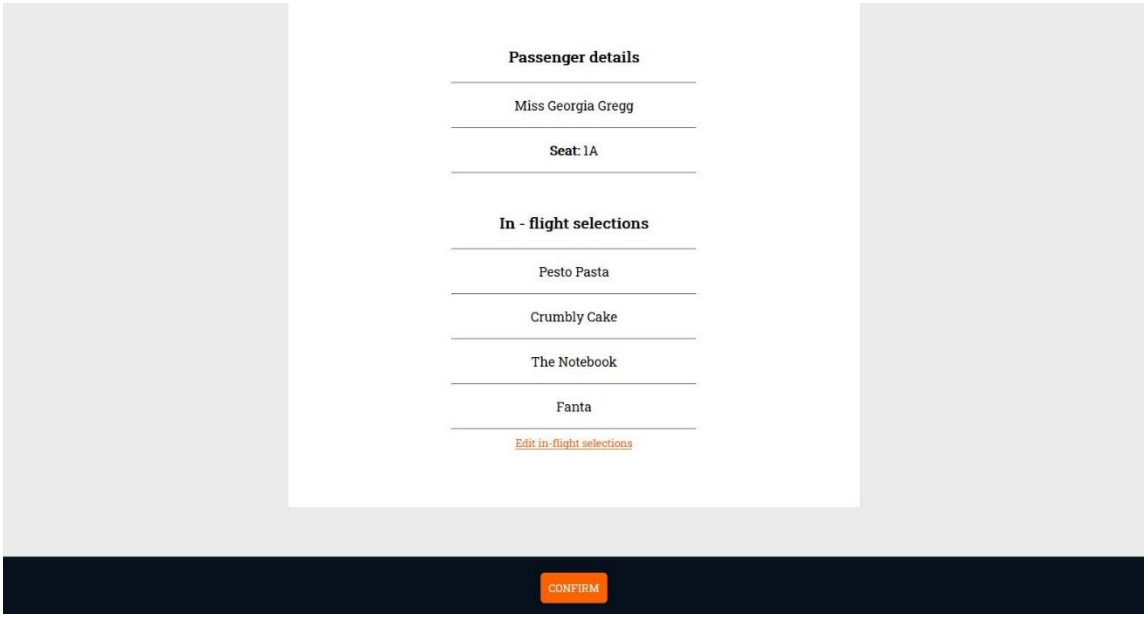
In-Flight Services
$29.4

CONFIRM

Confirm Flight Details

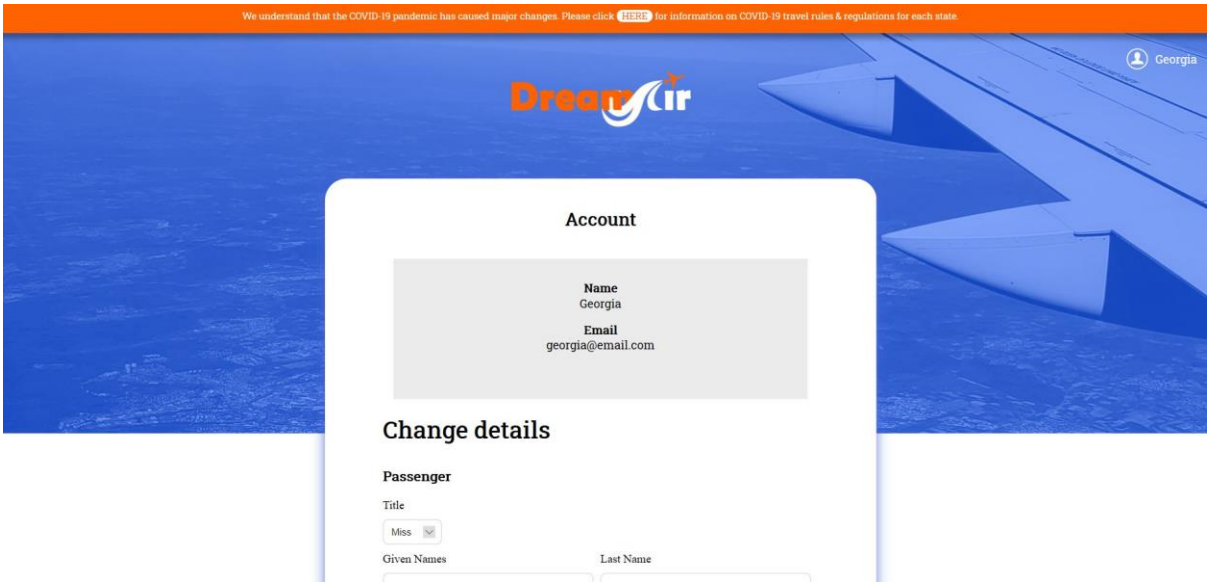
After confirming in-flight selections, customers are redirected to a confirmation page that lists all the details of their booking. Unfortunately some of the intended functionalities of this page weren't implemented by the deadline of the project. Customers can't edit their personal details or the flight selection. In-Flight entertainment however, is editable and changes will be updated on the booking record. See example of edited and updated details over page.





