# 2024 REGIONAL COMPETITION
## PROGRAMMING

# CONTENTS

# INTRODUCTION

Welcome to the WorldSkills Australia 2024 Regional Competition in **PROGRAMMING.**

Worldskills Australia is a social enterprise that passionately believes skills drive the future of young people, and of Australia.

We are part of an International Worldskills movement.

We have been enabling young people to showcase their trade and skills talents since 1981. WorldSkills Australia aims to encourage Australians to celebrate vocational education and training, shift perceptions and create the understanding that to learn a skill, to choose a skills-based career, is one of the most important decisions a young person and their family will ever make.

Our skills-based competitions operate at regional, national and international levels, and are aligned to National Training Packages, Apprenticeships Australia and Jobs Australia schemes.

The Regional Competition is a one-day competition and the first step on your journey with WorldSkills Australia, that could lead to you competing at the National Championships and depending on eligibility International Championships and Scholarship pathways. https://www.worldskills.org.au/what-we-do/worldskills-australia-competitions/

The following information is for competitors, organisers and judges to assist in preparation for the competition. This document will provide important information such as competition information, required tools and equipment, work health and safety policies and the WorldSkills Australia Code of Conduct.


Please read the information carefully.


- Organisers – any questions relating to the project please contact Key contact below
- Competitors – any questions relating to the competition please speak to the organisers of your local competition


Best of luck at the competition!



**Questions?**

**Key Contact Details:   operations@worldskills.org.au**

# COMPETITION ASSESSMENT CERTIFICATE

The 2024 WorldSkills Australia Regional Competition for **PROGRAMMING** aligns to the National Training Package ICT Information and Communications Technology and the following Units of Competency (Elements of Competency and Performance Criteria) contained in the ICT 40120 Certificate IV in Information Technology Qualification.

| UNIT CODES | UNIT NAME | ELEMENTS | REGIONAL COMPETITION MARKING SECTION ALIGNMENT | | | |
|---|---|---|---|---|---|---|
| | | | **A** | **B** | **C** | **D** |
| ICTPRG432 | Develop data driven applications | • Select data-access layer (DAL)<br>• Establish connection with data source<br>• Execute commands and return results from data source<br>• Modify data in data source<br>• Manage disconnected data<br>• Document data-access layer | X | X | X | X |
| ICTPRG433 | Test applications | • Determine testing need in development<br>• Prepare test plan document<br>• Write and execute test procedures<br>• Review test results | X | X | X | X |
| ICTPRG434 | Automate processes | • Develop algorithms to represent a solution to a given problem<br>• Describe the structures of the algorithms<br>• Design and write the script or code<br>• Verify and review the script or code<br>• Document the script or code | X | X | X | X |
| ICTPRG441 | Apply skills in object-oriented design | • Derive high-level design from specification<br>• Refine design<br>• Document design | X | X | X | X |
| ICTPRG444 | Analyse software requirements | • Gather and confirm client requirements<br>• Analyse the functional and related non-functional requirements and analyse the feasibility of project<br>• Develop high-level system solutions<br>• Prepare and publish the software-requirements documentation | X | X | X | X |
| ICTDBS416 | Create basic databases | • Analyse the requirements for the database<br>• Use data modelling to design the database to suit requirements<br>• Create a database on a web or database server<br>• Test the database and debug | X | X | X | X |
| ICTICT444 | Develop client user interface | • Prepare design for interface<br>• Design and document user interface | X | X | X | X |
| ICTICT435 | Create technical documentation | • Identify and analyse documentation requirements and client needs<br>• Design documentation<br>• Develop documentation<br>• Evaluate and edit documentation<br>• Prepare documentation for publication | X | X | X | X |
| ICTPRG435 | Write script for software applications | • Determine the requirements of building the script<br>• Design the script<br>• Write the script | X | X | X | X |

| UNIT CODES | UNIT NAME | ELEMENTS | REGIONAL COMPETITION MARKING SECTION ALIGNMENT | | | |
|---|---|---|---|---|---|---|
| ICTPRG436 | Develop mobile applications | • Define a platform<br>• Design the user interface for a mobile application<br>• Permit the personalisation of parameters<br>• Build a user interface for a mobile application<br>• Connect to the data sources<br>• Test and debug a mobile device application<br>• Deploy a mobile device application | X | X | X | X |
| ICTPRG438 | Configure and maintain databases | • Determine the requirements of database administration<br>• Install and configure the database system<br>• Manage database security and integrity<br>• Optimise and backup database<br>• Document the database | X | X | X | X |
| ICTPRG439 | Use a library or pre-existing components | • Identify potential re-use units<br>• Evaluate re-use components for suitability in parent project<br>• Incorporate the re-use components | X | X | X | X |
| ICTPRG443 | Apply intermediate programming skills in another language | • Code using user-defined data structures<br>• Code using standard algorithms<br>• Debug code<br>• Document activities<br>• Test code<br>• Create application | X | X | X | X |
| ICTPRG549 | Apply intermediate object-oriented language skills | • Build applications using the provided language utilities<br>• Write programs that interact with a database<br>• Write the graphical user interface<br>• Debug the application<br>• Test the application<br>• Create and maintain documentation | X | X | X | X |

# COMPETITION PROJECT WRITERS

WorldSkills Australia would like to thank the following volunteers who contributed to the writing /reviewing of the  Regional Competition.

| ORGANISATION | CONTACT NAME |
|---|---|
| Mirkwood Productions | Michael Kirkwood-Smith |
| TAFE NSW | Mitch Tamsett |
| TAFE QLD | Faculty of Creative Art and Digital Design |

# COMPETITOR INFORMATION

## COMPETITION DESCRIPTION

This is a competition for Windows desktop application developers to produce either a .NET (any language, e.g. C#) or Java solution. The competitor will be given a business scenario in which they will need to develop a holistic/integrated solution that satisfies the business requirements.

The project will require the competitor to create a single application made up of multiple forms/sections, each handling a different area of functionality. The forms will need to provide an easy to use graphical user interface (GUI) with business logic code running behind it to take form input and perform calculations/manipulation. A database will be provided (either Microsoft SQL Server or MySQL) to interact with, for example to list/add/edit/delete customers or to perform statistical analysis such as a total amount from orders in a month.

