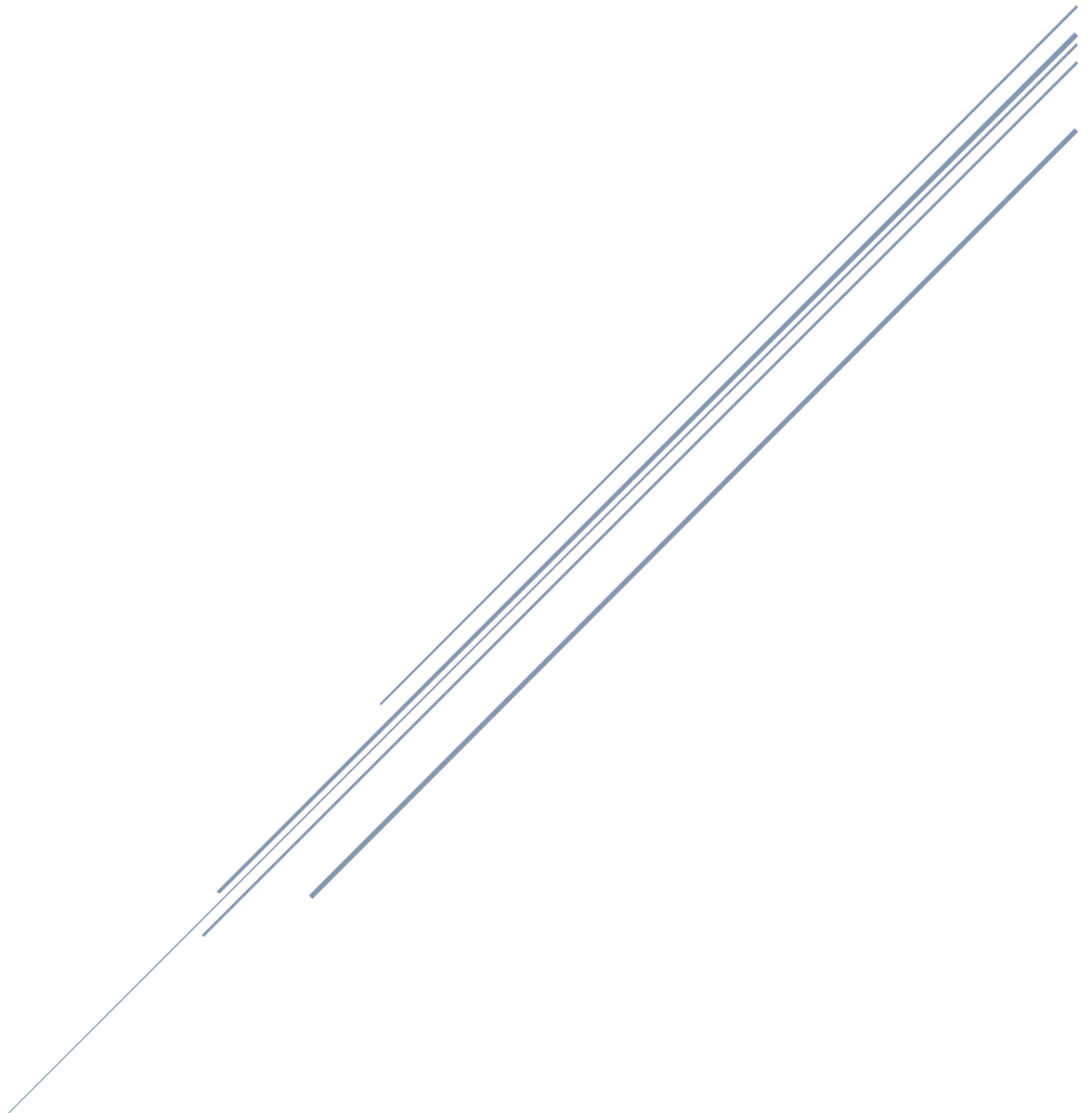


DART

Project Proposal



Higher Diploma in Science in Computer Science

Matthew Hornby | 20058053

Summary

Student Name: Matthew Hornby

Student Number: 20058053

Project Name: Dart

Category: Hybrid

Description: CLI toolset and Node Application

Use Case

As a QA, I can use DART to run comparisons on pdf documents to check for changes after the completion of dev work.

As a Developer, I can grab the xml's I need from the company database in order to aid in adding the variability to documents that product managers have passed as requirements.

As a business stakeholder, I can use the DART app to view and compare new contracts and proposals that have been generated.

Technology

The project in full consists of a command line tool and a node application. Both of these are built on top of some python and kotlin libraries. The database for the project is already provided for as an Sql Server Database that hosts various development regions – of which Dev and QAR will be used as they serve fake data.

