



ASSIGNMENT 1

CS251

DR. MOHAMMED ELRAMLY



LOAI HATABA

20230553

LOAIWLEED2005@HOTMAIL.COM

ABDULLAH MOHAMMED

20230231

ABDALLAMOHAMMED649@GMAIL.COM

HOSSAM ABDELAZIZ

20230121

HOSSAMABDELAZIZ2295@GMAIL.COM

Languages:

Loai → Java ☕
Abdullah → Java ☕
Hossam → Java ☕

Learning:

Name	Duration	Sources
Loai	8 Hours	https://youtube.com/playlist?list=PLJhTWoCm8I6DXaq7XECfyGKtsq4Z6fWZr&si=w_PmOmUhKEH6EyCl https://youtu.be/drQK8ciCAjY?si=cmx5cv4of_BQn4k5
Abdullah	4 Days	https://www.tutorialspoint.com/java/index.htm https://www.youtube.com/watch?v=mNvJipMTKSM&list=PLClnYL3l2AajYlZGzU_LVrHdoouf8W6ZN
Hossam	1 Day	https://www.youtube.com/watch?v=mNvJipMTKSM&list=PLClnYL3l2AajYlZGzU_LVrHdoouf8W6ZN HTTPS://WWW.YOUTUBE.COM/PLAYLIST?LIST=PLJhTWoCm8I6DXaq7XECfyGKtsq4Z6fWZr

Food Alternative (App 1 Loai):

Main Function:

```
Scanner scanner = new Scanner(System.in);

// Load food from JSON

String jsonPath = "food/foodDictionary.json";

List<FoodItem> foodList = GsonTool.loadFood(jsonPath);

while (true){

    printBanner();

    int menu = optionsMenu(scanner);

    switch(menu)

    {

        // Alternative Food

        case 1:

            foodMenu(scanner, foodList);

            int ans = continueApp(scanner);

            if (ans == 0){

                scanner.close();

                System.exit(0);

            }

            break;

        //Add new Food

        case 2:

            addFood(scanner, foodList, jsonPath);

            int ans2 = continueApp(scanner);

            if (ans2 == 0){

                scanner.close();

                System.exit(0);

            }

    }

}
```

```
break;
```

```
// Delete Food
```

```
case 3:
```

```
deleteFood(scanner, foodList, jsonPath);
```

```
int ans3 = continueApp(scanner);
```

```
if (ans3 == 0){
```

```
    scanner.close();
```

```
    System.exit(0);
```

```
}
```

```
break;
```

```
case 4:
```

```
prinInfoBanner();
```

```
int ans4 = continueApp(scanner);
```

```
if (ans4 == 0){
```

```
    scanner.close();
```

```
    System.exit(0);
```

```
}
```

```
break;
```

```
case 5:
```

```
System.out.println("\nGoodbye!!!");
```

```
scanner.close();
```

```
System.exit(0);
```

```
break;
```

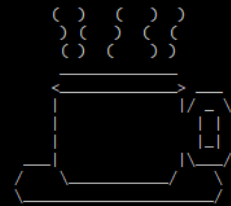
```
}
```

```
}
```

```
}
```

Screenshots:

[illegible]



Welcome choose an option:

- 1)Find Alternative Food
- 2)Add new Food
- 3)Delete Food
- 4)Info
- 5)Exit

Choice: 2

Add Food: ma7shy wara2 3enab

Calories per 100g: 350

Alternatives:

How many Alternatives: 2

Food Name: ma7shy kromb

Conversion Factor: 1.0

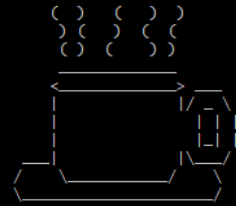
Food Name: ma7shy kosa

Conversion Factor: 1.2

Food Added!