## REQUIRED SKILLS

The competition has been designed to use MySQL or SQL Server as the backend component. The competitor may be required to create, modify or design a relational database, including the following:

- Tables: Add, edit, delete, set properties
- Relational aspects: define relationships between tables/entities
- Integration: import data from variety of sources

The front-end has been designed to use .NET or Java environments. The competitor will be required to design and create a Windows desktop application to meet the specified requirements. The following could form part of the assessment:

- User experience: provide a well-structured and well laid out interface; clean clear and easy to use interface; professionalism; consistency, such as navigational elements, branding, etc.
- Database integration: Connect application to a data source; perform standard operations on the data source; perform complex queries on the data source
- Validation and error checking: handling errors/exceptions appropriately; providing validation to ensure clean data being sent; providing friendly error messages to the user
- Forms: creating appropriate forms; using appropriate types of input/output controls; customizing form properties to fulfil requirements
- Business logic: providing customized business logic where appropriate; possibility modelling a business's data objects
- Reporting: providing customized reports of data from the data source; group, sort, summarise and filter data; adjust layout and formatting as required and meeting specifications
- Integration: export data in variety of formats

## UNIFORM

On the day of the competition, all competitors are required to wear the following:

- Industry appropriate workwear
- Closed in footwear

## PERSONAL PROTECTIVE EQUIPMENT

All competitors must provide and wear their own personal protective equipment at all times during the competition, according to the below list. Any competitor without the required equipment will not be permitted to compete.

No PPE is required

# TOOLS & EQUIPMENT – PROVIDED BY COMPETITOR

- No equipment is required to be bought in by the competitor
- Please see list of equipment supplied by Organisers.

# COMPETITION TIME

## TIMETABLE

The competition time is 5.30 hrs not including briefing or breaks. The below are suggested starting times that can be adapted to suit local competitions – however competition time/tasks must remain as per competition requirements.

| START | END | DETAIL | TOTAL |
|-------|-------|--------------|-------------|
| 9.00 | 9.30 | Briefing | 30 mins |
| 9.30 | 11.00 | Competition | 1 hr 30mins |
| 11.00 | 11.15 | Break | 15 mins |
| 11.15 | 12.45 | Competition | 1 hr 30mins |
| 12.45 | 13.15 | Lunch Break | 30 mins |
| 13.15 | 14.45 | Competition | 1 hr 30mins |
| 14.45 | 15.00 | Break | 15 mins |
| 15.00 | 16.00 | Competition | 1 hr |
| 16.00 | 16.30 | Debrief | 30 mins |

## BRIEFING

There will be a 30-minute briefing of the project prior to the competition commencing.

The briefing will include:

- Toilet location
- Emergency exit location
- Emergency procedure
- Competition information
- Introduction of judges
- Detailed information on the design brief
- Answer any questions

# COMPETITION INSTRUCTIONS

**BACKGROUND**

**Ticked Off** is a long-established vet practice that has been operating in the Hornsby area of Sydney for many years. The owner, Victor Grahams, has recently retired and has handed the practice over to his son in law, Keith Cabrade. Keith sees an urgent need to overhaul the paper based record keeping procedures and streamline the methods of communicating with clients.

**REQUIREMENTS**

**Hawkwood Consultants** has been employed to provide the new solution for **Ticked Off**. You have been contracted by **Hawkwood Consultants** to assist with the development of this solution. You should ensure that you adhere to clean, professional development practices (other developers will love you in the future!).

**DELIVERABLES**

You will be developing a holistic system to help a vet practice manage their data. Specifically, you will be asked to:

- Modify and use a database that will assist with record keeping – details of clients, pets and staff
- Construct user friendly methods by which records in the database can be added, edited, displayed, and deleted
- Provide a way in which pet boarding costs can be calculated
- Give users easy access to statistics about pet boarding details
- Export data to CSV format
- Display a presentation on removing and killing ticks that can be shown in the waiting room.

**APPLICATION OVERVIEW**

**TICKED OFF – APPLICATION MAP**

**A**

Main Menu

| Manage Pet Info | Statistics | Boarding Cost Calculator | Quick Export Pet Info (CSV) | Open Promo Video |
|---|---|---|---|---|
| **B** | **C** | **D** | **E** | **F** |
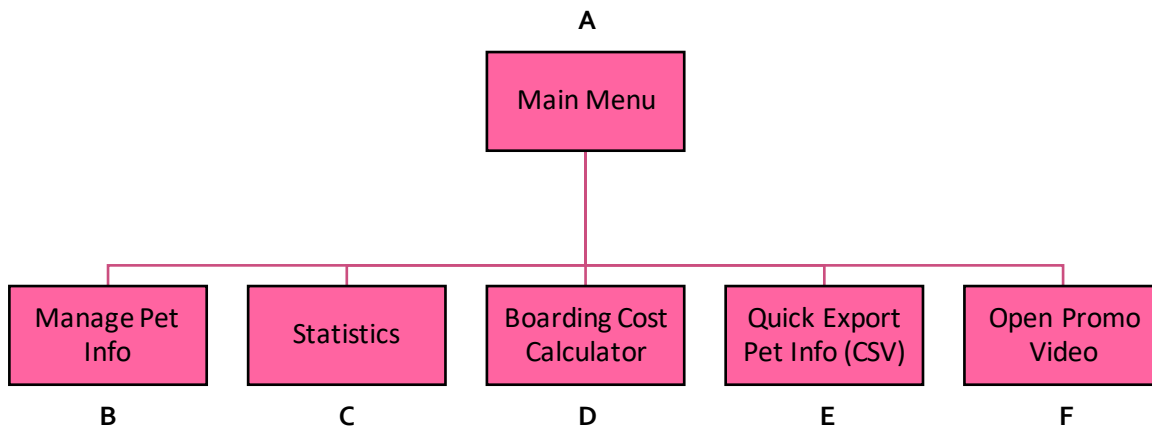
## DATABASE

Some work has already been done in developing the database for **Ticked Off** but unfortunately the developer, Higgs Boson, had to leave.

