You’ll be building a model of a house using a Lego-style design application.

You can use real Legos if you have them, or you can download the app from <https://www.leocad.org/download.html>.

Build a model of a house with whatever pieces you want. After you have built your house model, answer the questions.

Include a screenshot of your model.

\*You can work in pairs but be sure to include both names on your submission. Only one of you needs to make the submission.

1. After you have built your house, list some of the entities and their relationships involved in the model.

* Guards are to protect the King’s children, Bart and the Jester
* The Gatekeeper only allows people of certain status inside.
* Guards also (try to) defend the house from hostiles.
* Mini-Guards will make sure the person entering the castle does not have anything dangerous or harmful in their possession.
  1. Are there any additional properties, rules, or behaviors that you need to describe, in sufficient detail, the entities and their relationships?
* The Gatekeeper only lets people in if they: are Guards, are Messengers, are a Family or Friend to the King, and if they have Special permission.
* There may be people who try to bypass the gatekeeper.
* People cannot navigate through walls or windows; only doors.

1. Is your house a static or a dynamic model?

* Static, most roles and elements will not change.

1. This is an imperfect model of a house in many ways.

**Note**: this is **not** a commentary on your building ability; just a statement of fact.

* 1. In what ways can your model simulate a real house?
* The house can withstand simple weather elements like rain and snow, and also has a different key/lock system. There are also multiple walls inside the building that provide infrastructural support.
  1. Name one or two things about a real house that your model cannot simulate.
* The model does not consider the weight of building materials that are used, and has an outdated key/lock system when compared to regular modern houses.
  1. Could your model lead you to erroneous conclusions about real houses? Why or why not?
* No, much of the design is outdated and inefficient, and it would also require a lot of building material in order to construct. This model would very likely be skipped for another model that has a better and more simple design.

1. Look at other classmates’ models on Zoom via screenshare. There are several different types of model houses.
   1. What do they have in common?

* All houses have a basic frame and roof, with at least one door.
  1. How do they differ?
* Some houses are made of different material. One uses bricks as walls, while another uses glass panes.
  1. Of the previous two answers, which one describes the abstract concept of “house”?
* The building made of bricks, since it appears to be more compact and structurally stable, as well as looking appealing on the outside.

1. What applications does modeling have outside of abstracting houses and computer programs?

* Modeling can be used in problem-solving, breaking-down large projects, and can also be used in tactical thinking when planning for combat.