Frontend

- React

Backend

- Node
- Python
- Kotlin

Tools

In developing the application, I am proposing to use the following tools:

- Visual Studio Code
- IntelliJ Idea
- Github
- Figma

Context

The project is a work based project and is heavily within the company domain. For context, the team I work on within the company serves as a small part of a much larger service. The team I am on is focused on basically hosting, managing, deploying and using a tool called “xpression” which is a low code tool that is used to parse xml data to pdf / word / html documents in order to produce variable output dependant on various rules that are set up. DART as a project is being developed to further my teams goals and also to open up some functionality to business stakeholders within the company via an easy to use interface. Some of the terms I use below are tied into the inner workings of the xpression tool and I will expand upon them in the project report.

Features

- Generation of documents from outside of the xpression tool
- Gathering documents that have been already generated from the company database
- Comparing documents against each other and creating diff reports
- Parsing the rulesets of document models and providing test coverage reports
- A testing tool that can run documents in batches against baseline sets and flag differences (used in relation to migration moves)
- A frontend UI where these test sets can be created
- An XML builder that can populated dropdowns with valid values based on XML schemas
- A python library that can be used by other developers to create their own scripts

Development Process

The application is planned to be developed stages that will corresponds to the following development milestones:

Basic Functionality

- Python Library to interact with classes representing xpression objects
- Basic Node application to generate, compare and inspect xpression documents
- Basic Command Line testing utility that can be run on the xpression server

Intermediate Functionality

- Python library expanded with more utilities for the analysis of document models
- Kotlin library to parse BDT files (the runtime rules of a particular document model)
- A frontend ui to build the tests instead of relying on the command tool + json configs

Full Functionality

- Python library has functions to call kotlin subprocesses to enable full representation of xpression documents and document models.
- All features of the command line tool can be replicated by the Node application
- A UI for an XML builder that can build test files from XML schemas.

This Ethics Checklist must be completed for all final year undergraduate, taught postgraduate and research projects in the School of Science and Computing.

[View your response\(s\)](#)

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Individual responses

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Your 2 response(s)

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 Respondent: **Matthew Hornby** (Group: CM-HDIPCS) Submitted on: Friday, 2 February 2024, 6:42 PM

Ethics Checklist for Undergraduate, Taught Postgraduate and Research Projects in the School of Science and Computing

All students in the School of Science and Computing who are either (1) in the final year of an undergraduate/BSc degree, or (2) on a taught postgraduate/MSc programme **must complete this Ethics Checklist before conducting their project** regardless of the project type or discipline. The Checklist should also be completed by anyone (whether staff member or student) conducting a **research project** (whether programmatic or not) within the School.

The purpose of this Ethics Checklist is to **identify projects that will require formal ethical approval** from the School Research Ethics Committee, or the SETU Research Ethics Committee, before they can proceed.

Students/applicants should note that this Ethics Checklist is a **formal declaration**, and great care must be taken to **answer all questions accurately**. Students should consult with their project supervisors/advisors regarding any aspects or questions that they are unsure of before completing and submitting the Ethics Checklist.

Students/applicants must **answer all questions** presented to them until the Checklist questionnaire is completed.

Feedback Report

No human experimentation issues (UG).

No animal experimentation issues (N/A).

No issues regarding the use of human tissues.

No animal tissue or biological fluids issues.

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No ionising radiation issues.

No primary data collection issues (N/A).

No underage/vulnerable people issues (UG).

No issues regarding existing/secondary data use (N/A).

No controversial data issues.

No issues related to the collection of rare or protected plants.

No issues regarding the use of genetically modified (GM) plant material.

Instructions:

1. If the above feedback is **entirely green** then, based on your answers, there is **no need to apply for ethical approval** for your project.
2. If **any** part of the above feedback is **yellow/amber**, then there is at least one issue with your project that needs to be reviewed and **you must apply for ethical approval** to continue your project.
3. If **any** part of the above feedback is **red** then there is a serious ethical issue and **you cannot continue your project** as currently planned.

It is recommended that you print this Feedback Report to a PDF file for your records. You should also forward and discuss this Feedback Report PDF with your project supervisor. They will be able to advise if you have any further questions or if you need to apply for ethical approval.

1 * Are you a student on a **final year undergraduate** programme, a **taught postgraduate** programme, or are you conducting a **research project**?

- ☒ Final Year Undergraduate
- ☐ Taught Postgraduate
- ☐ Postgraduate Research Project
- ☐ Other Research Project

2 * What is the **working title** of your project?

DART – Node Application and CLI

3 * Who are the project **supervisors/advisors/principal investigators**?

