
Software Design and Implementation

TrekStar Software System

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Todo - *remove me before submission pls*

- Using List Materials requires screenshot that shows projectid listings when id issue is resolved.
- Using Maintenance Mode requires screenshot of the maintenance main menu when remove project is added.
- User guide details required for when the application is able to manage crew and materials/projects fully.
- Update Using Add Project to reflect changes to saving a project.

Contributions

Callum Axon (N0727303)

- Stuff

Callum Carney (N0741707)

- Other Stuff

Matthew Robinson (N0724629)

- More Stuff

System Description

The Trekstar system has been developed in order to allow TrekStar Pictures to accomplish the following

- Create and Manage Projects including any relevant metadata
- Create and Manage Project Materials (single-sided DVDs, Blu-rays, etc)
- Create Projects that are “unreleased” and cannot be modified once created
- Include details in regards to the crew working on a Project

Class Diagram

Include class diagram here.

Cohesion and Coupling Considerations

A justification and explanation of how cohesion and coupling have been considered in the design.

Sequence Diagram

Include sequence diagram here

State Diagram

Include state diagram here

Component Diagram

Include component diagram here

Deployment Diagram

There are two possible deployment scenarios for the TrekStar management system, these being:

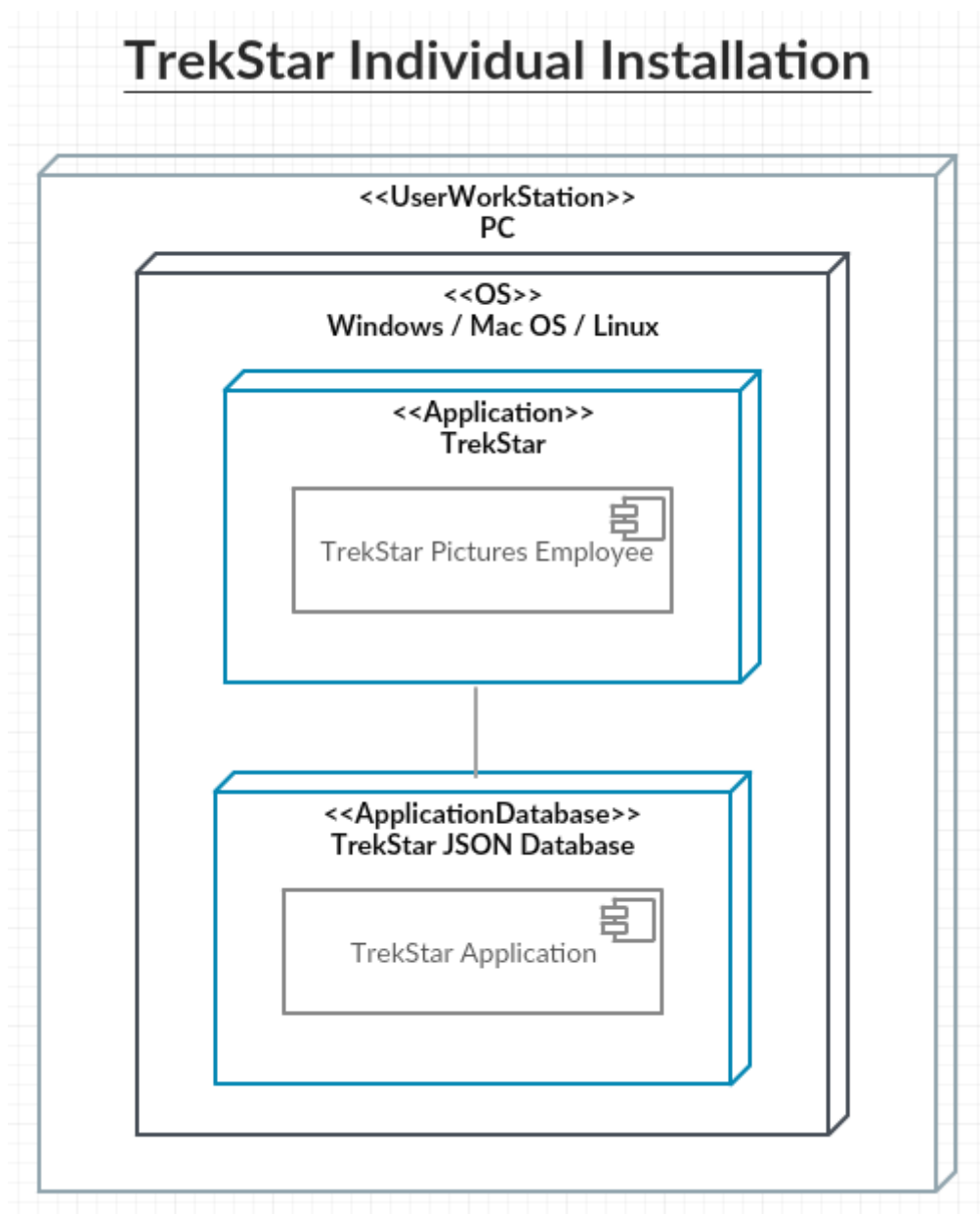
1. An individual user will have the TrekStar project management system installed on their machine, using a locally stored JSON Database.
2. TrekStar Pictures will release the TrekStar project management system company-wide, using a shared JSON Database for each installation.

