

## **Week 2 – Smart doormat**

One problem that many people have around the house is that if they wear the same shoes that are worn outside then there is a high likelihood of treading dirt into the carpets. This can often be a problem as people don't tend to check their shoes before they enter a house or often forget and it can be very difficult to remove any stains, sometimes costing a lot of money if the carpet needs to be professionally cleaned or replaced. Sometimes people will insist on taking their shoes off for this reason although this is also very inconvenient.

A solution to this that I would propose would be a smart door mat. This could sit by the door and when users rub their feet as they enter the building it can read how dirty or clean their shoes are and then give them a score and tell them whether or not they need to remove their shoes before entering. They can be alerted to the cleanliness of their shoes by a simple lighting system which can light up green if they are safe to enter with their shoes on or red if they should remove their shoes first. The system could also track an average of how clean shoes are when the user comes into the house and also if they choose to listen to or ignore the door mat as in some situations as this can give an idea of how clean the house is. The reason behind this might be that if the mat is in use in a farm house the user might not expect as high a level of cleanliness as someone living in a modern flat. This evaluation could also be decided by the type of mat that is brought as we could sell a range of mats with more modern, cleaner mats being used in cleaner homes and having a higher level of scrutiny whilst older, more rustic mats might have a lower level.

Other elements for this idea could include an app or display that can track the shoes of people and give them a score on how clean their shoes are turning it into more of a competition. This would encourage people to keep their shoes clean and think more about this whilst they are out and about. If the project had a higher budget or the user was willing to spend a bit more on the mat we could also include nano technology that would clean the shoes if they are left on the mat or this could be done by placing the shoes in a specialist shoe rack next to the mat.

We could also think about expanding into other areas such as reading the user's weight when they stand on a mat. This would be handy if someone wanted to go out for a run as they could register this on the app and then over the course of the month they will see how much weight they have lost due to running which might help to encourage them to run a bit further or work a bit harder.