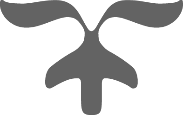


A Level Computer Science Project

[Document subtitle]



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# **Analysis**

## What is the problem?

Describe what the problem is, the cause of the problem, and how it will benefit the client from any other program

After having an interview with my client and getting the requirements, the problem they want me to solve is straight forward. My client works for a company who deals with flight missions and currently, my client uses a notepad and pen to record down the variables of the flight during each mission by using a manual database. This is very inefficient because there is a lot of flights and data, meaning that human error could take place, as well as being time consuming because my client may have to search through the data manually. Due to human error, the client also makes mistakes and crosses out information, making it hard to understand what the information is, so the client wants some sort of software that allows them to do this electronically, giving them the option to update information. They want me to make a program which logs a flight mission, imports a KML, allows them to write a timeline of events during the mission, saves the inputs in a database and then print in a table format as a PDF. If the client then wants to input the data, from the notepad, into a computer, the manual note taking is useless because there is repetition of inputting data, which can be made redundant because the problem I will be trying to solve will allow the user to input the variables there and then – taking out the notepad stage. In addition to this, the problem I will be trying to solve will be high in the client-side, because it will have a GUI to visualise the form, KML, print layout etc. in a clear, easy-to-read format.

## Computational Methods

Described and justified the features that make the problem solvable by computational methods, explaining why it is amenable to a computational approach. Describe my a manual system is not good for this problem

This problem needs a computational approach to solve it, rather than a manual/human approach, because the program would need to store a lot of information; if there is, for arguments sake, 100 different dates, it would be difficult to search for data months ago because a hand-written database doesn’t give you the privilege of searching data via queries; it is much more efficient to store the data on an electronic database. Having a hand-written database can be prone to human error, because each day (a record) will have similar data and can be very repetitive, allowing the user to make mistakes. The program also needs to import a KML and a computer is needed in order to do this – this cannot be done manually, or if so it is difficult, such as physically drawing out the flight route onto a map. Furthermore, if the user enters a note in the timeline for 10:00, and then decides to add another note at 09:00, the program can rearrange the table timeline so it is in chronological descending order; however, if the user was doing this manually, then they would have to try and fit the time and notes above the current time and/or throw the paper away and start all over again. Allowing the user to edit and change current data, this program will help the user if they make mistakes.

## Stakeholders

### Identified suitable stakeholders for the project and described them explaining how they will make use of the proposed solution and why it is appropriate to their needs.

People interested in this program would include anyone who has the need for/wants to log their flight mission. This could be anyone who has anything to do with the military, in the drone business, or works for a boarder control agency such as Frontex. My client and my end users is anyone who is familiar with flight missions because there will be a lot of key terminology used in this program (such as ETD, ETA, MSN, Eng On etc.)

My client/stakeholder will have a major impact on the programs development because not only they will see this project all the way through, giving me feedback at each stage and suggestions on how it could be improved (and satisfying them), but they will also directly influence the specification points that the program must meet to be successful.

## In addition to this, I will need to produce a prototype of the program that is on course with the development timeline, by meeting the client’s needs, and if not, I will have to adapt that module to ensure the program meets my client’s needs. The client will give me feedback periodically (for example, every week or fortnight), meaning that the client can see every step of the project, from start to finish, and if they are satisfied with the project one week and the next they are not too keen on the project, I can easily retrace my steps in the program and adapt the particular part of the program, therefore the functionality of the program meets the clients satisfaction.

Because my end user is only a single client, I will not have to worry about clients disagreeing on how the program should be improved/changed.

## 

## Resaerch

**First interview**

* During the first interview with the client, they specifically said what they wanted, drawing up an outline design of what the final product they want. I asked what their current situation/problem is, and how they

**Existing Products**

* Adobe Acrobat allows me to convert, edit, sign and print PDF’s. This application is useful for when the end user would like to export a file as a PDF.
* Log application
* Google Maps and OpenStreetMap are mapping software allow the user to view a map of the world via the internet, having the ability to import a KML onto the map.
* Excel is a spread-sheeting software, meaning that my client can create tables as well as importing a KML. Excel is an easy to use, generic application that my client can use already, however, using a database in excel is not efficient, consistent and reliable.

**Second Interview**

## 

## Appropriate features to incorporate into the solution

### Researched the problem in depth looking at existing solutions to similar problems, identifying and justifying suitable approaches based on this research.

## Features of the computational solution

### Identified the essential features of the proposed computational solution explaining these choices.

## Limitations

### Identified and explained with justification any limitations of the proposed solution.

## Requirements

### Specified and justified the requirements for the solution including (as appropriate) any hardware and software requirements.

The client want a program that records the different variables related to a flight mission (such as: engine on, take off, ETD (estimated time of departure), working out the flight time, then saving the inputs into a database. My client can have the option to upload a KML (Keyhole Markup Language) which can then be placed over a Google Maps (or other geographical software). My client can then see all the different dates and can select one, displaying all the inputted data in a table format, the KML on a geographical system, such as google maps . There will be an option to input and view data in a timeline for each date where the client can a time and the event that took place: for example, at 10:00, an event happens during the mission. Another table would be needed for this – having time and events as the column headings. However, if the user then adds a note at 09:00, then this will go before the 10:00 note so I need to create a function that orders the timeline in a chronological order. The client can have the option to print the table of data, KML, and timeline as a PDF, having the table of data and KML on one side, and the timeline on the other. My client also wants the DEA (Diamond Executive Aviation) logo printed on the PDF so I’ll need to import that image somehow.

## Success Criteria

### Identified and justified measurable success criteria for the proposed solution.