Do you want to continue? (Y/N) |

```
335 {
336   "name": "Avocados",
337   "unit": "grams",
338   "calories": 160,
339   "alternatives": {
340     "Walnuts": 1.2,
341     "Almonds": 1.2,
342     "Olives": 1.1
343   }
344 },
345 {
346   "name": "Walnuts",
347   "unit": "grams",
348   "calories": 654,
349   "alternatives": {
350     "Cashews": 1.1,
351     "Almonds": 1.0,
352     "Pistachios": 1.1
353   }
354 },
355 {
356   "name": "Pizzaya",
357   "unit": "gram",
358   "calories": 350,
359   "alternatives": {
360     "koki": 1.6,
361     "cake": 1.5
362   }
363 },
364 {
365   "name": "Tuna",
366   "unit": "grams",
367   "calories": 150,
368   "alternatives": {
369     "salmon": 1.1
370   }
371 },
372 {
373   "name": "ma7shy wara2 3enab",
374   "unit": "grams",
375   "calories": 350,
376   "alternatives": {
377     "ma7shy kosa": 1.2,
378     "ma7shy kromb": 1.0
379   }
380 }
```



Welcome choose an option:

- 1)Find Alternative Food
- 2)Add new Food
- 3)Delete Food
- 4)Info
- 5)Exit

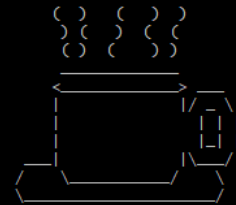
Choice: 3

Delete Food:

Food Name: fera5

Couldn't find fera5 anywhere :(

Do you want to continue? (Y/N) |



Welcome choose an option:

- 1)Find Alternative Food
- 2)Add new Food
- 3)Delete Food
- 4)Info
- 5)Exit

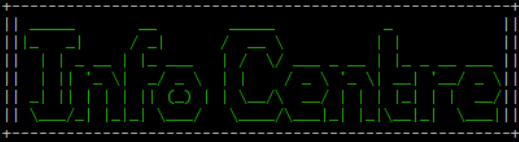
Choice: 3

Delete Food:

Food Name: ma7shy wara2 3enab

ma7shy wara2 3enab was deleted successfully!


Do you want to continue? (Y/N)










```



=====
* This Program was made by Loai Hataba
=====
* Food Alternative Dictionary
=====
* This application helps users find and compare
* food alternatives based on conversion factors.
*
* Features:
* - View food details (unit, calories, alternatives)
* - Add new foods with alternative conversions
* - Delete foods from the database in real time
* - Interactive menu with error handling
* - Data stored in JSON for persistence
*
* Technologies Used:
* - Java
* - Gson (For JSON handling)
* - HashMaps & Lists for data management
*
=====
Do you want to continue? (Y/N)


```







CS251
Public


 Pin
  Unwatch **1**
 Fork **0**
 Star **0**


 main
  1 Branch
  0 Tags

 Add file
  Code


HosStdeez updated again more features(needs clean up)
 03a8568 · now
🕒 14 Commits

	.vscode	Food Alternative app is done	2 days ago
	ExpensesTrackerApp	Abdallah's ScreenShots have been added	9 hours ago
	FoodAlternativeApp	Updated report still to finish comparison	14 hours ago
	ParkingLotSystem	updated again more features(needs clean up)	now
	CS251-A1-Part1_S18_20230553_20230121_202...	Abdallah's ScreenShots have been added	9 hours ago


README







Add a README

Help people interested in this repository understand your project by adding a README.

Add a README

About

No description, website, or topics provided.

