PROJECT FOUR: MILESTONE 1 – COVER PAGE

Team Number: Tues-26

Please list full names and MacID's of all *present* Team Members

Full Name:	MacID:
Jackson Lippert	lippertj
Borna Sadeghi	sadegb1
Ahmed Mohamed	mohaa97
Andrew Krynski	krynskia

MILESTONE 1.1 – CLIENT NOTES

Team Number: Tues-26

You should have already completed this task individually prior to Design Studio/Lab for Week 7.

1. Copy-and-paste each team member's client notes on the following pages (1 team member per page)
   → Be sure to indicate each team member's Name and MacID

We are asking that you submit your work on both the team and individual worksheets. It does seem redundant, but there are valid reasons for this:

- Each team member needs to submit their client notes with the **Milestone One Individual Worksheets** document so that it can be ***graded***
- Compiling your individual work into this **Milestone One Team Worksheets** document allows you to readily access your team member's work
  - This will be especially helpful when completing the rest of the milestone

Team Number: Tues-26

Name: Jackson Lippert	MacID: lippertj

Copy-and-paste the notes from the introductory client visit for one team member in the space below.

- She likes to paint and do other types of multimedia art.
- Unpredictability for each day on how her body is feeling.
- Used to be a midwife.
- Does yoga.
- Does Jujitsu.
- Has children.
- Has lymphedema – weight bearing is difficult so solution should assist with that.
- Loves being independent, helping with that would be a great way to make her life easier.
- She spends many hours a day painting, so assisting with that would make her happier.
- Regular life tasks are difficult for her (chopping vegetables, doing dishes, etc.)
- Has spondylitis (type of arthritis) which makes gripping difficult.
- Has fibromyalgia, another contribution to her muscle and joint pain.
- Paints on an easel or on the ground.
- Has tried many solutions to ease her pain.
- Has been in a car crash.
- Has had breast cancer and survived, giving her a lot of pain in her pectoral muscles.
- Keeping her arm raised for extended periods of time is hard.
- Kneeling while painting is difficult.

The client has had many unfortunate events happen in her life, and she is a very resilient person for continuing to be independent and try her best every day. Her life story will be a driving force in our group's determination to find a solution that will ease any pain she may have.

Solutions she is looking for:

- Help her paint.
- Help her with menial tasks.
- Help with fine motor skills.
- Help with kneeling.
- Help with yoga.

Team Number: Tues-26

Name: Andrew Krynski	MacID: krynskia

Name: Alana

- Ex Midwife
    - Reproductive health
    - Activism
        - Improve the earth
        - Make item sustainable
- In car accident
- Developed breast cancer
- Started painting in 2017
    - Focuses on healing through work
- Spends time painting, imagining painting
- Trains in Brazilian jujitsu
- Sculpts
- Contributed to a group exhibition at an art hotel
    - Spent 8 months to complete
    - Can only work for short periods of time
- Prefers to work with smaller brushes for fine detail
- Lives with constant unpredictability
    - Looking for comfort in unpredictability
        - Access to things she loves
- Likes physical objects, not a fan of modern tech (tablets, smartphones)
- Looking for ease of painting when in pain
    - Must be lightweight
- Cancer survivor
    - Survived losing part of her body
- Paints mostly with acrylic

Team Number: Tues-26

Name: Borna Sadeghi	MacID: sadegb1

Copy-and-paste the notes from the introductory client visit for one team member in the space below.