An Entity Relationship Diagram (ERD) for the required **Ticked Off** database has been provided to you in **Figure i**. The following tables outline the data stored in each table of the **Ticked Off** database.

| CUSTOMER | |
|---|---|
| Holds information about the Ticked Off customers | |
| Customer ID | Primary key |
| Title | Customer's title |
| First name | Customer's first name |
| Last name | Customer's last name |
| Gender | Customer's gender<br>– valid entries are M or F |
| D.O.B | Customer member's date of birth |
| Email | Customer's email address (if applicable) |
| Phone1 | Customer's landline phone number (if applicable) |
| Phone2 | Customer's mobile phone number (if applicable) |
| Street1 | Customer's street address (first part if applicable) |
| Street2 | Customer's street address |
| Suburb | Customer's suburb of residence |
| State | Customer's state |
| Postcode | Customer's post code |

| PET | |
|---|---|
| Holds information about the pets seen by Ticked Off | |
| Pet ID | Primary key |
| Pet name | Name of pet |
| Species | Species of pet |
| Breed | Breed of pet |
| D.O.B | Pet's date of birth |
| Gender | Pet's gender valid entries are M F or U |
| Weight | Pet's weight |
| Customer ID | Foreign key to customer table |

| STAFF | |
|---|---|
| Holds information about the staff employed by Ticked Off | |
| Staff ID | Primary key |
| Title | Staff member's title |
| First name | Staff member's first name |
| Last name | Staff member's last name |
| Gender | Staff member's gender – valid entries are M or F |
| D.O.B | Staff member's date of birth |
| Email | Staff member's email address (if applicable) |
| Phone1 | Staff member's landline phone number (if applicable) |
| Phone2 | Staff member's mobile phone number (if applicable) |
| Street1 | Staff member's street address (first part if applicable) |
| Street2 | Staff member's street address |
| Suburb | Staff member's suburb of residence |
| State | Staff member's state |
| Postcode | Staff member's post code |
| Position | Staff member's position |
| **STATE** | |
| List of the states in Australia | |
| State | Australian states |

| INVENTORY | |
|---|---|
| Holds information about the inventory held by Ticked Off | |
| Item ID | Primary key |
| Item Name | Name of inventory item |
| Item Description | Description of inventory item |
| Number On Hand | Number stored |
| Number On Order | Number on order - must be a positive number (i.e, greater than 0) |
| **BOOKING** | |
| Holds information about the bookings made at Ticked Off | |
| Booking ID | Primary key |
| Pet ID | Foreign key to pet table |
| Staff ID | Foreign key to staff table |
| Booking date time | Date and time of appointment |
| Symptoms | Memo field listing pet's symptoms |
| Treatments | Memo field listing treatments administered |
| Notes | Memo field showing notes made by vet |

## SOURCES OF DATA

Data exists in the **Pet**, **Staff**, **Customer**, **Booking** and **State** tables.

The data for the **Inventory** table comes from an old spreadsheet and must be imported into the **Ticked Off** database from CSV format.

| FILE NAME | DESCRIPTION |
|---|---|
| Ticked Off Vet | Current version of the Ticked Off database. Includes most of the desired tables. You must make changes to this database according to the instructions given.<br><br>This database has been provided as both Microsoft SQL Server and MySQL data files.<br><br>You may also like to use the database creation scripts provided to programmatically construct the tables and fill them with data – provided in both SQL Server and MySQL formats. |
| Inventory.csv | Inventory data – listing of vet equipment |

**FIGURE I: ENTITY RELATIONSHIP DIAGRAM (ERD)**

## LAYOUT AND DESIGN SPECIFICATIONS
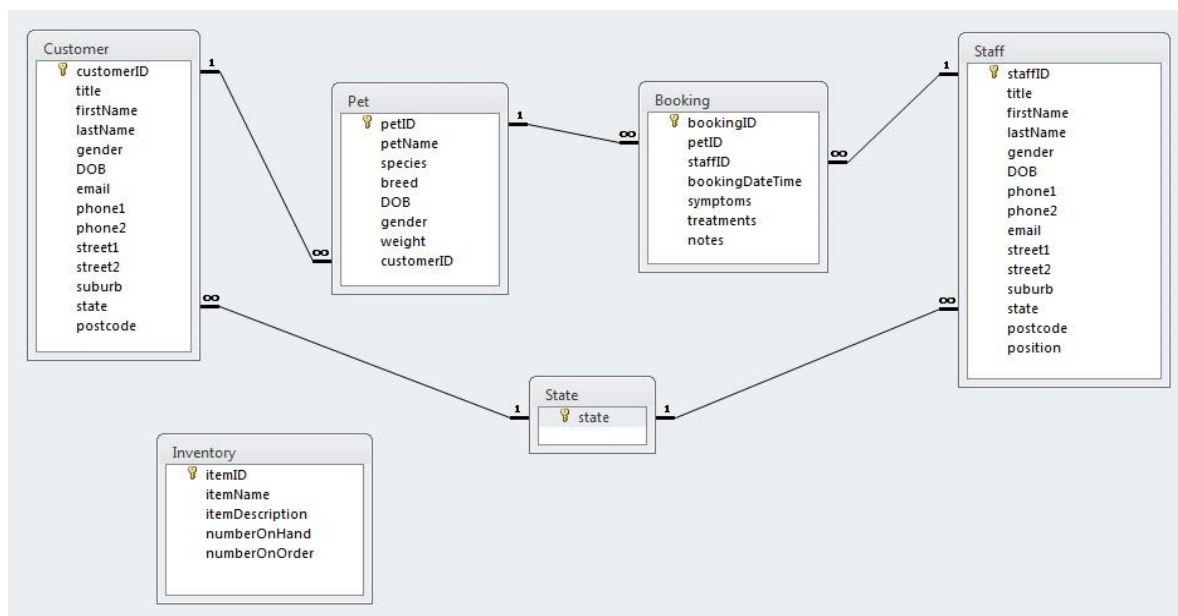


All components of this system (forms, reports, etc) must have a consistent look and feel that conforms to

**Ticked Off's** agreed standard.

**Hawkwood Consultants** has worked closely with Giovanna from **Scadenza Design** and **Ticked Off** to establish a design standard. Giovanna has provided a relevant extract from the Style Guide for your reference (supplied separately).

Ensure all components comply in the following areas:

- Colour scheme
- Borders and shading
- Font usage
- Header layout and design (inc. logo placement)
- Grouping of elements (into logical categories)
- Use of appropriate controls (e.g. dropdown lists to display lookup values from database)
- Layout/alignment of elements (labels, inputs, etc)
- Overall professionalism – must be clear, concise and easy to use

## NAMING CONVENTIONS

You are expected to demonstrate professionalism in the names you choose for all objects/files you create. Decide on a naming convention and ensure that you adhere to it throughout the project for consistency.

