T-Level Hours Tracking for Department of Education (DFE)

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# Organisation Information and Project Overview

## Organisational Overview

The **Department for Education** is responsible for children’s services and education, including early years, schools, higher and further education policy, apprenticeships and wider skills in England. Some of their responsibilities include:

* Setting that national curriculum and educational standards for schools
* Supporting and funding schools, colleges and other educational institutions
* Developing policies on school standards, teaching and school leadership.
* Working on higher education, early years and education and further education
* Ensuring access to education for students with special educational needs and disabilities
* Regulating child safeguarding practices and ensuring child protection.

As well as one of their most recent ventures setting up and starting the T-Level which is the new way that the government is trying to get people to learn skills that are industry standard.

## Problem Overview

The Department for Education have requested that we created a system that will allow students, business, schools and teachers to track and monitor T-Level Placement hours. They have noticed that there are some major problems with the current system this is mainly since they don’t have a system, this is a key flaw and means that there is a large loophole in the system. It is on the responsibility of the student to report their hours.

Creating the new system will create a standardised system to verify the hours that they have created.

We are also able to get useful data about the T-Level Work Placements to see when most students are completing their work placements this could lead to possible changes to the curriculum.

This isn’t likely for every single student but there will be some students that would submit a detailed version of their diary this can lead to checking the work that they are completing which could be some useful data for schools and even the government.

# User Groups and User Stories

## Students

### Description

Students can log hours with a diary log of what they have done each day. As well as see and overview of the hours that they have completed with any notifications if they have had any hours cancelled, with the relevant feedback that was submitted.

### User Stories

|  |  |  |  |
| --- | --- | --- | --- |
| As a [user] | I want too | So that | Acceptance Criteria |
| Student | To use a website to log the hours I have completed at placement with a little bit of information. | I can remember how many hours I have completed without nagging my teacher to tell me how many hours are left | The user should be able to see a clear navigation system. There should be clear ways to navigate the entire site. You should clearly be able to add hours. |

## Teachers

### Description

Teachers will be one of the members of staff that is able to add students individually and via a CSV. You will be able to get an overview of all the students in your group to check if they are completing their hours correctly. You can check how many hours have been added by students as well as approve and reject any hours and leave them feedback based on the notes that they have submitted.

### User Stories

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| As a [user] | I want too | | So that | Acceptance Criteria |
| T-Level Coordinator | To be able to visit the site as a Course leader and see all the students that are enrolled on my course and see their progress on the placements. I want to be able to accept and review the hours that have been submitted. | | I can confidently sign off on their work placements to ensure that the users have completed the work placements. | The system should be clear and very understandable and should not be overly complicated. The system should be able to export a report for each student and export a report for a group/class of students. |
| T-Level Teacher | Should be able to manage my group and check each student work placement hours, check up on their logbook to view what they have been doing at work placement. Review, approve or deny any outstanding hours that haven’t been marked by the business as correct. | I can authorise the students that have completed their workplace. And view there hours that they have got left | | The system should be easy to use should give me useful information to assist in course admin etc. |

## School Admin

### Description

School admins will be able to get a whole overview for the school, showing how many students are in the school that are doing T-Levels with a summary of each year group and how many have completed work placements.

### User Stories

|  |  |  |  |
| --- | --- | --- | --- |
| As a [user] | I want too | So that | Acceptance Criteria |
| School Administrator | Be able to add students, create groups, create courses, and set the hours limits for each course. Need to be able to add teachers and set permissions for each teacher. | Teachers and the Subject Leaders can manage the course and use the system fully. | The system needs to be easy to use and should be able to mass import and export the data to keep data secure. |

## Trust Admin

### Description

Trust admins will be able to gain an overview of the schools that are part of their trusts. You will be able to add remove schools in the trusts, View your placements hours across all the schools. Generate a Trust-Wide Report, Generate a single report per school. Add and manage the school admins for each school in the trust.

### User Stories

|  |  |  |  |
| --- | --- | --- | --- |
| As a [user] | I want too | So that | Acceptance Criteria |
| Trust Admin | Be able to control the schools that are in my trust |  |  |

## Business Staff

### Mentor

#### Description

Some businesses will have a placement mentor some won’t so this might not apply for each business. A Placement mentor would be able to view the student that they are mentoring on placements at their business, they are able to add records and diary entries. You can approve, reject and adjust the logged hours to ensure accuracy as well as view their logbook for the logged hours to see and track their placement hours.

