EASY SANITARY PADS VENDING MACHINE AND APPLICATON DEVELOPMENT

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ABSTRACT:

Today's most challenging and development issue was menstrual hygiene. The women and girls often lack of access to hygenic sanitary materials and basic facilities. During menstruation women has to regularly change sanitary napkin in every 3-4 hours. Thus, easy availability of napkin is necessary. The issue of menstrual hygiene is inadequately acknowledged attention. The project aimed at breaking menstrual taboos millions of girls every day. Uses of napkins are necessity but disposal of it is mandatory. The solution of both of this problem is installing automatic sanitary napkin vending and disposal machine. Our first aim is to provide an easy way of availability of sanitary napkin to women's during the time of menstruation in normal and emergency conditionUses of napkins are necessity but disposal of it is mandatory. The solution of both of this problem is installing automatic sanitary napkin vending and disposing in proper way .so we give them a proper disposal cover with our sanitary pads. The machines can be transportable. In vending machine, the person can refill napkins when stoke is out. Disposal machine is eco-friendly.

1. INTRODUCTION:

Social status with health in equalities plays important role to serve the country. According to world health organization, worst health of people is due to lower social economics. Therefore, the solution on this problem is necessary. A recent report shows that 88% of menstruating women in India are filled with reproductive problems because of their lack of access

to sanitary products. About 23% of women drop out of schools and colleges after they menstruate.

Sanitary pad is an absorbent item worn by women in their underwear when menstruating, bleeding after giving birth, recovering from gynaecologic surgery, experiencing a miscarriage or abortion, or in any other situation where it is necessary to absorb a flow of blood from the vagina. A menstrual pad is a type of menstrual hygiene product that is worn externally. Pads are generally changed by being stripped off the pants and panties, taking out the old pad, sticking the new one on the inside of the panties and pulling them back on. Pads are recommended to be changed every 3–4 hours to avoid certain bacteria that can fester in blood, this time also may differ depending on the kind worn, flow, and the time it is worn. Menstrual pads are made from a range of materials, differing depending on style, country of origin, and brand. This project inspires to create connections across several disciplines instead of learning topics in isolation because it combines mechanical, electronic, electrical and programming skills. It's introduced for rural areas, It builds towards the attention of the society, It brings out innovation and creativity, It enhances problem solving skills.

2. LITERATURE REVIEW:

2.1. Study on Automatic sanitary Pad vending machine

Sanitary Napkin Vending machine is an essential technology product that should become norm at all commercial and public places. Automatic Sanitary Napkin dispenser allows women to avail sanitary pads at their disposal without any human contact whatsoever.

2.2 Studies on UX Design

User experience design is a vast, multidisciplinary and fascinating field. It shapes the products and services we use on a daily basis, and can make or break the success of a business or brand. User experience (UX) design is the process design teams use to create products that provide meaningful and relevant experiences to users. This involves the design of the entire process of acquiring and integrating the product, including aspects of branding, design, usability and function.

2.3 Exisiting Study on Card reader

A card reader is a device that can decode the information contained in a credit or debit card's magnetic strip or microchip. This information is contained either in the magnetic strip of the card, or in the microchip embedded in chip-enabled cards.

2.4 Disposal cover and eco friendly

Sanitary Napkin Disposal biodegradable bags from recycled newspaper for the purpose of disposing used sanitary napkins. All bags are made by underprivileged women, and a portion of the revenue is set aside to provide free sanitary napkins to the ladies who have little or no access to them.

2.5 Studies on Adobe XD

Adobe XD (also known as Adobe Experience Design[1]) is a vector-based user experience design tool for web apps and mobile apps, developed and published by Adobe Inc. It is available for macOS and Windows, although there are versions for iOS and Android to help preview the result of work directly on mobile devices. Adobe XD enables website wireframing and creating click-through prototypes.

2.6 Studies on Figma Tool

Figma is a vector graphics editor and prototyping tool which is primarily web-based, with additional offline features enabled by desktop applications for macOS and Windows. The Figma mobile app for Android and iOS allow viewing and interacting with Figma prototypes in real-time mobile devices. The feature set of Figma focuses on use in user interface and user

experience design, with an emphasis on real-time collaboration

3. METHODOLOGY:

This work is based on the sanitary pad machine where it is placed all over the public places and streets where the females especially traveling from one place to another and who can't afford it for higher cost, they can buy for free using "access card" will be provided with the access card To the Particular person can take 5 pads for month napkins per person for a month. This process will be used with the help of using sanitary pad vending machine

We also have an EASY PADS APPLICATION to know where is our sanitary pad machine placed and quantity of pads filled in the machine.

- Nowadays sanitary pads are given in some hospitals around the city and rural areas and people are not so aware of it. so, our sanitary EASY PADS MACHINE where it is placed all over the public places like: market, main streets, nearby college, bus stop, local rural areas and much more public place.