The naming convention you adopt must clearly identify the purpose of all objects/files not only for you as the initial developer, but for all others who will maintain and modify the project at a later stage. This will form part of the documentation for the competition.

**DELIVERABLES**

| NUMBER | NAME | DESCRIPTION |
|---|---|---|
| **1 DATABASE** | | |
| 1.0 | Table creation | Create the Inventory table in the existing Ticked Off database |
| 1.1 | Data import | Import data into the Inventory table |
| **2 APPLICATION** | | |
| 2.0 | Main Navigation | Main navigation features of the application functions |
| 2.1 | About screens | Gives access to information:<br>• about the company<br>• about the application |
| 2.2 | Manage Pet Information | Provides:<br>• pet CRUD<br>• sorting facility |
| 2.3 | Boarding Cost Calculator | Calculates boarding cost based on different input criteria |
| 2.4 | Statistics | Displays a variety of statistics based on stored data |
| 2.5 | Quick export | Quick export of pet information to CSV |
| 2.6 | Promotional video | Opens a promotional video for viewing |
| **3 PRESENTATION** | | |
| 3.1 | Presentation | Presentation of finished system to the client outlining its features |

## 1. DATABASE

- ### DELIVERABLE 1.0 - TABLE CREATION

You have been provided with an incomplete version of the **Ticked Off** database that was created by a previous developer. You are to use this database and modify it to meet the specifications. (Refer to **Figure i** and the table structure provided in the database overview section).

*Requirement:*

- Make sure that the overall database structure matches the entity relationship diagram and table structures provided
- Create a new **Inventory** table referring to the specifications given.

- ### DELIVERABLE 1.1 - DATA IMPORT

You have been provided with the file **Inventory.csv** (comma separated values), that holds inventory data which has been exported from a previous system. You need to get this data into the new system that is being built.

*Requirement:*

- Check that the data in the file matches the given database structure; you may have to modify it before importing
- Import the data from this file into the **Inventory** table you have created.
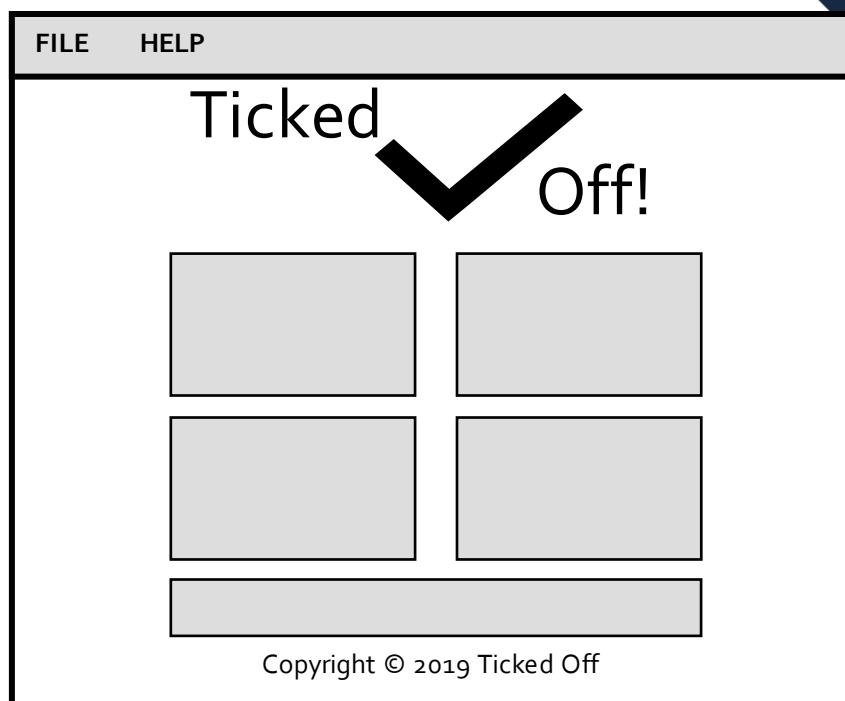
## 2. APPLICATIONS

*Note:* make sure all parts of the system are in line with the provided style guide!

*Note:* The "description" given for each deliverable in this document should be displayed on the appropriate screen in the application.

- **DELIVERABLE 2.0 - MAIN NAVIGATION**



**A**

**Main Menu**

**REQUIREMENT:**

Create a navigation menu as shown. This will be the opening view of the application – the first thing that the user sees. Each button will activate the relevant feature/deliverable.

Note – every form / screen created is required to have a menu bar with the following options:

- **FILE**
  - **Exit** (*quits the entire application*)
- **HELP**
  - **About this company** (*displays a small modal form - see Deliverable 2.1*)
  - **About this application** (*displays a small modal form - see Deliverable 2.1*)

- **DELIVERABLE 2.1 – ABOUT SCREENS**

Create two pop up screens that display the provided information about the company and the application. You have been provided with the file About.txt that holds text to be used in the two about screens.

- **DELIVERABLE 2.2 – MANAGE PET INFORMATION**

**B**

**Manage Pet Info**

| FILE | HELP | | | | | | | |
|---|---|---|---|---|---|---|---|---|

BACK   **Ticked** ✓ **Off!**   **Manage Pets**

This area allows you to manage pet information

| SORT | | V | ASCENDING |
|---|---|---|---|

| | ID | NAME | SPECIES | BREED | DOB | GENDER | WEIGHT | CUSTOMER | ^ |
|---|---|---|---|---|---|---|---|---|---|
| › | 1 | | | | | M | 2.5 | | |
| | 2 | | | | | F | 12.0 | | |
| | 3 | | | | | F | 15.7 | | |
| | 4 | | | | | M | 16.2 | | |
| | 5 | | | | | F | 5.1 | | |
| | 6 | | | | | M | 4.2 | | v |

| SAVE | CANCEL | ADD | DELETE | REFRESH |
|---|---|---|---|---|

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The Manage Pet Information screen allows a user to maintain all pet information. It is to display a list of all pets in the system, allowing the user to change the sort order, add new pets, edit existing pets and delete pets. A "yes/no" style confirmation pop up should be displayed to the user when they try to use the save, cancel or delete functions – e.g. "Are you sure you want to delete the selected pets?"