These two deployments are different due to the change in the data storage location, in which the latter will support company-wide collaboration through the application.

However, no matter where the application is installed the following Operating Systems are supported:

- Windows
- Mac OS
- Linux

On the following pages you can find a visual representation of the aforementioned Deployment scenarios.

Individual Installation**Figure 1:** Visual Representation of Individual TrekStar installation

Company-Wide Installation

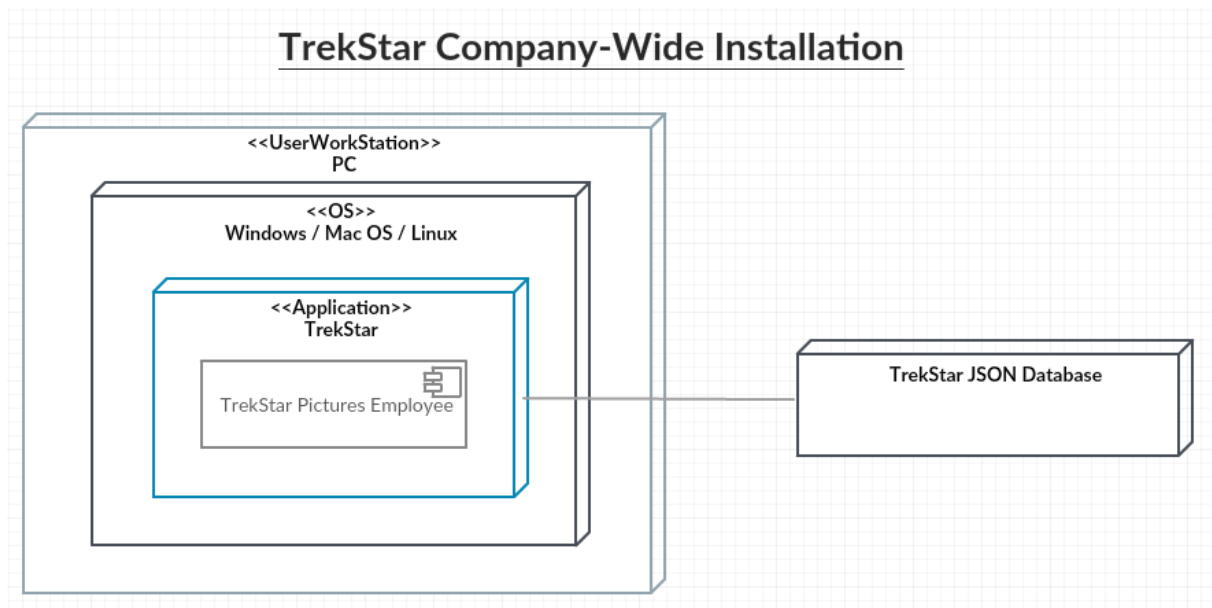


Figure 2: Visual Representation of Company-Wide TrekStar installation

Design Pattern

Include explanation of any design patterns used

Planned Architecture

An explanation of the planned architecture and the reason of the choices according to ATAM (follow step 4 and 5, i.e., identify possible architecture styles and choose one with respect to the identified utility tree, you need to explain the reason).

Included C++ Libraries

Include explanation of any C++ Libraries used

Internal Data Structures

Include explanation of what internal data structures were used.

Search/Sorting Algorithm

Include explanation of the search/sorting algo used.

UI Screenshots

Include screenshots of console app here.

Software Testing Prodcedure

Include explanation of software testing procedure here.

User Manual

Software Introduction

The Trekstar project management application has been developed for TrekStar Pictures and allows them to create and manage Projects along with their associated product materials and metadata. This guide will cover how to use the core features of the application, which includes:

- Using the main menu
- Using view mode
- Using maintenance mode

Using the Main Menu

To use the Main Menu, open the application and you will be presented with the following screen

```
Welcome to TrekStar Management System | Console
Type 'help' to see all available commands
-----
Main Menu
-----
1 - view mode
2 - maintenance mode
3 - quit
-----
>
```

Figure 3: Visual representation of the Main Menu

Once on this screen, you can use the following keyboard inputs to navigate around the application, to find out more about each feature, click the associated information link.