 Activity
  0 stars
  1 watching
  0 forks

Releases

No releases published




[Create a new release](#)

Packages

No packages published

[Publish your first package](#)

Contributors 3

 **Loai-Hataba** Loai Hataba
  **Abdallah229** Abdallah Mohamed
  **HosStdeez** Hossam Abdelaziz

Video Link:

<https://drive.google.com/file/d/17hZjf0I-YBnwHZ371pdMD7uhwbIYaQP3/view?usp=sharing>

Budget Tracker (App 2 Abdullah):

Main Function:

```
System.out.println(
"          ***Welcome to the Expenses Manager App***");
System.out.println(
"          =====\n");
// Create an instance of the expenses list
final ExpensesList myExpenses = new ExpensesList();
//The app menu :
while (true) {
    System.out.println("\n                                Main Menu  ");
    System.out.println("                                =====\n");
    // Main menu options :
    // 1 Adding an expense :
    System.out.println("1. Add a new expense ");
    // 2 removing an expense :
    System.out.println("2. Remove an expense ");
    // 3 Display the expenses list :
    System.out.println("3. Display the expenses list ");
    // 4 Sort the expenses list :
    System.out.println("4. Sort the expenses list ");
    // 5 Export the expenses list to a file :
    System.out.println("5. Export the expenses list to a file ");
    // 6 Exit the app :
    System.out.println("6. Exit the app ");
    //read the user choice :

    final int choice = validInput.getValidInt("\nYour Choice is ( 1 -> 6
        ) : ", "Error : Invalid Choice !!", 1, 6);
    switch (choice) {
        case 1 ->
            myExpenses.addExpense();
        case 2 ->
            myExpenses.removeExpense();
        case 3 ->
            myExpenses.displayExpenses();
        case 4 ->
            myExpenses.sortExpenses();
        case 5 ->
            myExpenses.exportExpenses();
        case 6 -> {
    final int ch = validInput.getValidInt("Do you want to saving before closing
```

```

?\\n1)Yes\\n2)No ", "Error : Invalid Choice !!", 1, 2);
    if (ch == 1) {
        myExpenses.exportExpenses();
    }
    System.out.println("Terminating the program :(");
    return;
}
default ->
    throw new AssertionError();
}
}

```

Screenshots:

```

***Welcome to the Expenses Manager App***
=====

                Main Menu
            =====

1. Add a new expense
2. Remove an expense
3. Display the expenses list
4. Sort the expenses list
5. Export the expenses list to a file
6. Exit the app

Your Choice is ( 1 -> 6 ) :

```

Enter the title of the expense: Cinema

Enter the amount of the expense : 80

Current Categories :

- 1- Food
- 2- Transport
- 3- Entertainment
- 4- Shopping
- 5- Bills
- 6- Others

Choose a category (Write the index) :3

Do you want to add a specific date or use the current date ?

- 1 - current date
- 2 - specific date 1

The expense has been added successfully !

Main Menu

=====

- 1. Add a new expense
- 2. Remove an expense
- 3. Display the expenses list
- 4. Sort the expenses list
- 5. Export the expenses list to a file
- 6. Exit the app

Your Choice is (1 -> 6) : █

Main Menu

=====

- 1. Add a new expense
- 2. Remove an expense
- 3. Display the expenses list
- 4. Sort the expenses list
- 5. Export the expenses list to a file
- 6. Exit the app

Your Choice is (1 -> 6) : 3

=====

Expense number :	1
Title	:
Category	: Entertainment
Amount	: 80.00
Date	: 27/02/2025

=====

```

Main Menu
=====

1. Add a new expense
2. Remove an expense
3. Display the expenses list
4. Sort the expenses list
5. Export the expenses list to a file
6. Exit the app

Your Choice is ( 1 -> 6 ) : 2
      ( Removing an expense )
=====
-----
| Expense number :      : 1                               |
| Title           :      : Cinema                         |
| Category        :      : Entertainment                  |
| Amount          :      : 80.00                          |
| Date            :      : 27/02/2025                     |
|-----|
=====

Choose an expense to remove ( Write the index ) : 1
The expense has been removed successfully !