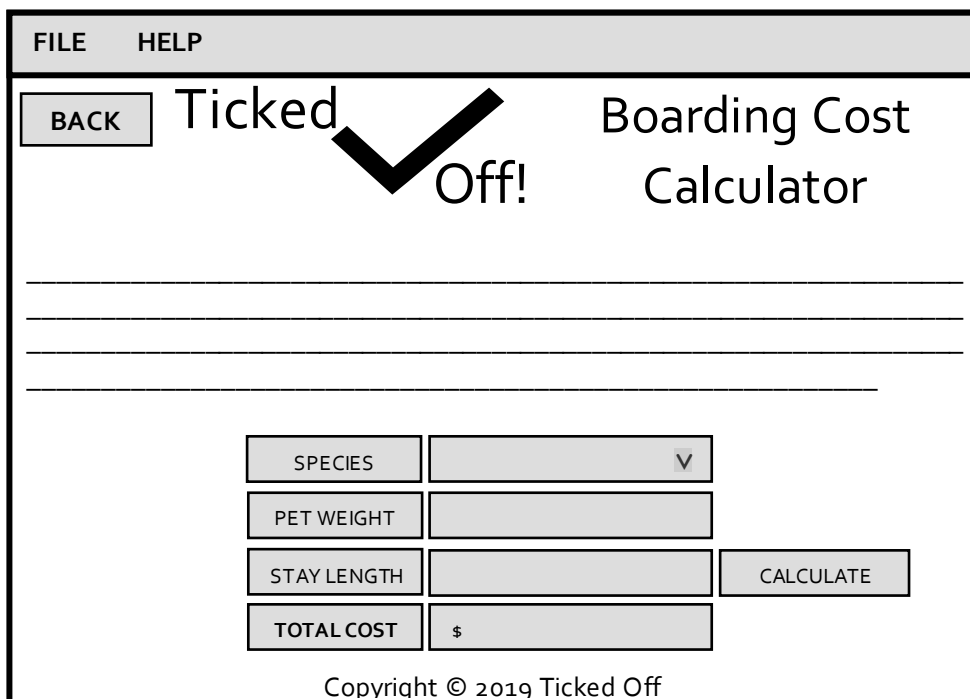*Description*: This area allows you to manage pet information.

**Requirement:**

Functionality shown in the wireframe:

- A grid listing the information of all pets. It should display: ID, name, species, breed, date of birth, gender, weight and their owner (customer). The customer's full name should be displayed in the format "Last name, First name" for easy reference.
- The user can choose a field of information to sort by from a dropdown list.
- The user can choose a sort direction by clicking on a toggle button – the button will change from "ascending" to "descending" when clicked and the sort will change accordingly.
- Ideally, the user should be able to edit a pet's information simply by changing the information shown in the grid.
- Save button – saves all changes made to the pet information (edits and deletes).
- Cancel button – cancel all changes made to the pet information (edits and deletes).
- Add button – opens a pop up form that allows a new pet to be added.
    - Add and Cancel buttons should be displayed in the pop up that either save or discard changes and then close the pop up.
    - Pet name is required.
    - Species is required and should be chosen from a dropdown list (list should include all species that already exist in the database).
    - DOB must be a valid date and cannot be a date in the future (consider using a date picker/calendar control).
    - Gender must be M, F or U and should be chosen from a dropdown list or radio buttons (or another appropriate control).
    - Weight must be a valid non-negative decimal number.
    - Customer must be selected from a list of existing customers.
    - Entering invalid data should display appropriate error messages to the user.
- Delete button – deletes all selected pets.
- Refresh button – refreshes the data shown in the grid/list (pulling from the database).

- ### DELIVERABLE 2.3 – BOARDING COST CALCULATOR



The Boarding Cost Calculator allows the user to quickly and easily calculate how much it will cost to have a pet board at the vet. The cost is based on the pet's species, weight and the length of the stay.

**Description**:

*The boarding cost calculator allows you to quickly and easily see the applicable cost of using the animal boarding services of Ticked off Vet.*

*Just enter a few simple bits of information and the cost will be calculated.*

**Requirement**:

Use the given fee structure rules provided in Figure ii. Functionality shown in the wireframe:

- Species – dropdown list showing all species that are currently in the database
- Pet weight – must be a valid non-negative decimal number
- Stay length – must be a valid non-negative integer
- Calculate button – will validate input and display the total cost when correct.

**Figure ii: Fee structure rules**

- **Base rate per day - $20**
  *Plus*

- **Species daily rate (varies according to species; see table below):**
  *Plus*

- **Fatty factor**
  *>=12 kgs must pay extra $1.50 per kg*

  *Plus*

- **Dumping discount**
  *Stays of > 10 days attract a 10% discount (from the final price)*

| SPECIES | DAILY SURCHARGE ($) |
|---|---|
| Cat | 5 |
| Dog | 5 |
| Ferret | 5 |
| Goat | 12 |
| Guinea Pig | 0 |
| Horse | 22 |
| Koala | 20 |
| Mouse | 0 |
| Rabbit | 3 |
| Rat | 0 |
| Snake | 15 |
| Tortoise | 0 |
| Yak | 108 |

- **DELIVERABLE 2.4 – STATISTICS**



| FILE | HELP | | |
| --- | --- | --- | --- |

BACK    Ticked ✓ Off!    Statistics

This area allows _____
_____
_____

| Shortest Stay | 1 Day | | Lowest Boarding | $34.50 |
| --- | --- | --- | --- | --- |
| Longest Stay | 14 Days | | Highest Boarding | $748.50 |
| Average Stay | 4.12 Days | | Average Boarding | $416.17 |

| SPECIES | ▽ | |
| --- | --- | --- |
| No OF STAYS | | CALCULATE |
| TOTAL AMOUNT PAID | $ | |

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**C**

**Statistics**

The statistics screen allows the user to quickly see some commonly used statistics regarding boarding information.

**Description:**

*This area allows you to quickly and easily view some useful statistics about Ticked Off Vet regarding boarding information.*

*Information here can be used to make informed decisions about business direction.*

**Requirement:**

For all species, display:
- Shortest stay
- Longest stay
- Average stay
- Lowest boarding cost
- Highest boarding cost
- Average boarding cost

The species dropdown list shows all species currently in the database. When the Calculate button is clicked, you should display:
- Number of stays
- Total amount paid

- ## DELIVERABLE 2.5 – QUICK EXPORT

The quick export feature allows a user to quickly obtain a CSV file including the entire list of pets in the database. This file can then be imported into another system, e.g. for a Mail Merge document.