#### User Stories

### Manager

#### Description

Managers can see and overview of all the students that are on placed with your organisation, you are able to generate a detailed report of what the students are doing that are on work placement. With there hours that they need to complete with a log of what they have been doing each day. Aswell as manage the mentors that are managing each student.

#### User Stories

# Empathy Maps

|  |  |
| --- | --- |
| Says:   * I need to be able to view information about student placements | Thinks:   * I wish there was a good web based system that allows for me to check there hours tracked |
| Does:   * Using a spreadsheet that isn’t suitable for the job | Feels:   * Stressed that the system might fail |

# Laws, Guidance and Legislation

## Laws

### UK General Data Protection Regulation (GDPR)

Governs the collection, storage, processing and sharing of personal data in the United Kingdom. Personal data includes and information that can be linked to an individual or used to help identify them. Such has names, email addresses, IP addresses and even more.

Key Principles:

* **Lawfulness, Fairness and Transparency:**
  + You must clearly explain how any why you process data.
  + Users must know what you collect and how it will be used, this requires a privacy document.
* **Purpose Limitation:**
  + Data must be collected for a specific, explicit and legitimate purpose can’t just be collected for no reason.
* **Data Minimisation:**
  + Only collect the data necessary for your stated purpose.
* **Accuracy:**
  + Ensure all personal data is accurate and updated regularly
* **Storage Limitations:**
  + Personal data will only be stored for a certain period before it is deleted.
* **Integrity and Confidentiality:**
  + Protect data using appropriate security measures (encryption, firewalls and role-based access controls)
* **Accountability:**
  + You must document with GPDR principles (e.g., maintain data, processing records)

User Rights:

* **Right to be informed (privacy policies).**
* **Right of access (know what data is held).**
* **Right to rectification (correct inaccurate data).**
* **Right to erasure (request data deletion).**
* **Right to restrict processing (limit how data is used).**
* **Right to data portability (transfer data to another provider).**
* **Right to object (e.g., to marketing).**

### Data Protection Act 2018 (DPA)

Scope:

Extends and supplements the UK GDPR by providing specific rules for:

* Public authorities and law enforcement
* Intelligence services
* Special categories of data

Provisions:

* Tailored rules for sensitive data, such as biometric and genetic data
* Allows exemptions for public interest tasks, journalism or research purposes.
* Governs processing for law enforcement and criminal data.

### Privacy and Electronic Communications Regulations (PECR)

**Scope**:  
Covers electronic marketing, cookies, and electronic communications.

**Key Requirements**:

1. **Marketing Communications**:

* Email and SMS marketing require prior consent unless the user is an existing customer, and the message is related to a previous purchase.

1. **Cookies**:

* Consent is required for non-essential cookies, including analytics and tracking cookies.
* Display a cookie banner explaining cookies and allowing users to opt in or out.

1. **Consent Rules**:

* Must be freely given, specific, informed, and unambiguous.

### Consumer Rights Act 2015

**Scope**:  
Governs contracts for digital content and services to ensure transparency and fair treatment.

**Key Provisions**:

* Terms and conditions must be clear and not unfairly disadvantage users.
* You must provide remedies for defective services or digital goods.

### Computer Misuse Act 1990

**Scope**:  
Criminalizes unauthorized access to computer systems and networks.

**Key Provisions**:

* **Unauthorized Access**: It is illegal to access any computer system without permission.
* **Unauthorized Acts with Intent**: Prohibits actions like hacking or introducing viruses.

### Equality Act 2010

**Scope**:  
Requires websites to be accessible to users with disabilities.

**Key Requirements**:

* Ensure compliance with Web Content Accessibility Guidelines (WCAG) 2.1 AA standards.
* Examples include:
  + Providing text alternatives for images.
  + Ensuring website navigation is accessible via keyboard.
  + Using colour contrast ratios suitable for visually impaired users.

## Guidance and Legislation

### Information Commissioner's Office (ICO) Guidance

**Overview**:  
The ICO provides practical, detailed instructions on how to comply with data protection laws.

**Examples**:

* Templates for privacy policies.
* Steps for handling data breaches.
* Best practices for obtaining consent.

