GNG 1103 F: Deliverable B (Needs Identification and Problem Statement)

Name	Student Number
Patrick Huang	300097191
Thomas Boyd	300117763
Pion Das	300124924
Marie Daoust	

Needs:
-organic chemistry should be easier to understand
-users should be 2nd year university students
-comprehending either size and time scale, molecules, reactions and proportion, and connection between molecular and macroscopic.
-show constant movements of molecules (internal and external)
-show successful and unsuccessful collisions
-show proportions of species

Design Constraints:
-must have a criterion that indicates that the user has achieved the learning outcome
-must convey the learning outcomes to the user
-must be interactive
-must be scientifically accurate
-must have the following organic chemistry colouring scheme:

Question	Customer Statement	Interpreted Need
User-specific needs	Organic Chemistry should be easier to understand	Create a VR game that is visually stimulating
	Users are 2nd year university students	Using chemistry principles, make the VR game interactive and challenging
Design-specific needs	Has learning outcomes	Design goals for the VR game
	Must convey learning outcomes to the user	State the rules before the start of the game
	Interactivity	User has to make choices in

		the game
	Scientifically accurate	The game has to summarize the reality of chemistry principles
	Must follow a colour scheme	Oxygen = red,Nitrogen = blue, Carbon = grey/black, Hydrogen = white
Learning outcomes	Estimate the amount and proportions of molecules present	Show proportions of species
	Explain the probabilistic nature of collisions	Show how collisions work
	Explain/ identify the requirements for a successful collision.	Show successful and unsuccessful collisions

Importance: 3 Critical, 2 Highly desirable, 1 Desirable

Needs	Priority #
Design goals for the VR game	3
The game has to summarize the reality of chemistry principles	3
State the rules before the start of the game	2
Colour scheme	2
Create a VR game that is visually stimulating	1
User has to make choices in the game	2
Interactive and challenging	3

Problem statement: **A need exists for universities to provide second year organic chemistry students with a deeper understanding of the reactions and proportions of organic molecules, with a VR game that is interactive, conveys specific learning outcomes, and most importantly, fun.**