**Requirement:**

Generate and save all pet information in CSV (comma separated values) format. Either save directly to the user's desktop and notify the user, or open a "save dialog" where the user can select a save location. Display the following information (using these items as column headings):

- Pet Name
- Species
- Breed
- Date of Birth
- Gender
- Weight
- Owner – *customer name in the format "Last name, Firstname"*

- ## DELIVERABLE 2.6 – PROMOTIONAL VIDEO

When the "watch the new promo video" button is clicked, the Ticked Off Tick Removal Presentation video should be opened and played to the user. It's fine for the video to be played with the default WMV video player, e.g. Windows Media Player.

*Requirement:*

To open the supplied promotional video (**TickedOff_TickRemovalPresentation.wmv**) for viewing by the user.

## 3. PRESENTATION

You need to give a quick (approximately 5 minutes) presentation to Ticked Off displaying the new system that you have developed. This presentation should showcase all of the features of the system in a clear and easy to understand way.

You need to create a slideshow (Microsoft PowerPoint or equivalent) to go with your presentation.

*Requirement:*

To create and present a slideshow to the client that outlines all of the features of your system.

# ORGANISERS INFORMATION

The competition organisers should work together with their Regional Committee to:

- Confirm a date for the Regional Competition and promote participation to RTO's, Industry and Employers in their region
- Ensure all equipment, materials and consumables are available for competitors on the day of competition
- Secure equipment materials/consumables through sponsorship/in kind - or through purchase. Please speak to your Regional Committee regarding budget and processes for purchase or reimbursement. WorldSkills Australia will confirm with Main Regional Contact any National partnerships that will include product/materials for use at the Regional Competitions
- Ensure competitors and judges have been provided all the information regarding the Competition day including location, time, availability of food/drinks for breaks etc
- Coordinate presentation date/time for certificates and medals

On the day of the competition, the competition organisers are responsible for conducting a WH&S briefing and work with the Chief Judge to ensure the smooth running of the competition.

# TOOLS & EQUIPMENT – PROVIDED BY COMPETITION ORGANISER

The competition organisers will provide the following equipment and materials for use by the competitors during the competition:

**ITEMS PER-COMPETITOR**

| ITEM | SPECS | # OF COMPETITORS | TOTAL REQUIRED |
|---|---|---|---|
| Computer desk | | | |
| Adjustable roller chair | | | |
| Computer – hardware | Configuration capable of running Windows 10, Visual Studio 2017/2019, the Java IDE being used, Microsoft Office | | |
| Standard keyboard | wired or Wireless | | |
| Standard mouse | wired or Wireless | | |
| Mouse pad | slim line ones that stick to the surface of the table | | |
| 2x Monitors | Dual monitors should be used in order to align with sustainability expectations | | |
| USB flash drive | 4GB for distribution and storage of competitor files in cases where there is not a provision for competitors to write a secure part of the network, for back up purposes | | |
| Writing pad | | | |
| Pens/pencils | | | |
| Highlighters | | | |
| **SOFTWARE** | | | |
| Microsoft Office Suite | min requirement: Microsoft office 2013/2016 | | |
| Operating system software | min requirement: Microsoft Windows 10 | | |
| Microsoft Visual Studio 2013/2015/2017 | Community Edition is likely to be fine | | |
| Java IDEs – Eclipse, NetBeans, others as required | | | |

| | | | |
|---|---|---|---|
| Microsoft SQL Server | min requirement: SQL Server Express or LocalDB | | |
| MySQL | | | |
| Windows Media Player | | | |
| Adobe Acrobat Reader | | | |
| Flash Player | | | |
| Good text editor – Notepad++, Sublime Text, etc | | | |
| Any relevant updates/patches/supporting software | | | |

## ITEMS TO BE SHARED BETWEEN COMPETITORS

| ITEM | SPECS | TO BE SHARED BETWEEN | TOTAL REQUIRED |
|---|---|---|---|
| **Internet** | Internet access may not be required, but in a real-world development scenario, programmers would have access to online help resources | All | |

# JUDGES INSTRUCTIONS

- The chief judge will oversee the running of the competition, provide a briefing to judges and competitors and ensure the competition is run in a fair and transparent manner
- Judges should where possible be from a range of RTO's, Industry and/or Industry Associations
- Judges must have a working with children check or certificate (relevant to their State/Territory)
- Judges involved in the training of a competitor should not mark their own competitor
- It is recommended that judges be in marking teams, with a minimum of 2 judges in each team
- A minimum of 2 Judges should have a Certificate IV in Training and Assessment or equivalent
- Judges should familiarise themselves with the marking scale prior to the competition and be briefed by the chief judge on the day of competition
- Judges should record any notes during marking – should there be any questions, when there is a difference of marks from other judges

# MARKING PROCEDURE

- Judges must use and follow the marking scale provided by WorldSkills Australia without making any alterations to the marking scale.
- All marks are to be transferred to the marking summary form (one per competitor) and cross checked for accuracy
- There should always be two people entering marks – one to enter, one to check
- Once the results have been tallied, all judges should confirm and sign results on the front page of the Marking Summary.
- There can only be one gold medal, one silver medal and one bronze medal awarded for each competition.
- In the event of a tied mark, please review "How to Split a tie" procedure
- For training on the marking system/scale please contact WorldSkills Australia

## MARKING PROCEDURE USING MEASUREMENT:

Used to assess accuracy, precision and other performance which can and should be measured in a robust way. It is used where there should be no ambiguity.

- Min 2 judges in marking team, with an independent judge where required to prevent judges marking own competitor
- Judges in judging team must mark together and agree on one combined score per competitor per aspect

**Measurement based marks should be given a YES or NO**

**Example 1**:

Criteria H1: Has the competitor maintained a tidy and safe work area during the competition

The judges in the judging team must agree that each competitor has or has not maintained a tidy and safe work area

If the judges agree to a **YES** - the competitor will be awarded 2 marks

If the judges agree to a **NO** – the competitor will be awarded 0 marks (no half marks can be awarded)

In the event of the judging team not being able to agree on a mark, the Chief Judge will have the casting decision based on feedback from the judges.

| ASPECT ID | MAX MARK | SUB CRITERIA H1 | COMPETITOR 1 | COMPETITOR 2 |
|---|---|---|---|---|
| 1 | 2 | Has the competitor maintained a tidy and safe work area during the competition? Yes/No | 2 | 0 |

**Please Note**: marks in this case cannot be halved for partial accuracy. Although this system of marking may be considered harsh, it ensures that the best competitor is selected as the overall winner of the National Championships.