- Passionately worked in reproductive health
- Lack of sleep developed autoimmune disorder
- Got in a car accident shortly after
- Diagnosed with breast cancer
- Loves painting, Brazilian jiu jitsu and yoga
- Unpredictability of living with multiple disabilities
- Could only work for short periods of time
- Struggle with holding smaller brushes and detail
- One of the most difficult parts is that she has to live with constant unpredictability as to what the next day will feel like
    - Comfort in unpredictability is helpful
    - Access to things she loves will bring her comfort
- Physical mediums for art
    - acrylic on canvas
- Spondyloarthritis affecting sacroiliac joints
    - Affects ability to sit or stand for long periods
    - lymphodema in arms and trunk from breast cancer surgery
- Wears compression sleeves
    - without them, yoga leaves flares for about a week sometimes
- Also has fibromyalgia
    - causes muscle pains, especially in her hands
- Holds one arm with the other sometimes to paint
- Sometimes paints on the floor to ease the weight
    - By putting painting on a stool and painting on her knees
    - Leans on the painting (ends up covered in paint)
        - Can change her height with different things as stools
- Specific area or muscle that experiences pain?
    - She doesn't feel tired, she feels it as fire (pain)
    - Hand muscle spasms (difficult to hold brushes)
    - Mainly hands and forearm
    - Struggle with weight bearing (arm, pec, forearm), these muscles get tired
- How long do you do yoga/painting/etc?
    - Depends on how her body feels in the day
    - Has to lower activity amount than what she wants to get done
        - Must regulate herself or else she will be in bed for the next few days if she does too much
    - Meditates to gain resilience
    - Creates yoga routines based on what her body tells her
- Has kids
- Painting became some way for her to communicate

- Has to hold the squeegee with her whole hand
- Holding brush like a pen is often challenging, changes to a "spear" grip (pencil in closed hand)
- Household tasks
    - Has needed to adapt to everything constantly
    - Biggest challenge at home is doing things require bending at the waist
    - Used a claw to pick up large items
    - Kids turn her equipment into toys (parenting can be difficult)
    - Leaves tools wherever she needs them (everywhere around the house)
    - Washing dishes and food prep is challenging for hands
    - Can't cut squash, must buy pre-cut squash
    - Uses blenders to process food sometimes
    - Overall, adapted to everything in a creative way whenever she could
- Reuses jars that are easy to open
- Can she count on any of her body to be predictable?
    - Nothing that is really *always* okay
- Has tried chiropractor, osteopath, physiotherapist, 3 occupational therapists, various medical medical specialists
    - They manage the critical components more
    - Tried many things, sacroiliac, arthritis gloves etc.
- Flare: baseline pain is much higher than usual
    - Feels like fire in the joints
- Things like painting and yoga give her more emotional stability
- Hopes to inspire her kids
- Website is called "In a power failure"
    - Felt like she was experiencing a power failure
        - One thing after another in her body "failing"
    - There is a lot of creative meaning and expression in her paintings

Team Number: Tues-26

Name: Ahmed Mohamed	MacID: mohaa97

Name: Alana

- *Used to be a Health Care provider as a midwife*
- *Was in a car accident*
- *Had breast cancer*
- *Started painting in 2017*
- *Does sculpture work*
- *Trains jujitsu for healing*
- *Took meditation and yoga training to instruct herself*
- *Longest art piece took her 8 months to complete*
- *Lives with constant unpredictability*
- *Paints for comfort*
- Prefers to paint with acrylics
- *Her favorite piece of art is hope cocoon*
- *She likes to use large canvases*
- Has spondylitis
- Has fibromyalgia
- *Has* lymphedema
- *Has children*
- *Forced to paint in different uncomfortable positions due to her physical conditions*

*If you are in a team of 5, please copy and paste the above on a new page.