Input Value	Command Action	Information Link
1	Inputting this value will cause the application to enter View Mode	Using View Mode
2	Inputting this value will cause the application to enter Maintenance Mode	Using Maintenance Mode
3	Inputting this value will cause the application to safely exit	Not required

Using View Mode

Once you have reached the View Mode page you will be presented with the following screen

```
-----
View Mode
-----
1 - list projects
2 - search projects
3 - list materials
4 - go back
-----
>
```

Figure 4: Visual representation of View Mode

Once on this screen, you can use the following keyboard inputs to navigate around view mode, to find out more about each feature, click the associated information link.

Input Value	Command Action	Information Link
1	Inputting this value will cause the application to list projects	Listing Projects
2	Inputting this value will cause the application to enter search mode for materials	Using Search Projects
3	Inputting this value will cause the application to list materials	Listing Materials
4	Inputting this value will cause the application to navigate back to the Main Menu	Not required

Using List Projects

Once you have entered the List Projects functionality you will be asked if you wish to sort all of the projects by their title, you can enter *y* to confirm that you wish for the projects to be order by their titles and *n* to decline.

```
Sort by title? (y/n):
```

Figure 5: Visual representation of the application asking if you wish to sort by title

You will now see the projects that are held within your applications database, you can see an example of this below.

```
-----
Project 1
-----
Title           : A Great Movie
Summary         : A super hero does stuff again
Released        : 1
Playing in theatres : 0
Keywords        : Action, Superhero
Available on     : dvd, bluray, boxset, dsdvd
-----
List Projects
-----
1 - next project
2 - previous project
3 - go back
-----
>
```

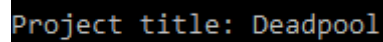
Figure 6: Visual representation of project listings

As you can see in Figure 6, there are more options available to you, these options allow you to navigate through the projects. You can see the associated input actions below.

Input Value	Command Action
1	This will cause the application to move onto the next project in the database
2	This will cause the application to move onto the previous project in the database
3	This will cause the application to navigate back to View Mode

Using Search Projects

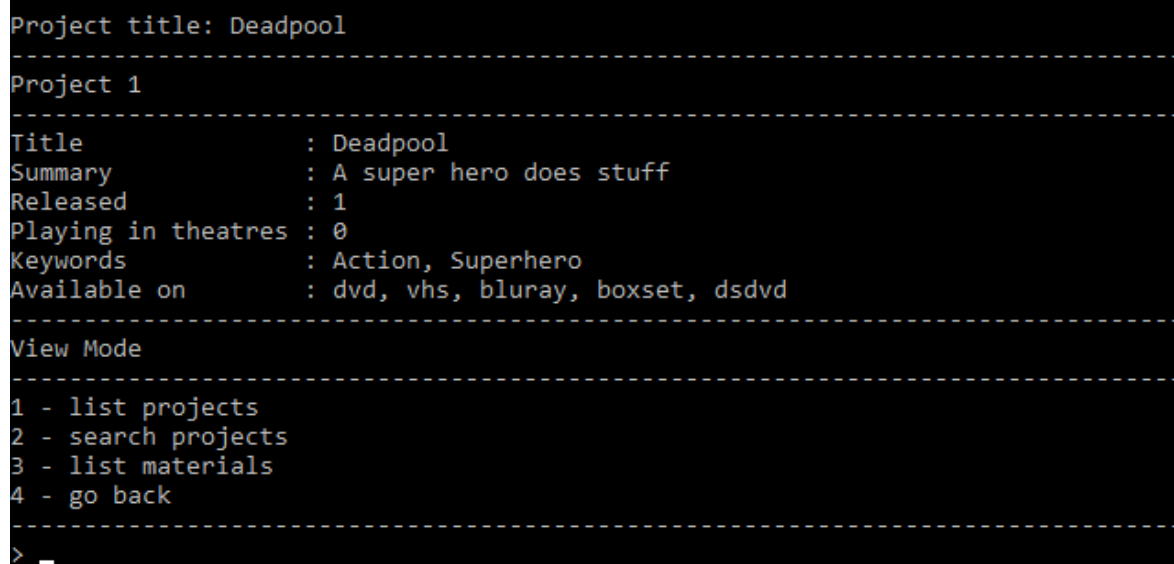
Once you have entered the Search Projects functionality you will be asked to input a search query, this can be any value and data will only be returned if there is an associated project title held within the database.



```
Project title: Deadpool
```

Figure 7: Visual representation of the application asking for a search query

You will now see the associated projects that matched to your search query, you can see an example of this below.



```
Project title: Deadpool
-----
Project 1
-----
Title           : Deadpool
Summary         : A super hero does stuff
Released        : 1
Playing in theatres : 0
Keywords        : Action, Superhero
Available on    : dvd, vhs, bluray, boxset, dsdvd
-----
View Mode
-----
1 - list projects
2 - search projects
3 - list materials
4 - go back
-----
> _
```

Figure 8: Visual representation of a project being discovered from a search query

As you can see in Figure 8, there are more options available to you, these are the options associated with View Mode, therefore you can find more information by reading the View Mode section of this user guide.