- Many school, college girls and women's are travelling for their education and work for long distance, so many suffer in heavy bleed sometimes on their menstrual time. So, our easy pad machine kept all over the public places so that they can afford it easily in minutes without going to market and waiting in queues.

- As today generation are been attending their puberty in early age so they feel discomfort to go places on their menstruating time and by in super markets, hyper markets only for buy the sanitary pads. If we keep sanitary pad machine outside in their areas or any public place they just go and get it easily in minutes.

- This Machine mainly used with the help of Program of vending machine, where it detects the access card and that particular female person can take upto 5 pads per month on their menstrual cycle and the pads are neatly packed with disposal cover attached with it.

- We also include a mobile application app to detect nearby EASY PADS MACHINE and to know the stock which in the EASY PADS MACHINE, so that they can go stock availability place.

- We are also creating awareness to the common people that sanitary pads are common which is used by all women's where we see day to day life. It can be bought frtodays youngsters we want to change the trend and make eely and easily without wrapping with paper or in black plastic cover As we are the awareness to all the men to buy the sanitary pads easily without any hesitation to their loved ones.
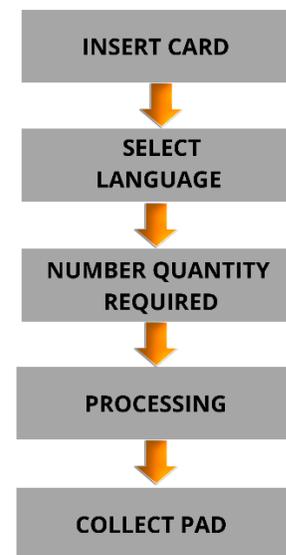
INSERT CARD

SELECT LANGUAGE

NUMBER QUANTITY REQUIRED

PROCESSING

COLLECT PAD

Figure-1: Flow chart of vending machine

Figure-2: Basic structural diagram of easy sanitary pad vending machine

APP DESIGN:

https://www.figma.com/proto/ywgjwPFGUdwWBgl byIJjb3/Easy-pads?page-id=0%3A1&node-id=14%3A14&starting-point-node-id=14%3A14&scaling=scale-down&show-proto-sidebar=1

SURVEY URL

https://docs.google.com/spreadsheets/d/1s5Wm46x P1y8qArtRz_Q8VvVaKZ99l-z5ZWFxlmXnCmQ/edit?resourcekey#gid=2465010 95
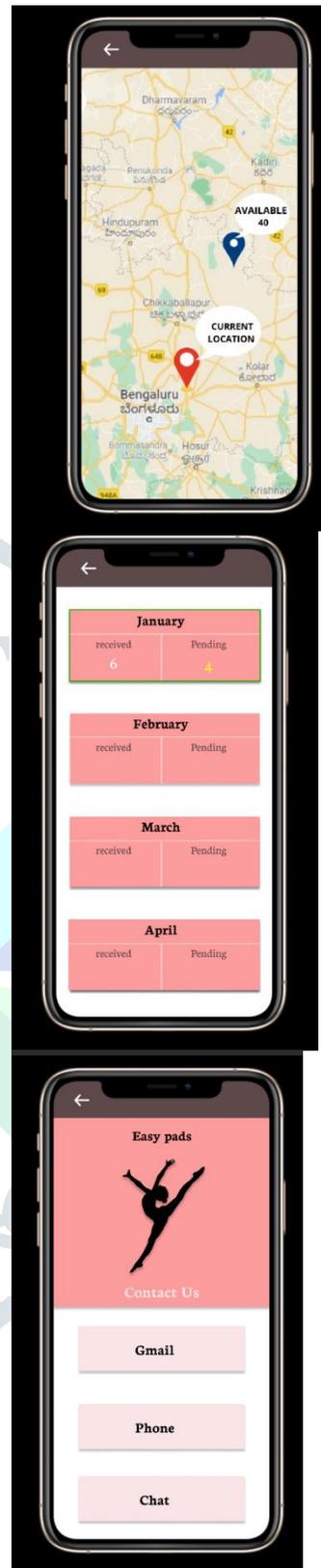
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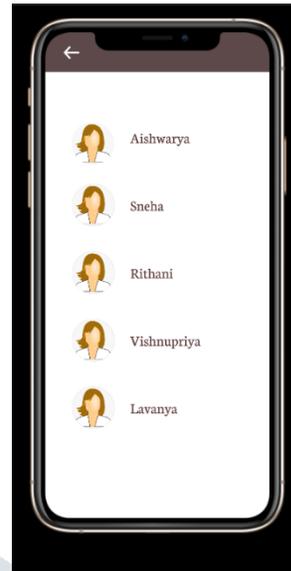

FUTURE SCOPE:

- To promote and run along a hygienic movement towards women in the society.