MILESTONE 1.2 – INITIAL PROBLEM STATEMENT

Team Number: Tues-26

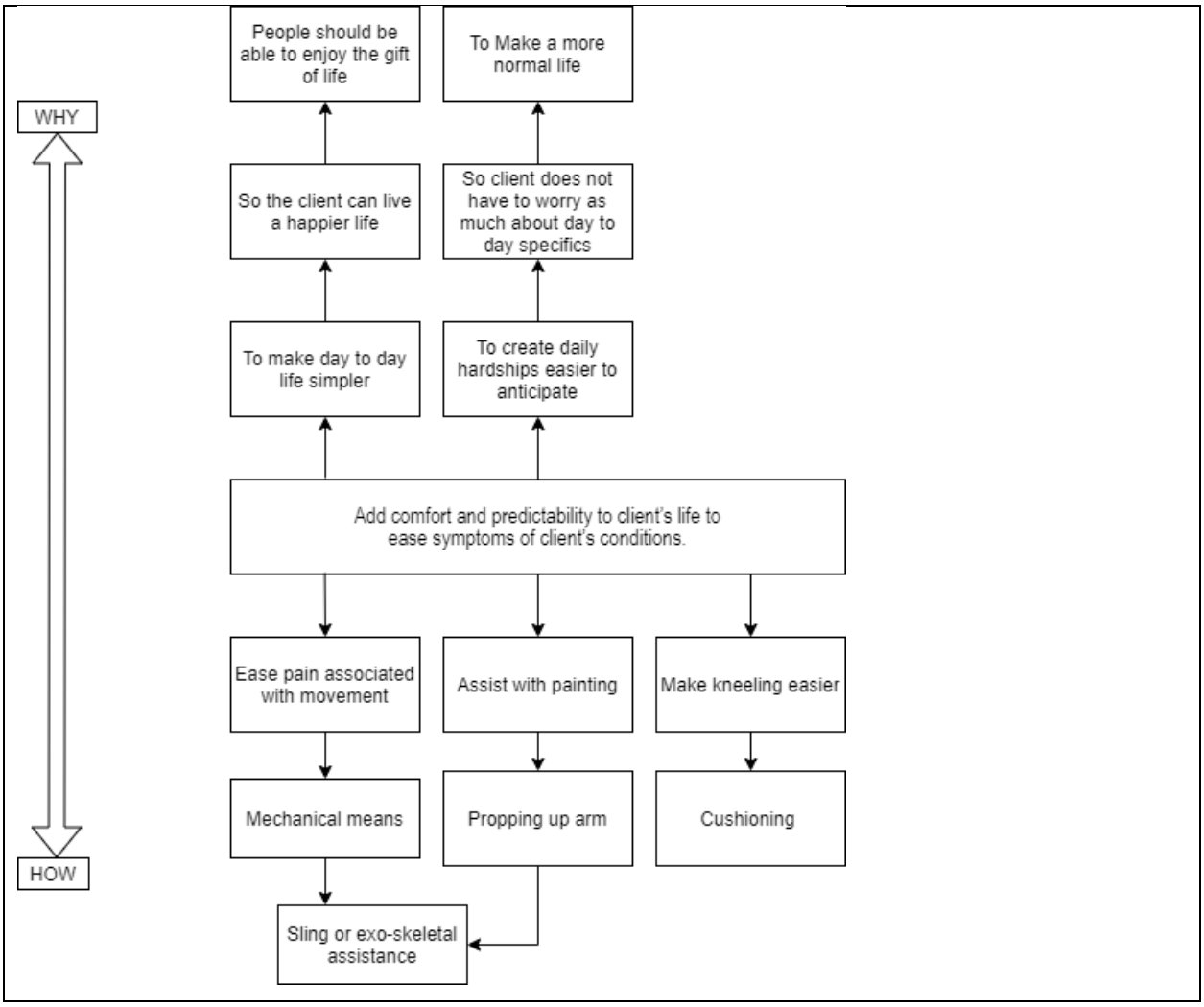
1. As a team, come up with an initial problem statement and include it in the space below.
   - → Make use of your client notes to define your primary function
   - → Remember to avoid solution-specific statements
     - Focus on what your design *should* do for the client in a general sense (not *how* to do it)

The client's life can be uncomfortable and unpredictable due to symptoms caused by various health challenges. These unpleasantries should be eased to improve the enjoyability and comfort of the client's life.

MILESTONE 1.3 – OBJECTIVE TREE, HOW/WHY LADDER, METRICS

Team Number: Tues-26

1. As a team, use an objective tree and/or How/Why ladder, to refine and guide the focus of the project.
   → If your team chooses to do both, copy and paste the blank box on a separate page
   → Your diagram(s) can be hand-drawn or done on a computer. Please make sure it's well organized and ***readable***.
2. If you need to see examples of each tool see "Review of Design Process" lecture – Wednesday, Feb 24th.