### Cookies and Consent Guidelines (PECR)

* **Overview**:  
  A globally recognized standard for managing information security.
* **Benefits**:
  + Helps safeguard against data breaches.
  + Demonstrates commitment to data protection.

# Functional and Non-Functional Requirements

## Functional Requirements

***The things that the website should do as a feature***

The definition of a functional requirement is something that the system must do, this can be simply how you do something on the website, this can be how we process your data. How your user inputs are dealt with. The destination for your data.

### Student Registration

This is a essential part of the system

* + First Name
  + Last Name
  + Email
  + Password
  + Confirm password
  + School ID
  + Course ID

### How will different users access the system

There are many different users that are going to be accessing the system instead of sending them to different URLs I have decided that the user is going to need to pick the role with the drop down menu on first login, This could lead to a little but of confusion but is going to be lot less confusing when it comes to actually using the system.

## Non-Functional Requirements

***How we do the nonfunctional requirements***

A nonfunctional requirement is something that the system will do in the background also know as the backend. Such as security, performance, uptime.

### Secure Password Storage

Any passwords that are stored on the system will need to be stored with encryption because in the unfortunate event that a unauthorised user has gained access to the database they aren’t able to locate any of the data and gain access to your account.

# Key Performance Indicators

***What does the business want the system to do for them?***

***Say why I’ve said that and why it is an important KPI to these businesses***

***Increase in revenue***

***Increase in the trust pilot score***

***Number of repeat visitors***

***Page loading times***

***Number of Reviews in general and several good reviews***

***Traffic by score increase in all sources***

# Risks

Assess the potential risks associated with a developing a software product appropriate to the context and market environment in which it is been developed:

* Data and system security
* Speed of development
* Combability with other systems that they might have
* Meeting the functional and non-functional requirements
* Meeting the KPI’s
* Legal and Ethical considerations
* User engagement
* Product Reach
* Potential impact of risks
* Contingency planning
* Ongoing Monitoring
* Assessment of Risk
  + Likelihood
  + Seriousness

## Cyber Security

* **Hacking and Unauthorized access:** Some users will have access to whole account administration this might be a risk for the system as there is a-lot of user data at risk. We can reduce this by having a 2 Factor Authentication based system for the high-level admins so that their accounts can’t be accessed without the use of a key
* **Malware and Viruses:** There is a big pool of malware and viruses out there that are aimed at stealing data from big systems especially. Ensuring that the software is website is hosted on an external server will limit this factor. Ideal in a facility with 24/7 staff to ensure that the server is maintained and running correctly.
* **Phishing and Social Engineering:** This is hard to enforce as there are users that fall for these types of scams, one of the ways that this can be prevented is with adding 2 Factor Authentication (2FAS) to ensure that users can’t access their account without the key. As-well as enforcement of a password change policy that will change the password at least once a month

## Data Risk

* **Data breaches:** Very common among computer systems. We can prevent this by ensuring that the server where the website is hosted and is secure. Another way to slow down the process of a Malicious user stealing the data would be to have the database hosted on a different server with a different IP address this means that they have to first of all gain access to the first machine then find the files that contain the information they are looking for as-well as then hacking the server where the database is hosted that has entirely different set of security and access rules. This can prevent and provoke possibly allowing an IT Team to intercept and stop the connections.
* **Data Loss:** Ensuring that a regular backup schedule is maintained is the keyway to ensure that this can’t happen. Having development happen on an entirely different server would also reduce this error as they are testing with non-live data that won’t be linked to anyone or even real data. So, the loss of this is not important whereas testing in the live environment could lead to loss of data which will also lead to other issues.
* **Data Integrity Issues:** Ensuring that the data is all checked before it is added to the database will reduce the issues here. But there is always things that can slip by, If this happens then we need to rely on the user to report this so the issues can be fixed.

## System Reliability

* **Hardware issues:** Having the system hosted with a dedicated team will ensure that there is little to no downtime
* **Software bugs:** This can be reduced by having an entirely different development branch ensuring that changes that are been made can’t be pushed to the live server without senior development staff full testing.
* **Downtime:** It is inevitable with any type of system. But having a dedicated team would hopefully reduce the amount of downtime to keep to system up and in a useable state for as much time as possible.