**Measurement based marks based on tolerances:**

**Example 2:**

In some instances, measurement may allow for tolerances, the judging team must still agree on the one mark awarded for each competitor:

| ASPECT ID | MAX MARK | SUB CRITERIA H2 | COMPETITOR 1 | COMPETITOR 2 | COMPETITOR 3 |
|---|---|---|---|---|---|
| 1 | 3 | Safe Use of Tools and Equipment<br>No warnings – 2 marks<br>1 warning – 1 mark<br>2 or more warnings – 0 mark | 2 | 0 | 1 |

**OR**

| ASPECT ID | MAX MARK | SUB CRITERIA H2 | COMPETITOR 1 | COMPETITOR 2 | COMPETITOR 3 |
|---|---|---|---|---|---|
| 1 | 2 | Measurement requirement 600mm<br>No error– 2 marks<br>1mm of error – 1.5 marks<br>2mm of error – 1 mark<br>3mm of error – 0,5 marks<br>4mm or more error - 0 mark | 2 | 1.5 | 0.5 |

# MARKING SUMMARY

*Marks from the marking scale should be transferred to the Mark Summary form.*

*One Marking Summary Form per competitor*

**Note:** Marks are to be two (2) decimal points and **not** rounded off.

| MODULE | CRITERIA | MARK |
|--------|----------|------|
| A | Database Design and Import | 8.00 |
| B | Application Development | 65.00 |
| C | Presentation | 9.00 |
| D | Professionalism | 18.00 |

## HOW TO SPLIT A TIE

In the event of a tie between two or more competitors, whoever has received the highest score in **Module B** will be awarded the gold medal. If this section is not able to split the tie, then the judges are to work down the list in the following order until the tie is able to be split

- Module D
- Module C
- Module A

The final decision will be made at the discretion of the Chief Judge and the judging panel.

# 2024 REGIONAL COMPETITION RULES

1. **ACCESS TO THE REGIONALS**

   1.1. There is no age restriction for the Regional Competition, how-ever to progress to the National Championships in 2025 competitors must be born on or after 1 January 2001

   1.2. Competitors should meet at least one of the following criteria for the skill they intend to compete in:

   - Be undertaking an apprenticeship or traineeship at an Australian RTO/TAFE/University
   - Be undertaking studies towards a qualification at an Australian RTO/TAFE/University
   - Undertaken/completed qualification at an Australian RTO/TAFE/University

   1.3. Competitors should either work, live or study in the region where they compete

   1.4. When a Skill is not being run in a region, or where nominations are closed, it is permissible for competitors to participate in another region running that Skill.

   1.5. Past regional and national competitors (except national competition gold medallists and Skillaroo members) may enter again.

   1.6. Competitors are not permitted to enter the same skill more than one time in the same year (i.e. cannot enter the same skill in more than one region).

   1.7. Competitors must be issued WSA regional project, competition date, start and finish times at least 24 hours prior to the commencement of their competition.

2. **DURING THE COMPETITION**

   2.1. Competitors who arrive late for the competition will not receive additional time.

   2.2. Competitors must be briefed during a familiarisation period prior to the start of the competition.

   2.3. Judges will announce competitors start and finish times on the day.

   2.4. Competitors are to be reminded to commence their job plan as part of familiarisation.

   2.5. Equipment and materials may be tested during the familiarisation session by competitors.

   2.6. Should a competitor feel at a disadvantage for any reason prior to or during the competition, the competitor should bring it to the chief judge's attention immediately.

   2.7. The competition project must be run as per suggested project guidelines and tasks

   2.8. During the competition, competitors are not permitted to speak to other competitors or members of the public.

   2.9. Competitors wishing to leave the competition area during work time must seek the permission of the Judges.

   2.10. Competitors who need to repair their own tools or equipment during the competition will not receive any additional time.

   2.11. Outside the competition (break time etc…), competitors must not discuss their competition projects or seek advice.

   2.12. Competitors are not permitted to take pre-written notes, sketches, special aids or other information relevant to the project into the competition area, unless these are specified in the project information.

3. **WORK, HEALTH & SAFETY**

   3.1. Competition organisers will ensure a safety plan is in place for the workplaces and premises and conduct a risk assessment when planning and on the day of the competition that includes:

   - Provision of appropriate signage, barriers and sanitiser stations
   - Well-being of staff and all attendees
   - Physical distancing
   - Hygiene and cleaning
   - Record Keeping

   3.2. A safety check of the work site must be undertaken prior to commencement of competition by the Chief Judge.

   3.3. All competitors, judges and volunteers are to receive a site induction prior to the competition.

   3.4. Competitors are required to wear appropriate work clothing, and safety items such as protective glasses, boots and earmuffs, where applicable.

3.5. All competitors are required to complete a Safe Work Method Statement prior to the competition (unless it is a required component of the competition).

3.6. Safe work practices must be adhered to at all times, in line with the completed Safe Work Method Statement.

3.7. Competitors must read and abide by the WorldSkills Australia Code of Conduct and the WorldSkills Australia Alcohol and Drug Management Policy.

3.8. Any safety incidents must be reported to the chief judge.

## 4. POST COMPETITION

4.1. Competitors will receive mark summary forms from the competition organisers.

4.2. The judges' decision will be final, unless a grievance procedure has been lodged (refer section 5 Regional Grievance Procedure). There will be no appeals once the results are announced.

## 5. REGIONAL GRIEVANCE PROCEDURE

5.1. In the first instance complaints should be referred to the chief judge of the skill concerned.

5.2. In the event that satisfactory resolution cannot be achieved, the grievance will be heard by a Grievance Committee of that Region/Organisation.

5.3. The Regional Grievance Committee should comprise of:

- Chairperson of Regional Committee or their representative or if Industry group – CEO or HR Manager
- Independent person from an unrelated skill or State and Territory Manager and
- A nominated representative (industry related) of the complainant if required.

The Regional Grievance Committee decision will be final.

