CUFE

RETAIL STORE SYSTEM

Created by:

Ahmed Mohamed El-Refaie

Abdelrahman Hany   Presented to

Omar Mohamed ElSawy   Dr.Ahmed Ali   Eng.Aya hany

Basic Eng. Design

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MAIN PROBLEM

In Egypt one of the most populated cities in the world and in the eastern region there is a huge demand on grocery and retail stores, in which millions of people buy and sell products daily .

After a market research we have concluded that retail stores teller systems are :
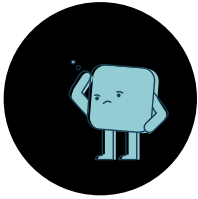
PROJECT AIM

Our main goal is to Create :

- **Simple**
- **Cheap to Buy and Use**
- **User Friendly**

System that will be able to organize and keep record of all the retail store transactions and also play a main role in marketing and advertisation

RETAIL STORES PROBLEMS

Problem- *No. 01*

Incredibly complicated (requires a professional)

Problem- *No. 02*

Requires weakly updates to fix bugs and issues

Problem- *No. 03*

Very expensive to purchase

Problem- *No. 04*

Requires expensive hardware to run on

Problem- *No. 05*

Doesn't have much features

Problem- *No. 06*

Doesn't collect enough data

Problem- *No. 07*

Can't reach to customers

Problem- *No. 08*

Not connected to the internet

DATA GATHERING AND ANALYSIS

Statistics carried on Jun 27, 2019 Calculating Countries Retail store Economical size
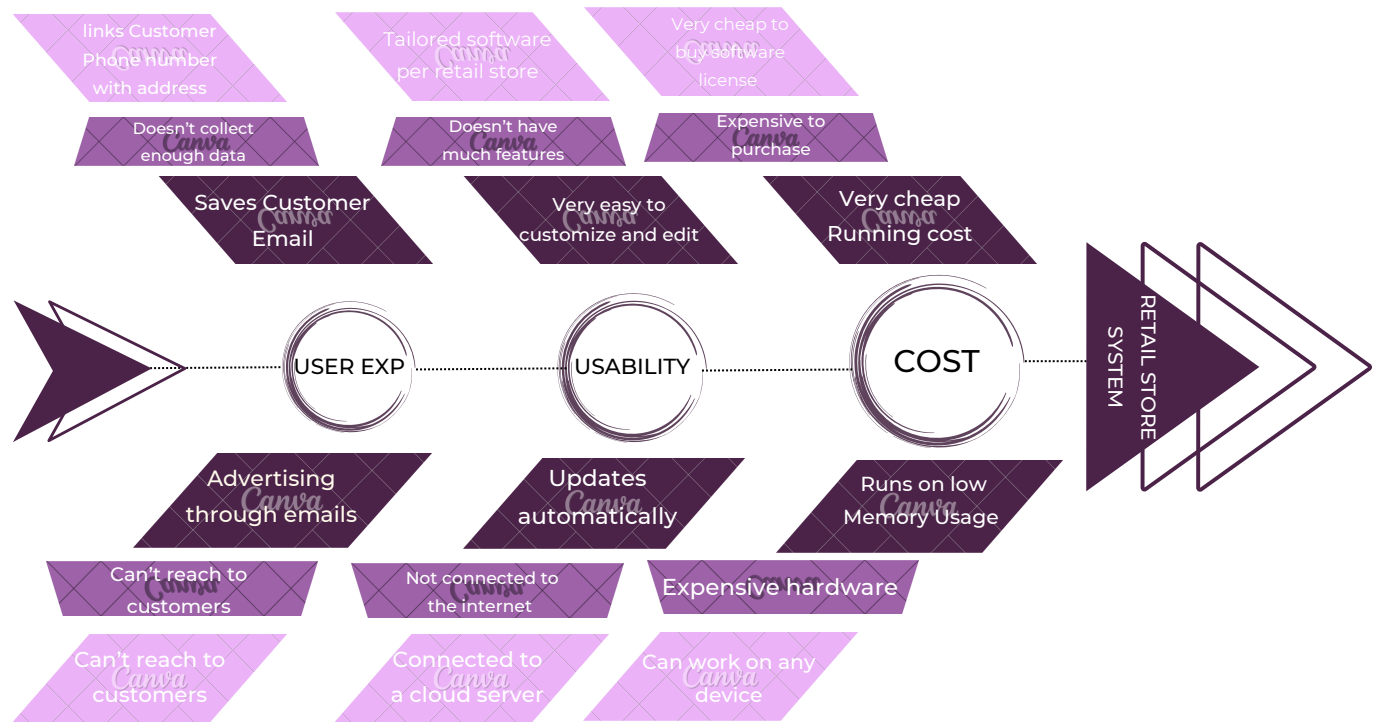
2021 rank	Country	Population (million)	GDP PPP per capita (US$)	National retail sales (US$ billion)	Market attractiveness	Country risk	Market saturation	Time pressure	Final 2021 score	Rank vs. 2019
1	China	1,402	17,192	4,072	100.0	88.4	13.1	100.0	72.8	0
2	India	1,400	6,461	1,163	59.1	50.7	63.7	82.7	64.4	0
3	Malaysia	33	27,402	112	74.5	74.0	27.2	43.9	54.1	0
4	Indonesia	272	12,222	407	51.3	30.7	57.6	60.7	53.0	+1
5	Bangladesh	170	5,307	171	15.7	2.4	96.0	88.4	53.0	New
6	Morocco	36	7,620	46	31.5	92.6	66.5	51.8	52.2	+6
7	Egypt	101	12,790	200	34.3	20.5	71.5	73.8	52.0	+19
8	Ghana	31	5,693	24	13.5	70.2	96.5	52.7	51.9	−4
9	Vietnam	96	10,869	125	27.8	42.2	56.0	98.4	51.8	+2