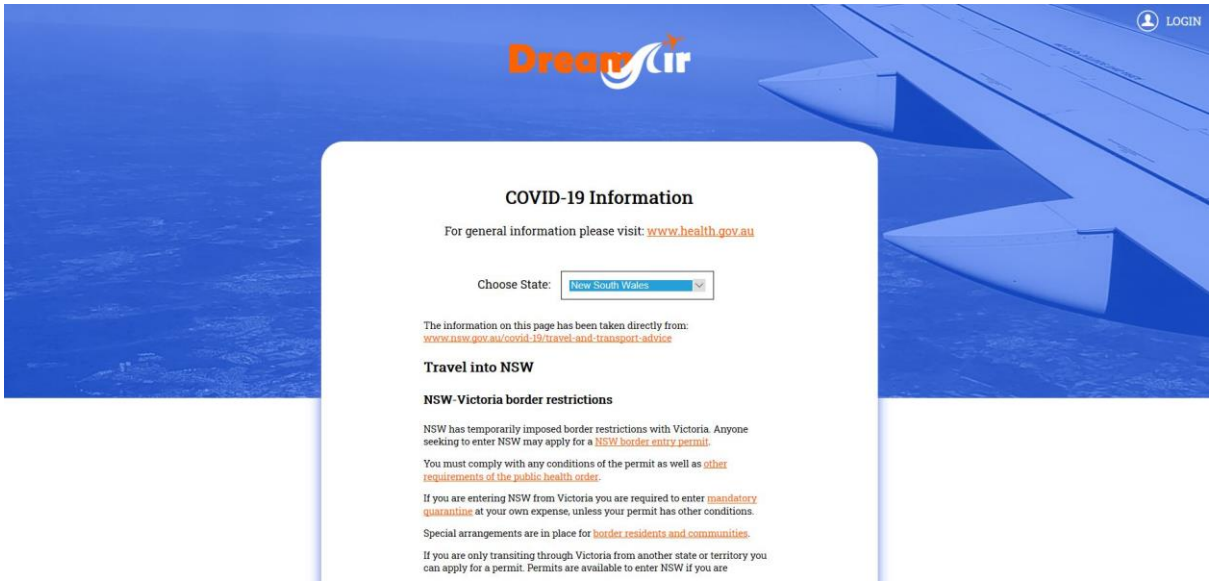
Account Page

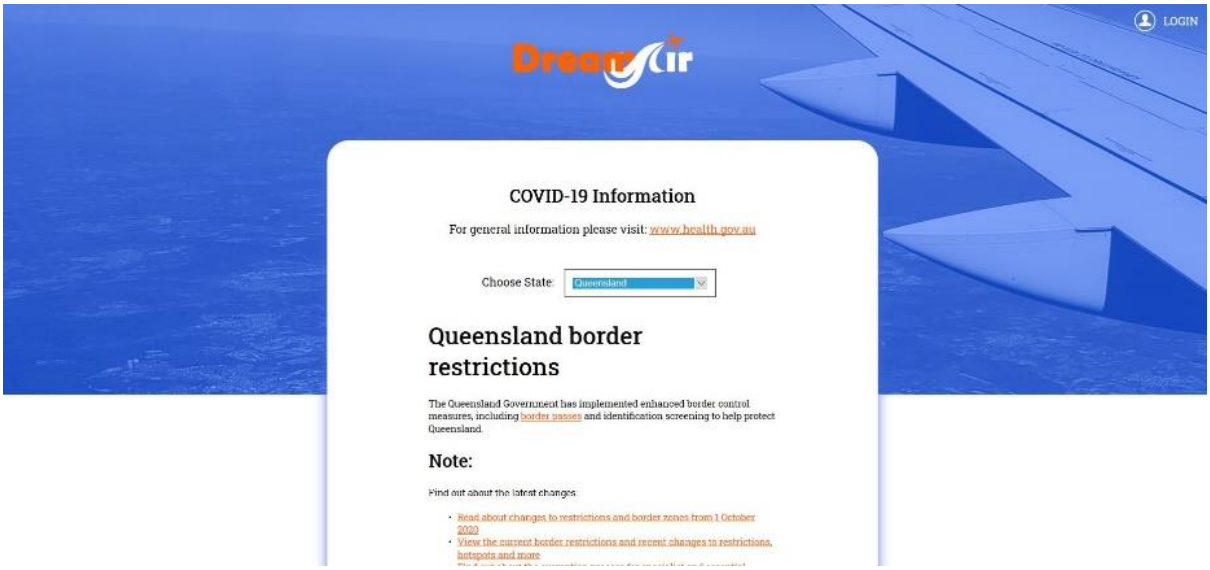
After confirming a booking, the customer will be redirected to their account page. This is where the customer's personal info and booking details are displayed. If the customer books multiple flights, they will all be listed here, in the same format as the confirmation page. Again, some functionalities weren't implemented in