Project Milestone 3: Proposal [group 6]

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Project name: To save a Heart

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1. Data and data questions

The data can be downloaded publicly from https://www.kaggle.com/ronitf/heart-disease-uci as a.csv file. There are 314 data cases and 14 data dimensions in this relational dataset collected from 2 cardiology institutes and 2 Universities. The data dimensions describe patients by age, sex, chest pain type, resting blood pressure, serum cholesterol, fasting blood sugar, resting cardio graphic maximum heart rate achieved, exercise induced angina, old-peak, slope peak exercise, number of major vessels, and thal. Questions we hope to answer: Are there emerging patterns for patients who experience cardiac issues at a younger age? Are there warning signs that a cardiac arrest is imminent given the pain described and the underlying symptoms? Is there a threshold at which a patient needs invasive surgery, or can surgery be avoided?

2. Research question(s)

In our research we will consider: what visualization techniques can be applied to a dataset to make it more inclusive to people with damage to visual systems, attention, or other cognitive functions; what ways can data be presented in a way that requires less working memory; what techniques are effective in drawing attention to important aspects of the data, and; how aesthetically pleasing can data be presented.

3. Approach/methods, risks

Approach:

We plan to use a modified version of the prominent SDLC methodology and incorporate the best practices of modern DevOps (which is continuous integration and continuous delivery) to tackle this project. The phases of our approach are: Phase 1(Requirements Collection & Analysis); Phase 2 (Design); Phase 3 (Development): Continuous integration and Continuous delivery. Phase 4 (Final Presentation and report). We also plan on using data analysis and visualization tools: MS Excel and Microsoft Power Bi, respectively.

Risks:

Project Team Cohesion (Low Probability, High Impact). Risk Mitigation: The team needs to accommodate dynamic schedules and needs of its members. All team members shall participate in the documentation, development and completion of the project.

4. Tentative timeline (Cropped snapshot of our much larger project Gantt Chart)