Modern retail channels, such as supermarkets, hypermarkets and convenience stores, have a combined 3,913 outlets and represent around 26% of total sales

Traditional grocery retailers have 113,724 and represent 74% of total sales. Small traditional grocers remain the dominant retail outlet in egypt

According to kearney, egypt's retail market is estimated at around $200 billion in 2020 with expectations for growth at around a cagr of 5% from 2020 to 2025 to reach $254 billion

FISHBONE DIAGRAM

links Customer Phone number with address

Tailored software per retail store

Very cheap to buy software license

Doesn't collect enough data

Doesn't have much features

Expensive to purchase

Saves Customer Email

Very easy to customize and edit

Very cheap Running cost

USER EXP

USABILITY

COST

RETAIL STORE SYSTEM

Advertising through emails

Updates automatically

Runs on low Memory Usage

Can't reach to customers

Not connected to the internet

Expensive hardware

Can't reach to customers

Connected to a cloud server

Can work on any device

Fishbone diagram demonstrating all the issues and problems that is using the Customer regarding; Cost , Usability and user experience

TESTING AND PROTOTYPING

Login Page

Every system must have a login page to provide security for the system and privacy for the owner and the system user
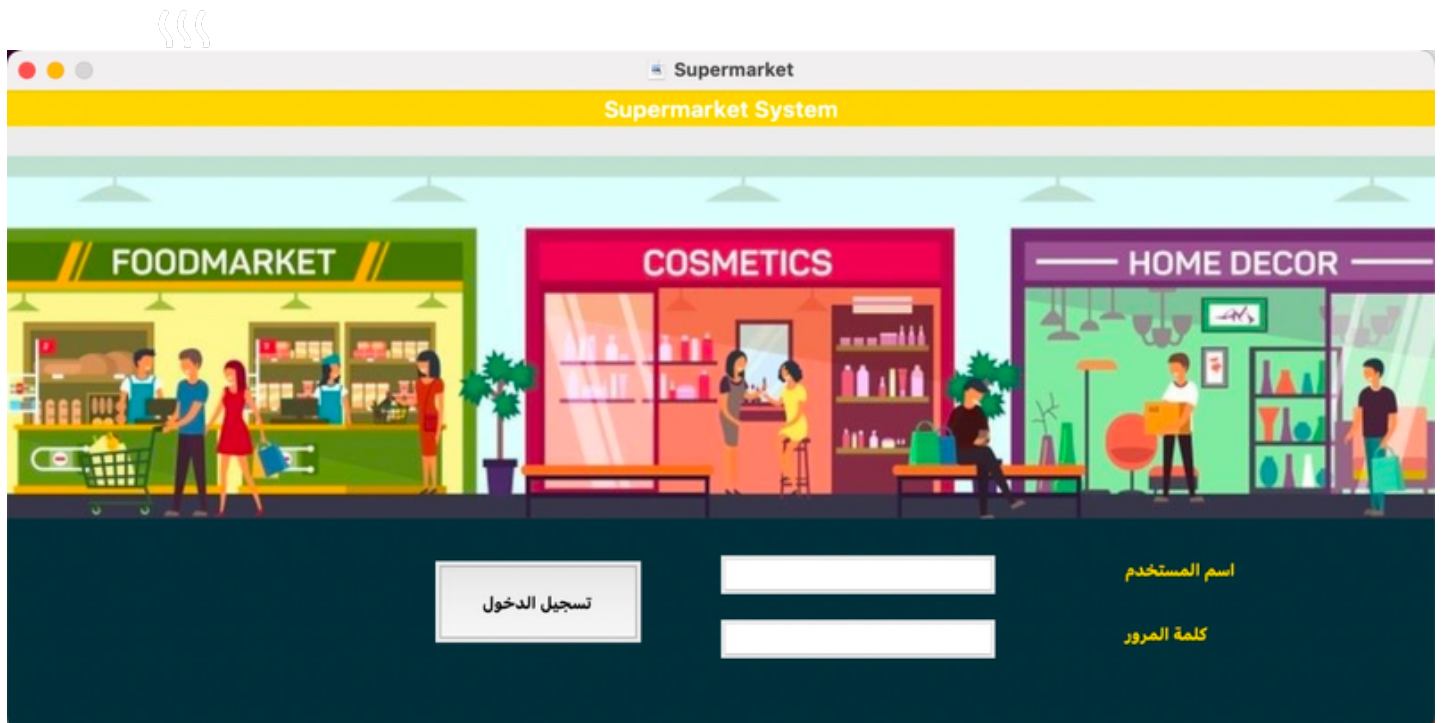
TESTING AND PROTOTYPING

Program Interface

The system is made to be dynamic to be adapted to all kinds of businesses and retail shops it can be automatically adapted to fit the customer not be custom-made for every customer to save the cost of development every time per customer

TESTING AND PROTOTYPING

E-mail Recipt

After the customer finishes the order the receipt of the whole selected items will be sent to the customer via email to meet to reduce the loss of papers of the receipt and this also provides the customer with more confidence that he will always be able to reach the receipt if the customer needed to

Supermarket says Hello!