Colm Dunphy / Catherine Fitzpatrick

- 4 * Does your project involve **human experimentation**?
- ☐ Yes ☒ No
- 5 * Does your project involve **live animal experimentation**?
- ☐ Yes ☒ No
- (6) * Is the planned animal experimentation limited to **non-invasive procedures only** (such as feeding, weighing, or taking naturally voided faecal or hair samples), and does **not** involve any invasive procedures (such as taking rectal faecal samples or blood) from live animals?
- ☐ Yes ☐ No
- 7 * Does your project involve the use of **human** remains/cadavers/tissues/cells/biological fluids/embryos/foetuses?
- ☐ Yes ☒ No
- (8) * Do you intend to only use established **commercial human cell lines**, and no other **human** remains/cadavers/tissues/cells/biological fluids/embryos/foetuses in your project?
- ☐ Yes ☐ No
- 9 * Does your project involve the use of **animal cells, tissues** or **biological fluids**?
- ☐ Yes ☒ No
- (10) * Do you intend to only use (1) **established commercial animal cell lines**, or (2) **slaughterhouse-derived tissues/fluids**, or (3) **fluids collected as part of routine animal husbandry** (e.g. milk) and no other animal tissues or biological fluids in your project?
- ☐ Yes ☐ No
- 11 * Does your project involve the **collection of rare or protected plants**?
- ☐ Yes ☒ No
- 12 * Does your project involve the generation or use of **genetically modified (GM) plant material**?
- ☐ Yes ☒ No
- (13) * Do you agree to (1) only use **established genetically modified (GM) plant cell lines, seeds, or plant products** in your project, (2) **not generate new plant mutations** using chemical or other means, and (3) follow specified SETU **containment and use protocols** for GM plant materials at all times?
- ☐ Yes ☐ No
- 14 * Does your project involve the use of **ionising radiation**? (e.g. use of gamma ray spectrometry)
- ☐ Yes ☒ No
- (15) * Do you agree to carefully **follow the instructions** of the SETU designated **Radiation Protection Officer (RPO)**, and **adhere to all legal requirements** as set out in the Radiological Protection Act 1991 (Ionising Radiation) Regulations ([2019](#)), regarding the use of ionising radiation materials and equipment?
- ☐ Yes ☐ No
- 16 * Does your project involve the **collection of any new (or primary) data** from **individual people or groups**?
- ☐ Yes ☒ No

(17) * Does your project involve the **collection of any new (or primary) individual or group data** that is **personally or uniquely identifying**? (e.g. data about people or organisations/companies/groups that could be used to identify those individuals or groups; data collection might take any form, including internet and social media data, etc.)

☐ Yes ☐ No

(18) * Will you ensure that participants who you are collecting data from are provided with **fair warning** and must provide **explicit informed consent** for any data collected?

☐ Yes ☐ No

(19) * Will you ensure that any project-related data collection, data storage, and data use is in **full compliance** with the **EU General Data Protection Regulation (GDPR)** and the **Data Protection Act (2018)**?

☐ Yes ☐ No

(20) * Does any of the data that you intend to collect include **sensitive or private personal information** about individuals, or **commercially sensitive information** about organisations/companies/groups?

☐ Yes ☐ No

21 * Does your project involve **persons under the age of 18 years** (i.e. minors), or **any vulnerable groups**? (e.g. prisoners, refugees, those in care, addiction service users, etc.)

☐ Yes ☒ No

22 * Does your project involve the use of **existing (or secondary) human data**? (i.e. data originally collected for another purpose)

☐ Yes ☒ No

(23) * Is the existing or secondary human data you intend to use either (1) **anonymous/non-personally identifying** and in the **public domain**, or (2) available with **explicit and specific informed consent or permission** for the data to be **legally** reused in the way you intend?

☐ Yes ☐ No

(24) * Are any aspects of the primary/secondary data you intend to use for the project **controversial** in nature?

☐ Yes ☐ No

25 * Before you submit the Ethics Checklist, you must **confirm all of the following**:

- ☒ I understand that the Ethics Checklist is a formal declaration.
- ☒ I have answered all questions on the Ethics Checklist carefully and truthfully.
- ☒ The supervisor/advisor (or principal investigator) for the project is present as the Ethics Checklist is being submitted, or they have given me explicit permission to submit it in their absence.
- ☒ I have had adequate ethics training and/or instruction prior to completing the Ethics Checklist.
- ☒ I understand, and agree to abide by, the general ethical principle of "do no harm" for this project.
- ☒ I will follow the instructions given in the Feedback Report.

26 * Authentication Code (ask your project supervisor/advisor for this code)

Enter Student Number:

Enter the Authentication Code below and click "Verify Code"

Note: If an INVALID authentication code is used then this submission is NULL and VOID

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