## Compliance and Legal Risks

* **Violation of Regulations:** Not complying with laws like GPDR will result in fines and other legal actions so it is essential that these laws are followed 100% of the time with the live environment.

## Privacy Risks

* **Surveillance and Tracking:** The system will not track the users and will not have anything related to tracking them.

## Operational Risks

* **Human Error:** There is little to no way to reduce human error other than adding verification for things that are dangerous that will edit and manipulate the data. This can be done by prompting and having the user confirm that they want to change the data. If they don’t then they need to be sent back without editing or changing any files.

# Decomposition

Diagram

Explain thought process

Website: PlatyPi Hours Tracker

* Login
  + Login System
  + Contact Support
* Student Dashboard
  + Navigation Bar
  + Create and Entry
    - Date
    - Logbook Entry
    - Hours
    - Submit
  + Generate a Report
  + Table to view hours that have been submitted
    - Edit
      * Log
      * Completed Hours
      * Save Changes
    - Delete
      * Confirmation Prompt
        + Ok
        + Cancel
* Staff Dashboard
  + Navigation bar
  + Table of the students
    - Clickable names to select each student
      * Table of the student’s placement hours. Filterable via verified and not verified.
      * Option to verify the hours
      * Option to deny the hours
        + Leave feedback on why they were denied
* School Admin Dashboard
  + Manage staff
    - Create new staff
    - Delete Staff
    - Overview of staff
    - Edit
    - Delete
* Trust Management
  + Manage Staff
    - Create new staff
    - Delete Staff
    - Overview of staff
    - Edit
    - Delete
  + Manage Schools
    - Create a new school
    - Delete a school
    - Edit a school
    - Overview of Schools
* Business Staff Dashboard
  + View Students
    - Accept hours
    - Deny hours
      * Leave Feedback
* Business Management Dashboard
  + Manage Staff
    - Add Staff
    - Remove Staff
    - Edit
    - Delete
    - Overview
* Site Administration
  + Create a new Trust
  + Edit Trusts
  + View the Audit Log
    - Filter and Index

# Alternative System

|  |  |
| --- | --- |
| **Source:** |  |
| **Overview:** | Toggl is a popular time-tacking app that allows for users to log there hours for any tasks that they feel the need, making it great for students to track their work placements |
| **Features:** | * Time tracking with start and stop functionality * Detailed reports and summaries * Mobile and Desktop apps * Integration and other tools like Google Calendar, Slack, etc * Free plan available with premium options for additional features |
| **Downsides:** | Individuals who need an easy-to-use, flexible system for tracking hours. Not helpful when your business-related person needs to verify your hours. |

|  |  |
| --- | --- |
| **Source:** | <https://clockify.me/> |
| **Overview:** | Clockify is a free time tracking software that is suitable for students who need to track their hours during placements. It offers both manual time entry and a timer feature |
| **Features:** | * Tracks time in real-time or manually * Offers reports and analytics * Can categories hours by project and task * Support both individuals and team usage * There is a free plan but more |
| **Downsides:** | Still not great for the user requirements as users will |

# Description of proposed solution

In the rest of this document, I have been analysing and setting the requirements for the system. In this section of the document, I will be talking about the solution that I propose and showing the been

## Key features and benefits

### Proof of completion:

Implementation of the system will reduce the number of students that try and avoid doing their work placements would dramatically decrease as they must submit there and logbook of what they done each day

### Less work for teachers:

As a current T-Level student I have experienced the hassle with requesting how many hours I have completed on a regular basis, as from my experience the tutor has asked for us to log all the hours that we have completed on work placement and email back, this created extra work for your tutor who is already very busy, this system will reduce that time and ensure that you have the data read and handy when ever needed.

### Data and Statistics:

Having access to data about student work placements is crucial. This system enables the collection and analysis of statistics, which can drive improvements in the structure and delivery of work placements.

### Logbook:

A digital logbook is another essential feature. It allows students to reflect on and document the skills they’ve gained during their placements. This resource can be invaluable when applying for jobs, writing CVs, or preparing personal statements, as it provides concrete examples of work experience and achievements.