time. We intended for flight details and personal details to be editable here, but only the in flight selections are editable.



COVID Information

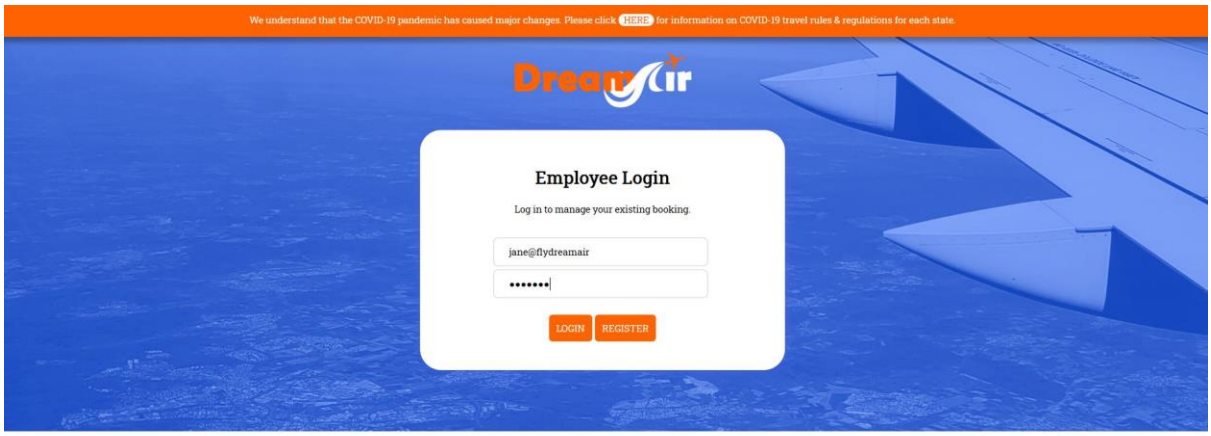
Customers can navigate to the COVID Information page using the banner at the top of the site. Relevant information will be displayed accordingly in response to the state selected. All links on the page, for all states, are active.