==

B.Num: 3277

NAME: Omar Elsawy

PHONE: 01095305177

ADRESS: CUFE

EMAIL: omar.future.123@gmail.com

==

Items   Number   Price

==

Borkhl 5 50

Feryq 4 20

Termas7elw 3 45

Termas 3 15

Lobya 1 5

Admamy 5 25

Fork 2 10

Spoon 3 30

Bottle Opner 2 20

Basket 8 160

3lba 9 180

Cutting Plate 4 40

Hfaar 1 30

Fridge 6 120000

Slat 5 5000

Fan 8 3200

Air Conditioner 2 2000

TESTING AND PROTOTYPING

Control Page

The Program includes a control page to manage the availability of the items in the store, manage the prices of items in the store, check the availability of items, and send an alert email if the item amount reaches the minimum limit that the user registered before.
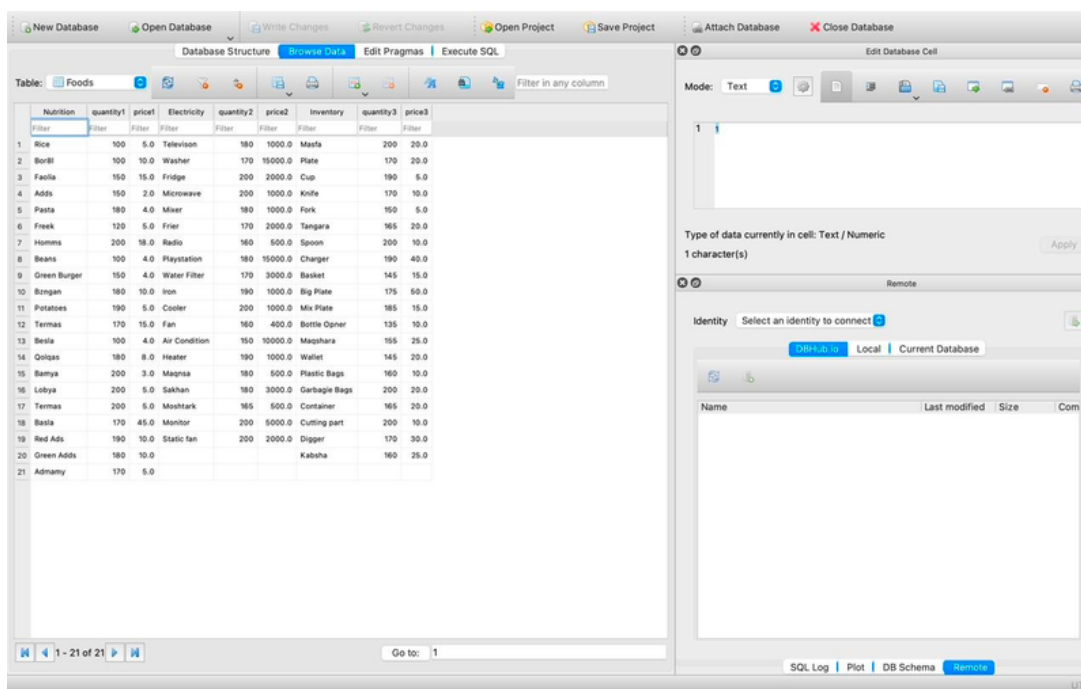
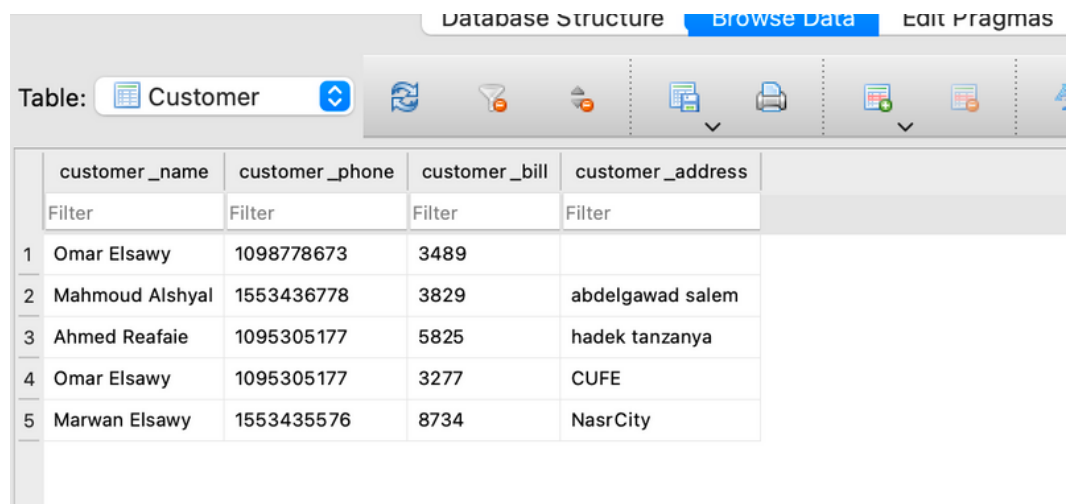| الادوات الكهربائية	الكمية	السعر	الاغذية	الكمية	السعر	للوازم المنزلية
