CityU-EE Gifted Education Fund Programme:
AIoT Coding, Engineering and Entrepreneurial Skills Education
for Gifted Students

Department of
Electrical Engineering
CityU
香港城市大學
City University of Hong Kong

AI-Assisted Budget Keeper

Money Management done easy with AI

Team members (P2)

03 Au Ho Kuen | 17 Kyle Chen | 39 Yang Hip Hing
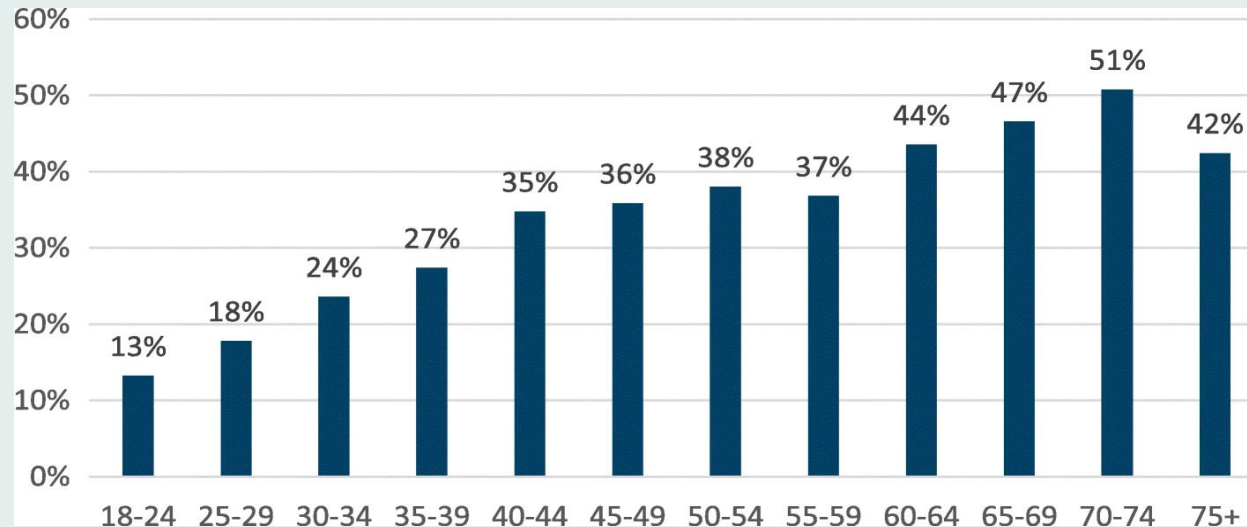
TABLE OF CONTENTS

01

Motivation

Background & motivation

Personal Finance

- What is personal finance?
  - Planning & meeting financial goals

- Why is it important?
  1. Financial markets are getting more complex
  2. More options of investment available

Data

Financial literacy across age in the USA. This figure shows the percentage of respondents who answered correctly all Big Three questions by age group (year 2015). Source: 2015 US National Financial Capability Study.

figure 4: *https://link.springer.com/article/10.1186/s41937-019-0027-5/figures/1*

Budgets

- What is the use of a budget?
    1. Can spot poor spending habits
    2. Act as introduction to personal finance

- Why is it not popular?
    - Manually inputting is too tedious

02

Our Solution

What we do to help with this issue

Features

- Receipt scanner
    1. More convenient
    2. More interesting

- Reports
    - Basic functions or electronic budget

Technology

We use OCR (optical character recognition) to search for keywords in the receipt

For this project we used **pytesseract**

Sample Input

Store name

Amount spent

Sample Output

```
In [95]: # img = Image.open('test_3.jpg')
         img = cv2.imread('test_2.jpg')
         text = pytesseract.image_to_string(img,lang="chi_tra+eng")
         print(text)

MUJI

無 印 良 品

WELCOME TO MUJI
FESTIVAL WALK STORE
TEL: (852)3971-3208

121-07-0000121475
28/Jan/2023 12:13:56
PRICE

20A Double Clip 6 pes

4550182207859 1 8.0 8.0
22A Dual Bo ee Wael i Cap
45473151873 1 7.0" 7.0
TOTAL 2 15.0
OCTOPUS 15.0
CHANGE 00
"OCTOPUS NO. e994o4eq f=
=< DEVICE No. 51631A
o REMAINING VALUE 17.4
~~ Last add value by Cash on 2023-01-14
= : = PA RT ID: KKK KKK
aay 更 燦 服 務 腮揀嗇圍服務咚 款 及
~ -<- 則 提 供 ，  】荳蒂】卜胃【，f】）曇【´筌卜斗 : 曷厂L喜…[）丶]軍甚】一7「、丶〔…丶〕<1票匕乙`
\'`~`  ， 術ttpS //www.muji.com.hk/zh/faq. Le
SS

MUJI Goods Exchange Service shall be subject

to the Terms and Conditions displayed on our
"= in-store notice or official website at
SS pttps://www.muj i .com.hk/zh/faq. php

Yet
SS IAAT AA
SS 2 1 0 / 0 0 same ene e
```

Simple output

```
    except:
        print("An exceptio

Store: MUJI
Total: 15.0
```

```
In [6]: # First the window l
```

Marketing

- Social media

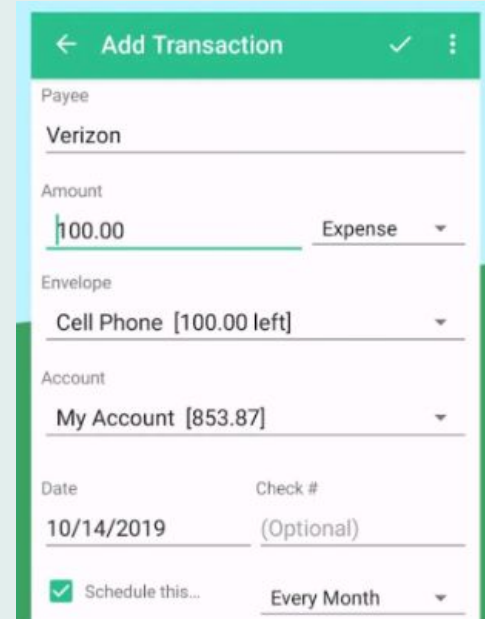 We will make use of social media platforms such as *Instagram*, *Twitter* to market our product

03

Competitors

Other existing options for
budgeting

Tradition manual input

- Examples
  - Wallet: Budget Planner Tracker
  - Goodbudget: Budget & Finance

- Problem
  - Tiring to use
  - Hard to form habit

Linking input

- Examples
  - Nerd Wallet
  - Planto

- Problem
  - Long & hard set-up
  - Privacy issues

Receipt scanner

- Example
  - Workday

- Problem
  - B to B sales model ($$)
  - Not accessible to general public

Key Differentiators

01

Input

We use a receipt scanner, which is convenient

02

Simple

No complex set-up, no privacy issues

03

B to C

Adopt a free to use sales model where we derive income from ads

04

Future work

How to improve existing prototype

App making

Although we said this is a budgeting application, because of the limited time we were not able to develop a actual app

More AI features

Image
Better recognise brand logos

01

02

Voice
Another input method

Analyse
Utilise AI to analyse & predict

03

04

Chatbot
Integrate chatbots to give advice

Other features

Receipt saving
The photo taken of the receipt will be saved

Manual & Link
Still provide these options of input

Daily reads
Recommend articles that can improve financial literacy

Unique UI
Make the UI highly customisable

THANKS