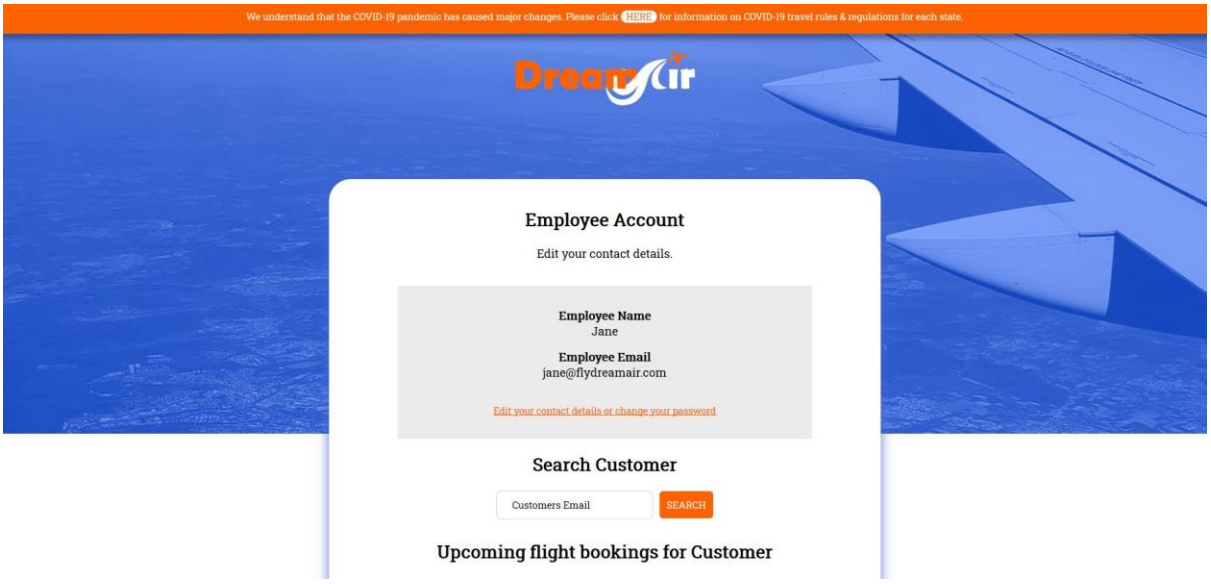




Employee Access

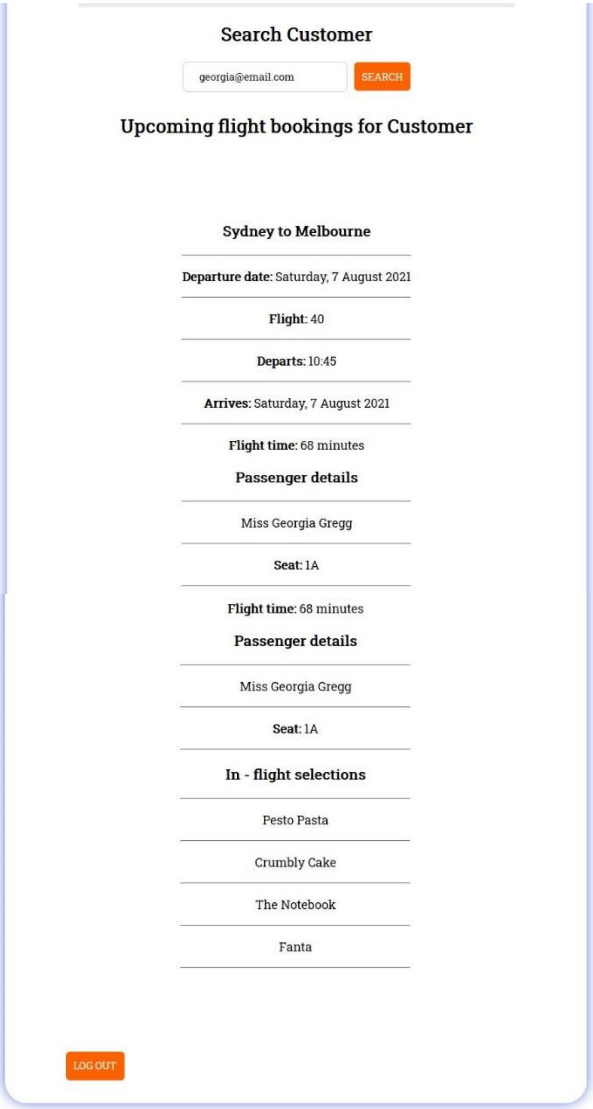
Employees can log in to the site to view and manage customer bookings. The employee login is not accessible from the main site, since realistically, customers don't need access to this page. Employee accounts would be pre-registered by the company's IT team, and details on how to access this page would be distributed to employees where appropriate. The employee login site is live at https://flydreamair.xyz/empLogin.html