تلفزيون	180	1000.0	الرز	100	5.0	مصفاة
غسالة	170	15000.0	البرغل	100	10.0	صحن
ثلاجة	200	2000.0	فاسوليا	150	15.0	كأس
مكرويف	200	1000.0	عدس	150	2.0	سكين
خلاط	180	1000.0	معكرونة	180	4.0	شوك
مقلاة كهربائية	170	2000.0	فريكة	120	5.0	طنجرة
راديو	160	500.0	حمص	200	18.0	ملعقة
بلاي ستيشن	180	15000.0	فول	100	4.0	شاحن
فلتر ماء	170	3000.0	طعمية	150	4.0	سلة
مكواة	190	1000.0	بذنجان	180	10.0	صينية
مبرد	200	1000.0	بطاطس	190	5.0	وعاء الخلط
مروحة ارضية	160	400.0	ترمس حلو	170	15.0	فتاحة العلب
تكييف	150	10000.0	بسلة	100	4.0	مقشرة
فرن غاز	190	1000.0	قلقاس	180	8.0	محفظة
مكنسة	180	500.0	بميا	200	3.0	اكياس
سخان	180	3000.0	الترمس	200	5.0	سلة قمامة
مشترك كهربائي	165	500.0	اللوبيا	200	5.0	اكواب
شاشة كمبيوتر	200	5000.0	البازلاء	170	45.0	علب
مروحة سقف	200	2000.0	عدس احمر	190	10.0	لوحة التقطيع

