|  |  |
| --- | --- |
| Plant | Animal |
| * Easy growing/wilting animation * Harder to incorporate emotional expression * Less out of place/distracting | * Easier to incorporate emotional expression * Animals have pre-existing noises * May be distracting * Out of place on a desk |

|  |  |
| --- | --- |
| Inputs | Outputs |
| * Motion sensor * Camera * Touch sensor * Time adjusted sanction * Knob/dial to set time | * LEDs (RGB?) * Colour changing * Movement * Bluetooth compatibility? * Vibration/haptic feedback |

Questions:

**What is the project?**

A desktop assistance Enhancing Productivity. It has a plant-based and has the ability to “grow” or “wilt” in response to the user’s behaviour. It will use this to encourage the user to focus on their work for a pre-determined time.

**Who will use it/where/when?**

It will be used at a desk to help retain focus and continue working. It is meant to prevent distractions or encourage you to continue working if you get distracted. The user would start it up when they sit down, by setting the knob to the desired time frame.

**How will they use it?**

It will be placed next to the user's computer to accompany the user to study or work, and the user can use the knob to set the concentration time.

They may be used to help them focus on their work

**How will it work?**

The reward mechanism:

As users work, the plant gradually brightens (from root to tip) to symbolize their progress, fostering a sense of responsibility like caring for a living plant. Interruptions (such as leaving your desk) trigger gentle reminders through a pause in growth and a soft auditory cue.

It can light up or grow or expand or bloom while working

It has sensors in order to detect when you are working and when you stop

If you stop working for a while it starts to droop/wilt. Perhaps make a sad sound?

If you complete the allotted time, it could play a happy song and distribute food?

We start with a basic concept of focus, then improve:

Is a person there?

Are they moving?

Components/mechanisms:

* Processor, raspberry pi?
* Microphone
* Infrared camera
* Motion sensor
* LEDs
* LED/LCD screen
* E-ink screen?
* Actuators/servos
* Button knob
* Arduino
* Maybe a rechargeable battery?

Inputs

* Microphone
* Infrared camera
* Motion sensor
* Knob/Dials/Buttons
* AI face recognition

Outputs

* Screen (eink?)
* Bluetooth
* LEDs strips

Controllers

* Raspberry pi
* Maybe an Arduino as well

Movement

Air

* Peristaltic motor
* Tubes
* Molds (3D printed)
* Silicon for molds

Spine

* String/wire
* Motor/servos

Advice on paper:

Abstract is too long

First two paragraphs in the intro, summarise them into a strong sentence or two for abstract

"There are no focus tools with a tangible aspect, so we introduce etc..."

3rd paragraph is the right size for the abstract

Go straight into it

Think of the paper as a pyramid, at each step you deliver information

Moving from digital to physical

How the device works is good for the introduction, but could be shorter and more summarised for the abstract

Abstract will also need info from the study, what we did with the device, etc.

Related work:

Include lotus in the related work

We're filling a gap: there are digital apps, but they have these problems. Lotus exists and is tangible, but doesn't prioritise focus. Maybe a third option explaining why the tangible external aspect would be good.

Investigate other possible tangible benefits that exist.

Hiroshi Ishii

Subsection on purely digital related work, one on tangible work, then a bit pulling it together summarising how they don't work together well.

Some references about companionship as well

User study:

Questionnaire design

First is the questionnaire results

The final section may have a procedure section

People should be able to read and replicate what was done

Design process:

section about the core ideas of the project

present an overview first before going into the hardware/software

Start with a storyboard, how you use and interact with it

Go into if there was anything interesting about the iteration process?

Chronological is boring so start with the final interesting result, then explain the full process

Final study:

Demo day

Questionnaire design

Interview questions

Results

Discussion section:

Summary of what you've done and found

What limitations the work has, be transparent

What have we learnt that may enable further work

Questionnaire:

Age: number input instead of selection, maybe a drop-down menu?

5-part: maybe too wide, could get rid of undecided option? May not display well on older phones, and could be split between parts

Desk space: ask “how much do you have at your current workspace right now?”

Also use inches and centimetres for the desk space

How would you like to be notified? Use a 5-part preference scale instead of multiple choice for more quantitative data

Focus time: max and min time, if taking regular how much

Plans for the report:

The components section includes details about our designs and each component. Perhaps sketches/3d designs. We put this with the final part and explain what it is and how it works.

For the iterative approach, we can add details about how we refined and tested the design. Example, the prototypes, the paper flower(s), etc. Also started with an Arduino, thought about adding a raspberry pi, then realised we can do everything with the pi.

Software/Hardware: what was used to solve the problems and why

Evaluation:

Determines how well we achieved our goals, what have we contributed? Does it work to help focus?

Get interviews from people to determine the efficacy of the product. Can send off questionnaire online

Need to send questionnaires to people, also maybe compress the section a bit

Participants: mostly students

Study design: how we will gather the information

Questionnaire: what information we gather

Results: what people want/what would be a good idea

Interview: what questions will we ask? How well did the product work?

**Video**:

* **Clarity of innovation**
  + There could have been a mention of previous work, shows the product effectively.
* **Design and implementation**
  + There are a mix of diagrams and live demos along with verbal voice over explanations.
* **Potential impact**
  + I understand the purpose and the different ways users can interact with the device
* **Originality of delivery**
  + there is a consistent theme and tone of the video which is informative and well produced (but could have done with blurring study participants if video consent not obtained.)

Introduction – introduce the problem, maybe give an example of a previous product

Product – brief explanation of each part, with a video of them working

Video of it working – video showing the screen, person is in front so it works, person leaves and then it stops

What it could be used for – different ways it could help, picture/video of the environment

Instructables:

Need to show the process of construction

Show and list each piece of hardware

Show how we put them together

Lots of photos and videos

Can be done remotely.

Plans for the paper:

Send questionnaires out

Yiwen Liang—introduction, design process-components-flower, User study (before design), conclusion (after other parts done)

Navdeep –

* components
  + Plant spine
  + Leaves
* Iterative Approach
* Begin Instructables page

Lihan Shen– questionnaire, interview, evaluation

Zhiming Liu –

related work (Three application gaps and how we can solve them),

Software (screen control, motor control, detection)

Plant pots processes

More work on the intro and abstract, include results from the study

Can also show people videos and ask them questions

Add picture of final design on first page

If you can find more related work, add it

Move the iterative design process to the end

Put discussion in conclusion

Instructables

Study 2, can be made to include results from demo day, will ask anne about results

Ask people the post-study questionnaire questions and interview questions

Formatting

Video

Yiwen Liang

* Abstract and introduction
* Instruction of flower
* Conclusion

Lihan Shen

* Results from second study with new data
* Make second questionnaire

Zhiming Liu

* Related work
* Plant pot, Software, Final Running in Instructables
* Video transition

Navdeep Bhamrah Harley

* Messaging anne, check page limit
* Leaf in instructables
* Formatting, move iterative design section
* Video, merge videos and text

TODO:

Video audio – Navdeep Bhamrah Harley

Instructables final part – Zhiming liu

Document formatting, link github and video