Employee Search Customer Function

Once logged in, employees can search for customers that have made bookings, and view all details. Again, we intended for employees to be able to view *and* manage the bookings by editing personal and flight details for customers, but this was not implemented.



Project Closing and Lessons Learnt

The FlyDreamAir Booking Management System project ran smoothly from its inception. Our team was formed early, and we were quickly able to synergise and complete tasks and milestones on time and to the required scope.
The biggest event that effected the running of the project was the leaving of team member John Zhang. John had to leave the project for personal reasons, and we were required to adapt. John's tasks were distributed amongst the remaining team members in the interim where we were missing a team member. Georgia Gregg joined the project and was able to integrate effectively into John's role.
Initial estimates on cost goals were overestimated, however this is a part of the learning process for us as entry level project managers and developers, and so, this did not pose a problem.
The use of version control was a fairly new concept for most of the team. Any existing knowledge of GitHub was somewhat basic and so getting to learn how to push and pull code, and merge branches was a fantastic learning opportunity for all. We did have some mishaps with some code going missing, or branches being unable to be merged, but that comes down to lack of experience with the application, which will come with time. We can see the value of using version control software and having a master branch that only contains the most up to date working code, and will use GitHub in the future as we progress with our careers.
Another lesson the team learnt in the later stages of the project, was that we identified the integration of the front-end design and back-end functionality would have gone smoother had we developed what we now know to be called a 'wireframe' for the application early on. As we are entry level developers, we were unfamiliar with application development best-practices and thought that our regular discussions were enough, though we came to realise that there were some minor differences between what the front-end had designed and coded, what the back-end were developing and the overall flow of the application. The existence of a wireframe that gave both front-end and back-end a blueprint to work towards would have benefited both teams to create the application to the required specifications without miscommunication and allow both teams to more effectively work separately, but simultaneously.
The scope goals of the project have been met for the most part. There are some features on the web application that currently act as placeholders (A customer changing their personal details) and others that have not been fully implemented (An employee being able to change the details of a customer's booking). These uncomplete features, however, demonstrate that the developers were thinking about the next stage of the project and as such, the project is considered a success in regards to scope.
Effective scope management has been practised during our weekly meetings which allowed tasks to be split up between team members. One issue with scope had been encountered towards the end of the project execution phase, after meeting with the client we became aware of the requirement to produce a page to manage the user accounts of users on the webpage. This caused some disruption, but after the group attended an emergency meeting, the team was able to adapt, and the developers were able to work overtime to complete the tasks.
The team was able to overcome two main issues, the leaving of team member John, and the change of requirements (accounts management page), and so the team has performed well in being able to adapt to issues. For future projects, it would be very beneficial to hold more frequent meetings with the customer and get their feedback, doing so during the FlyDreamAir Booking Management System could have avoided the issue of the changed requirements. No prevention measures could be employed to deal with team members leaving.