# WORK HEALTH & SAFETY POLICY

It is WorldSkills Australia's policy that each of its employees, volunteers, organisers, judges and competitors will be provided with a safe and healthy place in which to operate. To achieve this policy, WorldSkills Australia will make every reasonable effort in the areas of accident prevention, promotion and compliance with relevant Australian work health and safety legislation. These aspects of working conditions will be given priority in organisational plans, procedures, programs and job instructions.

Health and safety at work and at competitions and events is both an individual and shared responsibility of ALL employees, volunteers, organisers and competitors.

Competition organisers will ensure a safety plan is in place for the workplaces and premises and conduct a risk assessment when planning and on the day of the competition that includes:

- Provision of appropriate signage, barriers and sanitiser stations
- Well-being of staff and all attendees
- Physical distancing
- Hygiene and cleaning
- Record Keeping

## TEST AND TAG

Competitors are required to have all of their 240-volt electrical equipment tested and tagged prior to the competition by an approved electrical appliance tester. No competitor will be permitted to use any 240-volt electrical equipment unless it has a current test tag attached.

Organisers are required to have all supplied 240 volt and 415-volt electrical equipment tested prior to the competition by an approved electrical appliance tester. No electrical appliances provided by the competition organisers is to be used by competitors unless a current test tag is attached.

## DEMONSTRATE GOOD HOUSEKEEPING

Competitors are required to properly manage their work space including minimising waste, preventing unavoidable power or gas consumption and effectively using materials and tools.

## WORK METHOD STATEMENT

A Work Method Statement is a written document that describes the work to be carried out during the competition, outlines the hazards involved with the work, lists the control measures for each hazard identified and specifies who is responsible for the control measures. Each competitor must complete a Work Method Statement in preparation for the competition to ensure that they fully understand the safety risks associated with their competition skill.

Completed Work Method Statements must be submitted to the Chief Judge prior to the start of the competition. No competitor will be allowed to compete unless a Work Method Statement has been completed and submitted.

A Work Method Statement is on the following page.

This policy is under constant review.

# WORK METHOD STATEMENT

COMPETITOR NAME: _____

SKILL: _____DATE: _____

| WORK ACTIVITY | POTENTIAL HAZARDS | HAZARD CONTROLS | RESPONSIBILITIES |
|---|---|---|---|
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

**DECLARATION**

I confirm that I have been trained in the equipment required to compete and I have identified and addressed any potential hazards.

Name: _____

Signature: _____ Date: _____

# SUSTAINABILITY REPORT

## INTRODUCTION

WorldSkills Australia promotes and supports the integration of sustainability into WorldSkills competition design and processes. WorldSkills competition project designers across all skills have embraced the challenge to include sustainability concepts and methods in projects design criteria and the conduct of the skill at the competition.

This trend aligns with social and industry standards regarding sustainability and the results achieved at previous competitions can be regarded as significant for WorldSkills Australia and their project designers. Society and industry in general stand to benefit from this impact, as judges, competitors, suppliers and volunteers, those who influence and shape workplace attitudes and standards, will take away what they learnt at the competition and practice sustainable methods and concepts in their workplace.

## REPORT

| SUBCATEGORY | METHOD & CONCEPT OF SUSTAINABILITY |
| --- | --- |
| **ENERGY & CARBON EFFICIENCY** | <ul><li>Recommendations are that energy efficient hardware is selected for competition use where possible</li><li>Competitors must be encouraged to use power saving options</li><li>We would like to install energy monitoring devices to track usage</li><li>We always ensure that unused computers/equipment are turned off</li><li>We would like to use energy efficient lighting for competitors' workstations wherever possible. Our lighting requirements are low and only need to illuminate the competitors' desks</li></ul> |
| **WASTE MANAGEMENT** | <ul><li>This competition does not produce waste as the only materials we use are electricity and brain power.</li><li>The project has been written so that competitors are never required to produce printed output; everything can be marked onscreen</li><li>We have designed the competitors' instructions in such a way that they can be viewed on screen while they are working (on a second monitor) so that their instructions do not need to be printed.</li><li>All equipment can be borrowed from local colleges, business, etc. so that equipment does not need to be purchased and sold for the competition</li></ul> |
| **RECYCLING & REUSING** | <ul><li>We would like to push to have recycling bins throughout our category for judges and competitors to use. Although we do not have waste during the competition times, there will be food packaging during breaks.</li></ul> |
| **WATER MANAGEMENT** | <ul><li>The only water we use is for drinking, so we are a very water efficient category. In fact, water and computers do not mix, so we actively keep water away from our category.</li></ul> |
| **TRANSPORT & DELIVERY** | <ul><li>In most cases, the equipment we use is sources from local RTOs, business, suppliers, etc., so there is very minimal transport of materials and equipment.</li><li>The bulk of our resources are electronic, so they effectively require no transport whatsoever for the entire instructions and software for the competition.</li><li>Aside from allowing our competitors to use their own keyboard and mouse, all of the rest of the equipment (all tools) are supplied locally for the competition. No toolboxes are transported for our entire category.</li></ul> |

| | |
|---|---|
| **HAZARDOUS & TOXIC MATERIALS** | • This competition does not use hazardous and toxic materials waste<br>• No computer equipment is disposed of during the competition, so there is no risk of harmful substances being improperly disposed of |
| **COMMUNITY & SOCIAL BENEFITS** | • Our entire competition is based around a single case study of a relevant business. Previously, we have not been able to find a business that required a system of relevant size/complexity for the competition, so we have had to rely on using a fictional scenario/client. If we could find an appropriate real-life match for our category, we would definitely develop a system that would benefit a real client!<br>• Throughout the entire competition, our category has an aspect of "professionalism". Within this, we mark accessibility (for disabilities, visual impairments, gender imbalance, etc.), usability, etc.<br>• During the competition, we like to show spectators what can be done with software so that they are educated about it and inspired to learn more. With this knowledge, they can also see how to maximize the efficiency of many processes in their workplaces. |
| **ECONOMIC BENEFITS** | • The category is one of the least costly and least wasteful categories to run. In most cases there is no need for any purchasing of equipment or consumables as the competition can be run in any computer facility.<br>• All equipment can be sourced locally from RTOs, businesses, suppliers, etc., so transport costs are kept to a minimum<br>• The project is prepared entirely by volunteers and so there is no financial cost to WorldSkills for its development<br>• We ensure that industry personnel are involved in writing the competition to make sure that best practices are being used and that up to date techniques (including green computing where possible) are used. |