Supermarket — ادارة المخزون

TESTING AND PROTOTYPING

Database Page

There is a database linked with the program. The first one is related to the customer, it saves his (Name, Phone, Address, and E-mail) to make the retail shop able to store their customers' data to provide them with discounts, promotions, and also in digital marketing campaigns. The second database is used to store the number of items and prices and sends alert emails to inform the user about the missing items or items that are out of stock.

TESTING AND PROTOTYPING

Customer Interface app

The app includes a page that the customer can use and react to be able to know the total of the items selected and a feature that will be added that the selected items will be sent to the cashier man directly to provide more time and effort saving.

TESTING AND PROTOTYPING

Coding

The Program includes many features so the program required many lines of code and functions such as:

- Mailing Function
- Database Functions
- Calculating Functions
- Converting File Functions (text to pdf)

The Program Contains More than 1500 lines of code

```python
def Database_Add():
    textarea.config(state=NORMAL)
    try:
        EntFatora.config(state=NORMAL)
        cr.execute(f"insert into Customer(customer_name,customer_phone,customer_bill,customer_address) values('{EntName.get()}','{EntPhone.get()}'
        db.commit()
        messagebox.showinfo('ADDED', 'Customer Info Added')
        EntFatora.config(state=DISABLED)
    except sqlite3.OperationalError:
        print(sqlite3.OperationalError)
    textarea.config(state=DISABLED)
def Database_Search():
    EntFatora.config(state=NORMAL)
    cr.execute("select customer_name from Customer")
    cr.execute("select customer_phone from Customer")
    cr.execute("select customer_bill from Customer")
    cr.execute(f"select * from Customer where customer_name = '{EntName.get()}' and customer_phone = ('{EntPhone.get()}')")
    results = cr.fetchone()
    print(results)
    if results != None:
        messagebox.showinfo('Found',f'{results}')
    else:
        messagebox.showerror("Not Found", "Customer Not Found")
    EntFatora.config(state=DISABLED)
```

```python
def remove_non_ascii(input_file):
    with open(input_file, 'r') as f:
        lines = f.readlines()
        for i in range(len(lines)):
            lines[i] = ''.join(filter(lambda x: ord(x) < 128, lines[i]))
    return lines

def convert_to_pdf(input_file, output_file):
    pdf = FPDF()
    pdf.add_page()
    pdf.set_font("Arial", size=12)
    lines = remove_non_ascii(input_file)
    for line in lines:
        pdf.cell(200, 10, txt=line, ln=1)
    pdf.output(output_file)
```

```python
# Email credentials and settings
def sendEmail(to_email):
    # from bettersuper import customermail
    # to_email = 'omar.future.123@gmail.com'
    from_email = 'omarelsawy160@gmail.com'
    subject = 'PDF Attachment Test'
    smtp_server = 'smtp.example.com'
    smtp_port = 587


    from pdf import convert_to_pdf


    # Create a new email message with the PDF file as an attachment
    message = MIMEMultipart()
    message['To'] = to_email
    message['From'] = from_email
    message['Subject'] = subject
    convert_to_pdf("Fatora.txt","fatora.pdf")
    with open('fatora.pdf', 'rb') as pdf_file:
        attachment = MIMEApplication(pdf_file.read(), _subtype='pdf')
        attachment.add_header('Content-Disposition', 'attachment', filename='Supermarket Recipet.pdf')
    message.attach(attachment)
    smtp_obj = smtplib.SMTP('smtp.gmail.com', 587)
    smtp_obj.ehlo()
    smtp_obj.starttls()
    smtp_obj.login('omarelsawy160@@gmail.com', 'qxnsyaxbqeatgtxs')
    smtp_obj.sendmail(from_email, to_email, message.as_string())
    smtp_obj.quit()
```

COST ANALYSIS

Programs	Our program	Other competitors
Development costs	After using alternatives that costs less and making our software sold to many Customers it will costs 350$	Under Normal Circumstances the cost will be 1800$
Marketing cost	It will cost ads and digital marketing to make Customers aware of the product AVG (50$)	It will cost ads and digital markting costs 300$
Annual Support	The annual support will be for free for this first 5 months and then will cost 25$ per month	It costs under normal condition between 200$ - 400$
Total Price	350$ + 50$ + 25$	1800$ + 300$ + 300$
	425$	2400$

Development cost

It costs us $30 per hour

It costs in default in ranges between $75 - $150

Database costs

Setting up data base and tables $250 and ongoing maintenance $50 per month

Setting up data base and tables $500 and ongoing maintenance $150 per month

Email integration and Digital recite generation

Email hosting cost's $25 per month and PDF generating cost $100

Setting up email and API information costs $100 - $500

Desision matrix

Factors	Weight	Mechanical lamp	Food dryer	Retail program	Smart plug
Influence on people	20	6	10	8	9
cost	20	1	1	10	6
applicability	20	1	1	10	8
materials	20	1	1	10	1
Time	20	1	1	5	2

Idea	Score
Mechanical lamp	200
Food dryer	200
Retail program	860
Smart plug	520

💡Retail program has the highest score which indicates that it was the ideas we are working on