- Sanitary vending machine should be installed in every need and all accessible places.

- In Future OTP process will be emplimated in the Sanitary pad vending machine for the users who are coming from outside the states perhaps international users who doesn't have the access card, Where the OTP is sent to the given number by the user and they can take number of pads Needed to the particular user.

- Disposal machine of the sanitary pads also emlimated beside the vending machine where it makes the pads and disposal covers into fine ashes in the eco-friendly manner.

Solar Power can also be emilmatted in the sanitary pad vending machine to reduce the current and to save the electricity

4. RESULTS AND DISCUSSIONS:

HIFI-PROTOTYPE

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5. HARDWARE AND SOFTWARE REQUIRMENT:

HARDWARE:

i) **Mild steel box:**

The Mild Steel Box Section, or square tube, features a square hollow section suited to a wide range of different industry uses including the construction of lightweight frames, structural projects, security uses, fabrication and transport. Available in the A & B lengths, thickness and the quantity of your choice. Simply use our price calculator to input your dimensions to receive a free and instant quote. Our mild steel box section will be delivered pre-cut to your required dimensions.

ii) **MS sheet holding spring and napkins:**

The drawer is used to allow dispensed product to be reach by the user. After the product drops down the drawer will open automatically allowing the user to get the product.

iii) **RFID Reader:**

Radio Frequency Identification reader (RFID Reader) is a device used to gather information from an RFID tag which is used to track individual object. This is

used to detect the RFID card. When the user requires sanitary napkin, user will scratch the RFID card, the reader detects the card to vend napkin.

iv) Sanitary Napkins:

 Sanitary pads are women's best companions that help them stay assured and comfortable during their monthly cycle. Gone are the days of filthy cloth pads that had serious detrimental effects such as rashes, urinary or vaginal infections. Taking care of menstrual hygiene is crucial to avoid such medical consequences. Menstrual pads are usually made of soft and skin-friendly materials that absorb fluid keeping your skin dry. They have made women's life much easier on those special days. Sanitary napkins come in different shapes, sizes, and absorption capacities. Napkins with additional features such as ultra-thin, ultra-long, with or without wings, fragrant napkins, antibacterial materials, overnight protection, biodegradable pads, etc., give you various options. You can choose a sanitary pad that meets your requirements, depending on the level of protection you need.

v) Mechanical spring:

Mechanical spring which is used to push the pads in the 1 by 1order after the confirmation of the numbers of pads needed by the user.

vi) Microcontroller:

A microcontroller is a compact integrated circuit designed to govern a specific operation in an embedded system. A typical microcontroller includes a processor, memory and input/output (I/O) peripherals on a single chip

vii) Power supply:

Vending machines typically run on 115 volts at 10-12 amps, so a regular three-prong electrical outlet is needed. It is a fire hazard to power a vending machine

using an extension cord, and operators will not place equipment.

viii)   Disposal cover:

Sanitary Napkin Disposal Bags are eco-friendly and are used to dispose off soiled sanitary napkins. The two-fold construction ensures the content is secure within and provides waste-pickers some relief.which is placed in the ride side bottom of the vending machine

ix) Access card:

Whenever you use the Access card in the EASY SANITARY VENDING MACHINE it shows the user information, the amount of pad taken and left in there account and other information of the user.

x) Keypad:

This allows users to input the information they need to give to EASY PAD VENDING MACHINE how much pads they needed.

xi) Led screen

Like any computer, this allows users to see each step of the process for the users in the EASY SANITARY VENDING MACHINE.

xii) Sanitary pad take away point:

Which allows the user to collect the pads easily which is placed in the bottom left of the machine

xiii) Sanitary pad dispensary:

Stores the pads in large quantity and which is also use to refill from the company side

SOFTWARE

i)   **Easy pads application**

ii)   **Google maps**

6. CONCLUSION:

Our main motto is to change the trend of buying the sanitary pads easily comfortably without wrapping any papers or in black covers This system concludes that Installation of the **EASY PADS** vending machine provides the easy accessibility of pads during the time of emergencies people who travel from one place to another and mainly considered to rural Area. It also reduces the embarrassing situations that a women can face while purchasing. This work is of less efficiency and low cost compared to the previous methods. Using this work automatic vending of napkins can be done. The previous work requires man mechanism which was eliminated. And by easy access of pads the hazardous diseases like toxic shock syndrome (TSS) and uterus cancer can be prevented. This real time work represents a solution for easy accessibility for the pads. In future this project can be implemented by adding extra features. The disposer too can be fabricated and integrated with the vending machine, so that dispensing and disposing can be achieved in a single unit, this can help to keep environment clean. This will be very useful to the government to undertake our project for women welfare.

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