

# CPSC 304 Project Cover Page

Milestone #: 1

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Group Number: 124

Name	Student Number	CS Alias (Userid)	Preferred E-mail Address
QueAnh Ngo	83827527	g4j1w	emeraldnqa@gmail.com
Senlin Sun	50218502	u0a8c	sun.senlin0@gmail.com
Raymond Li	58216474	x3c6y	li.raymond04@gmail.com

By typing our names and student numbers in the above table, we certify that the work in the attached assignment was performed solely by those whose names and student IDs are included above. (In the case of Project Milestone 0, the main purpose of this page is for you to let us know your e-mail address, and then let us assign you to a TA for your project supervisor.)

In addition, we indicate that we are fully aware of the rules and consequences of plagiarism, as set forth by the Department of Computer Science and the University of British Columbia

## 2. Brief Project Description

### What is domain of your project?

The domain of our project will be on astronomy and space science, which involves tracking different types of celestial bodies and their phenomena, along with related scientific research. The application will also be recording, and storing data about different celestial bodies' type, their phenomena, linking relevant theories explaining the phenomena. Additionally, the application will also be storing data about astronomers, observatories, telescopes and images taken of the celestial bodies. This project can serve as a resource for students, researchers, and astronomy enthusiasts, with relevant queries for educational purposes such as comparing stars, identifying stars or planets coordinates, or finding visible celestial bodies.

### What aspects of the domain are modeled by the database?

- The database models the following entities:
  - Celestial Bodies (stars, planet, blackhole, galaxies) with attributes: name, coordinate, visibility, distance, radius. Each type of the entity also has its own attributes as well
  - Phenomena: name, explained (binary yes/no)
  - Observatories: Observatory ID, name, address
  - Astronomers: Astronomer ID, name, whether the astronomers are still actively working (yes/no)
  - Theories: name, founder, date found, content, indication whether the theories has been proven yet (yes/no)
  - Picture: Picture ID, Celestial Body, the they were date taken, link to the image
  - Telescopes: name, manufactured date, model. The entity is part of a weak entity set to observatories
- Beside the entities, the database will model different relations between entities, whether the phenomenon appears in different types of celestial bodies, who discovered those phenomena, what is contained in the pictures taken from space, how it is taken, and where it is taken from. By modelling these entities and relations, the database will be a comprehensive beginner guide and resource to the field of astronomy.

## 3. Database Specification

### What functionality will the database provide?

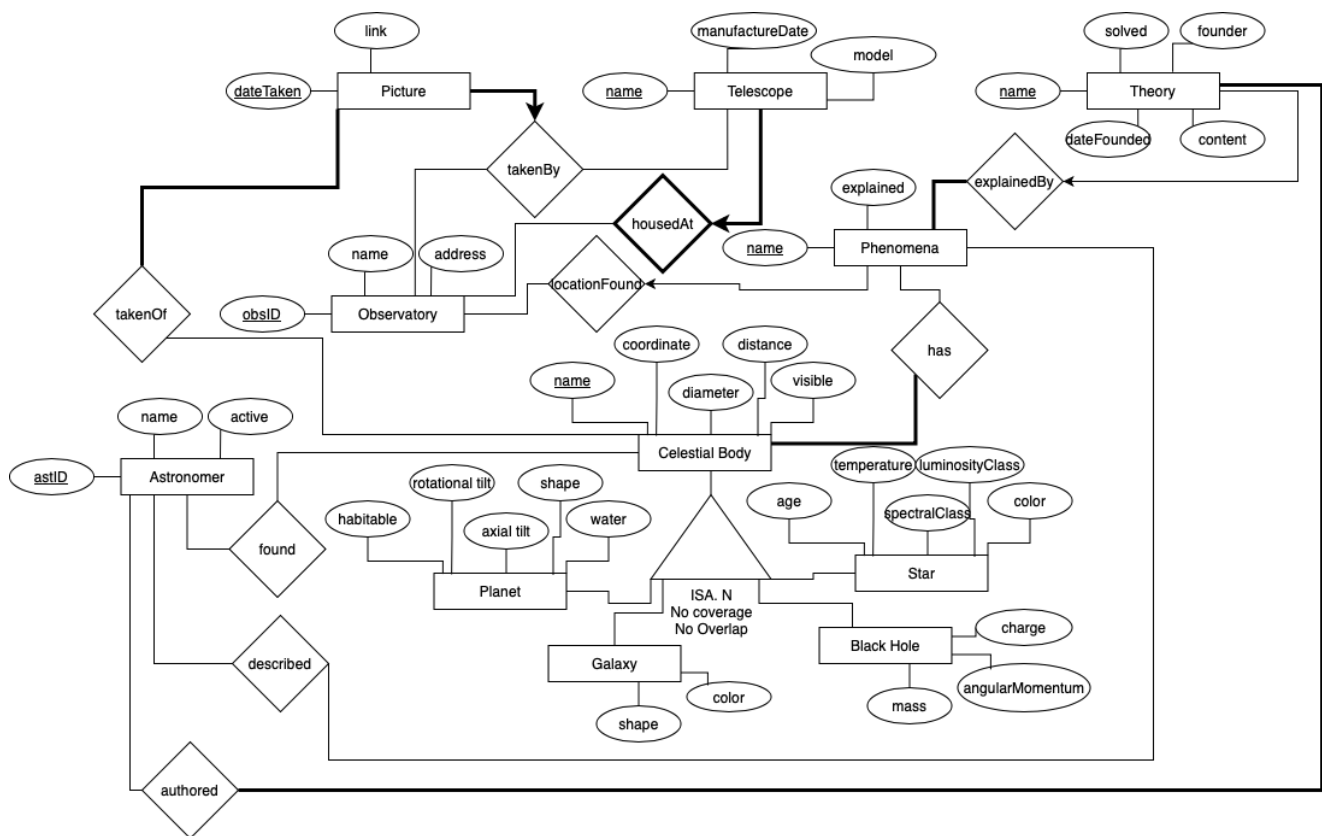
- The database will provide storage of information about celestial bodies, phenomena, observatories, astronomers, theories, images, for efficient access and retrieval. Users will also be able to filter information about each object using their attributes or relations such as celestial bodies with radius larger than Earth, or theories found by specific

astronomers, etc. Additionally, by having complex relations between different objects, users can track historical discoveries, astronomers' work life, link celestial events to astronomers who work on them, and theories that explain them. This interconnected structure will ease access and data analysis.

## 4. Application Platform

- SQL\*Plus/Oracle will be our DBMS, while we will use JavaScript and HTML for the backend of the application written on IntelliJ IDEA. Finally Git and GitHub will be used for collaborative work

## 5. ER Diagram



## 6. Additional Comments

- Grammarly was used to rephrase sentences within this Milestone
- No other AI tools were used in this Milestone beside Grammarly