OBJECTIVES PYRAMIDS

Finishing the project on time

Ready prototype

Ready report & Presentation

Prototype assembly

Testing Prototype

Clear members' roles

Polished & Presentation

Brainstorming and Planning

Materials & Building

Data gathering and Researching

Write report & Presentation

Having a clear goal or object is a very cruisal part in any project or process in which every task is done according to its periority and it also helps acheiving the maximaum from the task
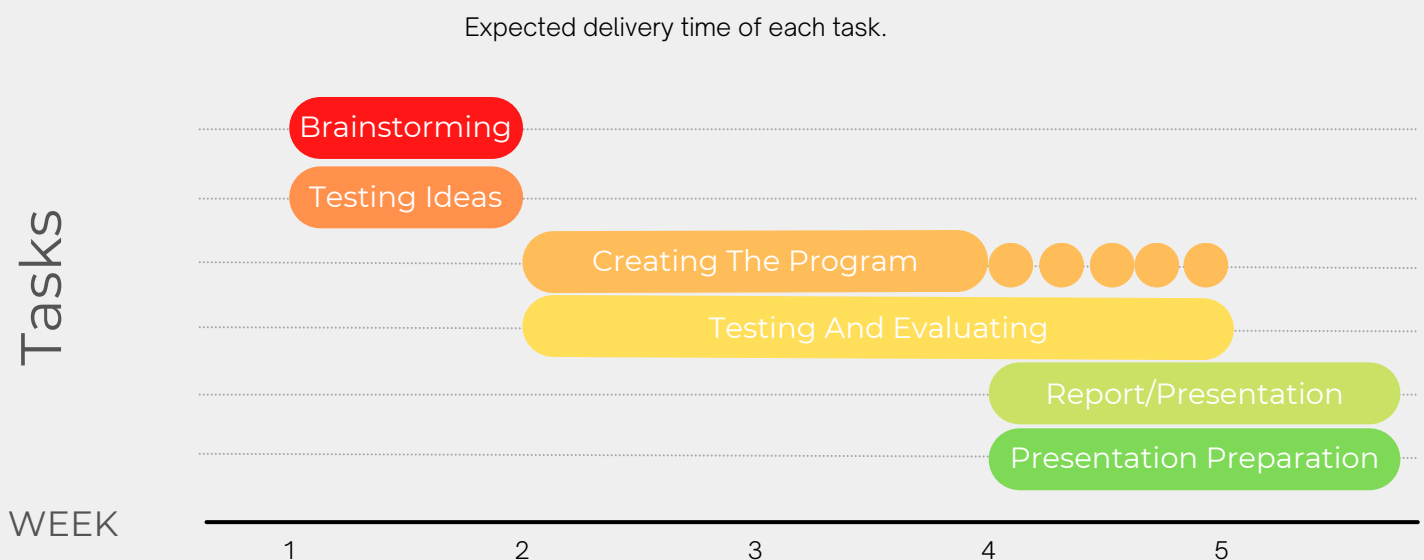
TASK AND RESPONSIBILITIES

TASKS	OMAR EL SAWY	AHMED EL-REFAIE	ABD EL-RAHMAN HANY
DATA GATHERING	C	K	C
CODE AND SCRIPTS	K	M	M
TESTING AND PROTOTYPING	K	C	M
REPORT WRITING	M	K	K
PRESENTATION EDITING	M	C	K

K = Key responsible

C = Co responsible

M = Team member

GANTT CHART (TIME SCHEDULE)

Expected delivery time of each task.

A Gantt chart is a type of bar chart that illustrates a project schedule.This chart lists the tasks to be performed on the vertical axis, and time intervals on the horizontal axis.The width of the horizontal bars in the graph shows the duration of each activity.Gantt charts illustrate the start and finish dates of the terminal elements and summary elements of a project. Terminal elements and summary elements constitute the work breakdown structure of the project. Modern Gantt charts also show the dependency (i.e., precedence network) relationships between activities. Gantt charts can be used to show current schedule status using percent-complete shadings and a vertical "TODAY" line.

Gantt charts are sometimes equated with bar charts.

Gantt charts are usually created initially using an early start time approach, where each task is scheduled to start immediately when its prerequisites are complete. This method maximizes the float time available for all tasks.

CONCLUSION

The project aims to change peoples perspective about expensive complicated systems and make more poeple have more interactions with advanced technologies

We have created a simple user freindly system

An enviromental friendly system

The main feature for the systme is it is extreamily reachable to everyone including all retail stores with all econimical classes