

# Breakdown of "Initial Research and Planning"

---

- **Description:** This step involves gaining an understanding on what is needed for our project, why it is important, and what previous similar attempts have been made at tackling the underlying problem. We will also be planning out a high-level schedule of the rest of this semester to schedule milestones for the project
- **Entrance Criteria:** Project description
- **Exit Criteria:** Understanding of the project scope, resources detailing past attempts, a Gantt Chart

# Examples of Gamification in Healthcare

---

- **Join For Me [3]:**
  - Targets overweight adolescents at risk for diabetes
  - Promotes physical activities for maintaining good health
- **GameMetrix Solutions [3]:**
  - Platforms based on other classic games like Solitaire and Jeopardy
  - Pull patients into games using familiar game mechanics
  - Used to help manage chronic illnesses
- **GestureTek Health [4]:**
  - VR exercise programs to enable patients to have fun while rehabbing injuries

# Examples of Gamification in Healthcare

---

- Syandus's COPD [3]:
  - Create and control a virtual patient
  - Control variables by inserting actual medical record information
  - Tweaking tools for environmental variables and patient responses
  - Allows for introduction of drug therapy to the patient

# Previous Works

---

- In 2018, Dr Mark L Braunstein and a group of University of Queensland IT students developed the prototype CBL/PBL platform and conducted some informal evaluations.
- CBL/PBL platform was connected to a simulated RHU environment developed by the CSIRO Australian e-Health Research Centre using the FHIR and SMART standards.
- CBL/PBL platform was evaluated by students from three medical schools. The results shows that this platform can be used by students who have no prior knowledge of healthcare and no familiarity with FHIR and SMART.
- In 2019, the prototype was redeveloped as a production set of FHIR apps by a programming team based at the Australian e-Health Research Centre.

# Our Works For This Project

---

- A tool for the case author to
  - Indicate the specific physical examinations most relevant to the case.
  - Input the results of those examinations in this case.
  - Select from various options developed by the team that writes this app for making the physical exam a 'game'.
- An attractive, appropriate and creative UI for the health students to perform the simulated physical exam.
- Instantiate the findings into the appropriate FHIR resources and write them to the simulated EHR.

# References

---

1. Braunstein, M. L., Oancea, I., Barry, B. K., Darlington, S., Steel, J., Hansen, D. P., ... Wong, T. T. (2019). The development and electronic delivery of case-based learning using a fast healthcare interoperability resource system. *JAMIA Open*, 2(4), 440–446. doi: 10.1093/jamiaopen/ooz055
2. Johnson, D., Deterding, S., Kuhn, K.-A., Staneva, A., Stoyanov, S., & Hides, L. (2016). Gamification for health and wellbeing: A systematic review of the literature. *Internet Interventions*, 6, 89–106. doi: 10.1016/j.invent.2016.10.002
3. 3 More Ways Gamification in Healthcare is Making a Difference. (n.d.). Retrieved from <https://www.zelis.com/resource/3-more-ways-gamification-in-healthcare-is-making-a-difference/>
4. The Top 15 Examples of Gamification in Healthcare. (2018, October 2). Retrieved from <https://medicalfuturist.com/top-examples-of-gamification-in-healthcare/>