Using List Materials

Once you have entered the List Materials functionality you will be asked to input a Project ID, this must be a numeric value, you can find the accepted Project IDs above the input location, select an ID from this list.

Visual representation of selecting a Project ID to list materials for

You will now see the materials linked to the requested project that are held within your applications database, you can see an example of this below.

```

-----
Material 0
-----
Additional Language Track 1 : FRA
Additional Language Track 2 : GER
Additional Subtitle Track 1 : FRA
Additional Subtitle Track 2 : GER
Audio Format : DTS
Bonus Features 1 : Director's Comments
Content : big movie
Format : dvd
Frame Aspect : 16:9
Language : ENG
Retail Price : 9.990000
Run Time : 120
Subtitles : ENG
-----
List Materials
-----
1 - next material
2 - previous material
3 - go back
-----
>

```

Figure 9: Visual representation of material listings

As you can see in Figure 10, there are more options available to you, these options allow you to navigate through the materials. You can see the associated input actions below.

Input Value	Command Action
1	This will cause the application to move onto the next material in the database
2	This will cause the application to move onto the previous material in the database
3	This will cause the application to navigate back to View Mode

Using Maintenance Mode

Once you have reached the Maintenance Mode page you will be presented with the following screen

Visual representation of Maintenance Mode

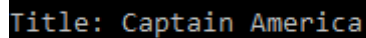
Once on this screen, you can use the following keyboard inputs to navigate around maintenance mode, to find out more about each feature, click the associated information link.

Input Value	Command Action	Information Link
1	Inputting this value will cause the application to enter add project	Adding Projects
2	Inputting this value will cause the application to enter remove project	Removing Projects
3	Inputting this value will cause the application to save all changes to the database	Not required
4	Inputting this value will cause the application to navigate back to the Main Menu	Not required

Using Add Project

Once you have entered the Add Project functionality you will be asked to enter the following information:

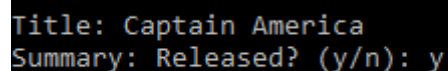
Project Title, this is the name that you want your project to be called. Any value is accepted.



```
Title: Captain America
```

Figure 10: Visual representation of the application asking for a Project Title

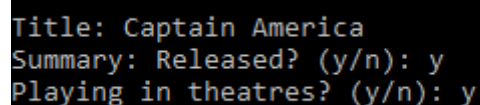
Next, you will be asked if the project has been released. Only the values *y* and *n* are accepted. With *y* confirming that the project has been released and *n* confirming that the project has not been released.



```
Title: Captain America  
Summary: Released? (y/n): y
```

Figure 11: Visual representation of the application asking if the project has been released

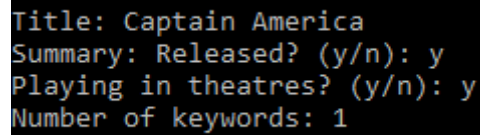
Next, you will be asked if the project will be playing in theaters. Only the values *y* and *n* are accepted. With *y* confirming that the project will be playing in theatres and *n* confirming that the project will not be playing in theatres.



```
Title: Captain America  
Summary: Released? (y/n): y  
Playing in theatres? (y/n): y
```

Figure 12: Visual representation of the application asking if the project will be playing in theatres

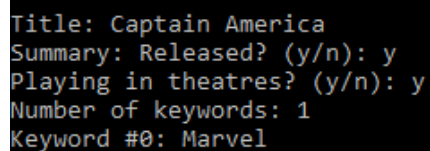
Next, you will be asked how many keywords you would like associating with the project. Any numeric value is accepted.



```
Title: Captain America
Summary: Released? (y/n): y
Playing in theatres? (y/n): y
Number of keywords: 1
```

Figure 13: Visual representation of the application asking how many keywords should be associated with the project

Finally, you will be asked what keywords you would like associated with the project, the amount of keywords requests depends on the previously entered numeric value. Any value is accepted.



```
Title: Captain America
Summary: Released? (y/n): y
Playing in theatres? (y/n): y
Number of keywords: 1
Keyword #0: Marvel
```

```
-----
Maintenance Mode
-----
```

```
1 - add project
2 - save changes to file
3 - go back
-----
```

```
>
```

Figure 14: Visual representation of the application asking for a keyword

As you can see in Figure 16, there are more options available to you, these are the options associated with Maintenance Mode, therefore you can find more information by reading the Maintenance Mode section of this user guide.

Using Remove Projects

todo

Conclusion

Discussion and conclusion about your results (reflection on testing approach, reflection on performance such as computational efficiency, reliability, security, portability, maintainability, scalability, etc. design of system complexity using e.g. big O- notation).

Appendix