12 Digital Solutions Problem Solving Process (EDGE)	*What is the problem/s?*	*Planning*	*Digital Solution Prototype*	*Testing, Evaluate & Refine*		Algorithm/Code Document
A3 layout, 8-10 pages landscape orientation footer, page numbers	**Explore**	**Develop**	**Generate**	**Evaluate & Refine**		*A3, 2-3 pages, footer, page numbers, annotations, comments in code submit with report (as a single document)*

Cover page
- ❒ Name
- ❒ Year level
- ❒ Subject
- ❒ Task number
- ❒ Task name
- ❒ Underground logo

Contents
- ❒ Explore
- ❒ Develop
- ❒ Generate
- ❒ Evaluate & Refine
- ❒ References
- ❒ Appendices
- ❒ Code document (Programmed Components)

Annotations
- ❒ Explore
- ❒ Develop
- ❒ Generate
- ❒ Evaluate & Refine

Video Script

Script & Timings
- ❒ Time (seconds)
- ❒ Script
- ❒ May include thumbnails

1
Exploring the Problem
- ❒ Problem Identification
- ❒ Rationale - Want, need or opportunity
  - ○ Existing solutions
- ❒ Target Audience – description, refer to user personas provided in Stimulus
- ❒ Target Audience Perspective
  - ○ Functional/Non-functional requirements
  - ○ Impacts/Constraints – P, S + E
  - ○ Security Features
- ❒ Decomposing the Problem
  - ○ Mega Mind Map – User (Cust./Admin), Developer, Client
- ❒ Software Framework Diagram (Front End, Back End + Data Exchange)
- ❒ Guidelines & Principles
  - ○ Elements of Design
  - ○ Principles of Design
  - ○ UX, UI, WCAG 2.2, HIG
  - ○ Australian Privacy Principles
  - ○ Australian Accessibility Guidelines (adapted from the Australian Accessibility standards)
  - ○ Useability Principles
  - ○ Programming Requirements
  - ○ Australian Copyright Law

2
Success Criteria
- ❒ Prescribed Criteria
- ❒ Self-determined Criteria

Data
- ❒ Identifies data source – supplied CSV files, logo

Programmed Components
- ❒ Administrator
- ❒ Customer

3
Developing the UI
- ❒ Site map
- ❒ Wire-frame Diagrams
- ❒ Mock-ups
- ❒ Style Guide
- ❒ Online forms for -
  - ○ Customer Registration
  - ○ Customer Login
  - ○ Customer Order
  - ○ Customer Payment
  - ○ Admin Login
  - ○ Admin – upload CSV
  - ○ Admin data maintenance – CRUD
- ❒ Show user feedback -
  - ○ Error checking + messages
  - ○ Alerts and notifications

4
Developing the Data
- ❒ Schema/Entity Relationship Diagram
- ❒ Context Diagram (Level 0 DFD)
- ❒ Customer DFD (Level 1)
- ❒ Admin DFD (Level 1)
- ❒ Normalisation of data
- ❒ Data types (table)
- ❒ Data Dictionary – Product table
- ❒ Data Dictionary – Customer table
- ❒ Data Dictionary – Admin table
- ❒ Data Dictionary – Order
- ❒ Sample data – Product
- ❒ Sample data – Customer
- ❒ Sample data – Admin
- ❒ Sample data – Order
- ❒ Database, SQL queries

5
Developing the Programmed Components
- ❒ IPO Charts –see Pseudocode List
- ❒ Pseudocode (matched to corresponding IPO chart)

6
Generating the UI
- ❒ Website screenshots
- ❒ Labelling –
  - ○ UI
  - ○ UX
  - ○ WCAG 2.2
  - ○ Human Interface Guidelines
  - ○ Elements of Design
  - ○ Principles of Design
  - ○ Useability Principles
  - ○ Australian Accessibility Guidelines

7
Generating the UI, Data
- ❒ Labelling forms with SQL
  - ○ Create table
  - ○ Read data
  - ○ Update data
  - ○ Delete data
  - ○ Query data
  - ○ Calculations
- ❒ Front-end – showing data output
- ❒ Admin – data exchange
- ❒ Using supplied data from product.CSV files

8
Generating Programmed Components
- ❒ Front-end/Back-End
- ❒ Relate to data saved in tables in dB
- ❒ Security importance and account reg
- ❒ Evidence of CRUD

9
Testing
- ❒ Functionality Testing
- ❒ Peer Testing
- ❒ User Testing
- ❒ Website validation – using W3C Validator
- ❒ Evidence of validation

10
Evaluating
- ❒ Summary of Testing Feedback
- ❒ Eval against Success Criteria
  - ○ Prescribed Criteria
  - ○ Self-determined Criteria
  - ○ Recommendations for current/future improvements
- ❒ Constraints/Impacts – P, S + E
- ❒ Security Features
- ❒ Australian Privacy Principles
- ❒ Accessibility Guidelines
- ❒ WCAG 2.2 and HIG
- ❒ Summary statement

Refining
- ❒ Evidence of refinement + discussion

Video

Digital Solution Functionality
- ❒ 2-4 mins, mp4, no larger than 500Mb
- ❒ Audio, narration, clear explanations, use of technical language
- ❒ Include – Welcome, Thank you, website UI (front-end), site map, functionality of database (back-end), input screens, forms, CRUD, data exchange

References
- ❒ Referencing Style
- ❒ DIGS Textbook
- ❒ W3C validator
- ❒ Grok Learning
- ❒ Pseudocode - most important document
- ❒ The Little Book of Algorithms
- ❒ Online@Hillbrook 12 DIGS subject page
- ❒ Logo + Stimulus
- ❒ Excursion photos
- ❒ Acknowledge sources for –
  - ○ UI + UX
  - ○ Baskin Robins
  - ○ HIG
  - ○ WCAG
  - ○ Australian Privacy Principles
  - ○ Australian Accessibility Guidelines

Appendices

Appendix # 1
- ❒ Statement of Authenticity
- ❒ Acknowledge assesstance

Appendix # 2

Appendix # 3

Pseudocode
- ❒ Numbered to correspond to IPO charts
- ❒ Structured correctly

Pseudocode List (5/6)
- ❒ Customer account
  - ○ Registration
  - ○ Creating a secure password based on criteria
  - ○ Login - verification/validation
  - ○ Order transaction processing
  - ○ Calculate the cost of the order
  - ○ Payment processing
  - ○ Search for a product
- ❒ Administrator
  - ○ Login
  - ○ CRUD – create, read, update, delete items
  - ○ Upload + read records from a CSV file
- ❒ Show
  - ○ Sequence
  - ○ Selection
  - ○ Iteration (loop)
  - ○ Data Structures
  - ○ Effectiveness, efficiency, maintainability, reliability
  - ○ Customer input
  - ○ Data output
  - ○ Modularisation

HTML, CSS
- ❒ Numbered to correspond to pseudocode and IPO charts
  - ○ Index.html
  - ○ Bootstrap
  - ○ Appropriate menu content
  - ○ Products
  - ○ Shopping cart
  - ○ Register account, Notifications
  - ○ Login, Creating a secure password
  - ○ Admin login

Python/Flask
- ❒ Numbered to correspond to pseudocode and IPO charts
  - ○ main.py
  - ○ read CSV file
  - ○ comments in code

Other – SQL
- ❒ Numbered to correspond to pseudocode and IPO charts

IA2 - "The Matrix" Project – Digital Solution