Justify your team's reasoning behind the choice of design tool(s):

- We chose to use a how-why ladder because it let us explore some ways that we may accomplish goals based on our problem statement. Also, it let us think more about the reasoning behind helping our client, which is important to find inspiration for possible design ideas.

1. What are your top three objectives (in no particular order)?

Ease pain associated with movement
Add predictability to day-to-day life
Make general tasks easier to accomplish

2. What is your rationale for selecting each of these objectives? Write maximum 100 words for each objective.

Objective 1: Ease pain associated with movement.

Rationale:

The client experiences pain due to movement, so easing that pain will benefit the client's life immensely. No person should have to go through pain purely due to movement, so taking some of that pain away will help with enjoyment in life. This idea is explored in our how-why ladder.

Objective 2: Ad .
Rationale:

The client expressed that they have a lot of unpredictability due to their conditions, so adding some sort of consistency and predictability to the client's life may make managing the symptoms easier.

Objective 3: Make general tasks easier to accomplish.
Rationale:

Client explained how quickly she experiences discomfort when remaining in the same position for medium to long periods of time, by adding a sort of comfort the client may be able to stay in one position for longer. This would make general tasks easier, therefore making the client's life better.

3. Fill out the table below with associated metrics (including units) for each objective.
   Remember: Metrics should be something you can actually test or measure as part of your process (e.g., calculate weight of a part by iProperties in CAD, test results of a physical prototype).

Objective:	Ease pain associated with movement
Unit/Metric:	Pain scale of 1-10

Objective:	Add predictability to day-to-day life
Unit/Metric:	Consistent ratio of planned: completed tasks

Objective:	Make general problematic tasks easier to accomplish.
Unit/Metric:	Average time to complete tasks, compared to before

MILESTONE 1.4 – PROJECT PLAN

Team Number: Tues-26

1. As a team, outline a project plan where you:
   - → Include a few sentences describing each team member's prior experience with physical and/or software prototyping
     - From previous projects in the course, or any other relevant experience
   - → Compile a list of potentially useful resources, materials, and/or tools for prototyping

   Reminders:

   - → The prototype can be either physical (e.g., cardboard and tape, 3D printed), digital (e.g., Inventor simulation or rendering), software (e.g., code for Raspberry Pi) or some combination of physical, digital and software
   - → Keep in mind that there are no ENG 1P13 physical prototyping resources available to you because we are learning online, which is why we are asking you to take inventory of how you might accomplish prototyping as a group
   - → As you think about how to prototype, remember that you will eventually need to validate your work somehow. Your validation approach will depend on what prototyping technique you use. Examples of validation approaches include (but are not limited to): hand calculation, physical test, software demonstration or simulation.

Member	Prior prototyping experience	Relevant skills
Jackson Lippert	1P13: P2 – Modelling sub-team. P3 – Computing sub-team. Box design for business feasibility. Computer science course (Highschool)	Coding in C++ and Python Inventor Hands-on work with carpentry
Andrew Krynski	- P2 Computing Sub team - P3 Modelling Sub team	- Python, C, C++, Java - Solid works, Fusion360, Inventor - Woodworking, machining, welding (MIG, stick) - Kali Linux - Arduino
Ahmed Mohamed	▪ Inventor ▪ Autodesk 3ds Max ▪ Surgical tools box design for a Design Project ▪ Adobe Illustrator	▪ Drawing ▪ Constructing models of large buildings ▪ Car's maintenance
Borna Sadeghi	• See bornasadeghi.github.io	Physical • Arduino • Raspberry Pi GPIO • 3D Printing Software • Server-side development • Game development • Machine Learning

Each member of our group will bring unique skillset which may be used in our project. Through discussion, we have decided that our design will be mostly (if not exclusively) mechanical in nature. This means that physical prototyping skills such as inventor, woodworking and machining will be very useful in creating a working prototype.