```

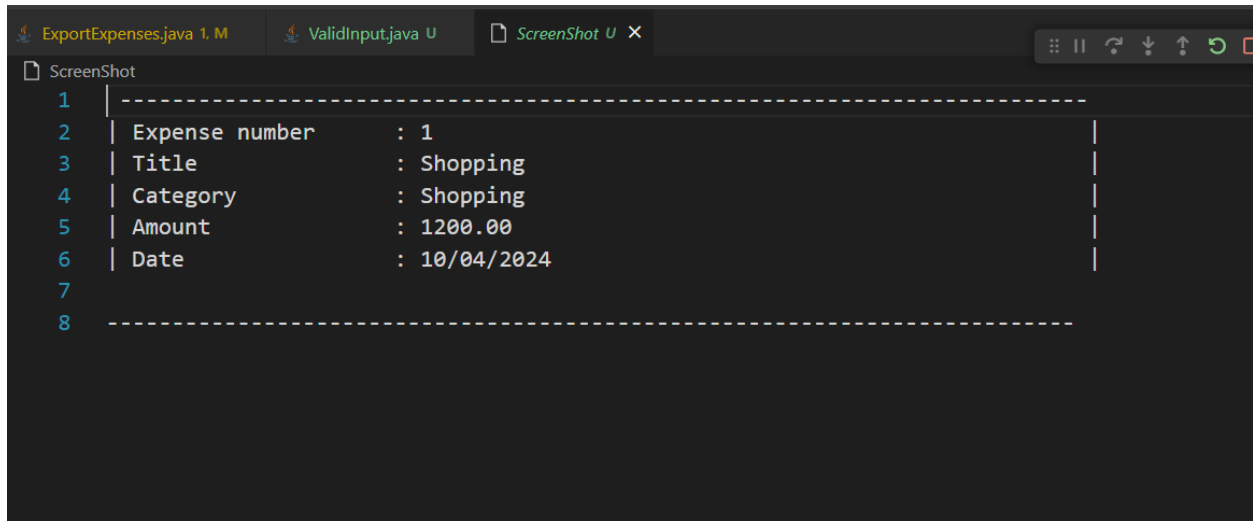
```

Main Menu
=====

1. Add a new expense
2. Remove an expense
3. Display the expenses list
4. Sort the expenses list
5. Export the expenses list to a file
6. Exit the app

Your Choice is ( 1 -> 6 ) : 5
      ( Saving an expense )
Do you want the file be in the current directory or a specific one ?
1)Yes
2)No1
Enter the file name without any file format ScreenShot
Attempting to create file at: ScreenShot
Export successful: ScreenShot

```



The screenshot shows a Java application window with three tabs: 'ExportExpenses.java 1. M', 'ValidInput.java U', and 'ScreenShot U'. The 'ScreenShot U' tab is active, displaying a text-based representation of an expense record. The output is formatted with dashed lines at the top and bottom, and a vertical line separating the labels from the values. The data shown is: Expense number: 1, Title: Shopping, Category: Shopping, Amount: 1200.00, and Date: 10/04/2024.

```
1 | -----  
2 | Expense number      : 1  
3 | Title               : Shopping  
4 | Category            : Shopping  
5 | Amount              : 1200.00  
6 | Date                : 10/04/2024  
7 |  
8 | -----
```

Video Link:

https://drive.google.com/file/d/1_kMyuxn59d8yfKYCnpGyDzSnc1SPGdx/view?usp=drive_link

Parking System (App 3 Hossam):

Main Function:

```
ParkingLot parkingLot = new ParkingLot(10);
```

```
Scanner scanner = new Scanner(System.in);
```

```
parkingLot.displayGrid();
```

```
// Track the last time we checked for expired reservations
```

```
long lastReservationCheck = System.currentTimeMillis();
```

```
while (true) {
```

```
    // Check for expired reservations every 5 seconds
```

```
    long currentTime = System.currentTimeMillis();
```

```
    if (currentTime - lastReservationCheck > 5000) { // 5 seconds
```

```
        parkingLot.checkReservations();
```

```
        lastReservationCheck = currentTime;
```

```
    }
```

```
// Main menu options
```

```
System.out.println("" +
```

```
    "\n1. Park Vehicle" +
```

```
    "\n2. Remove Vehicle" +
```

```
    "\n3. Show Parking Status" +
```

```
    "\n4. Reserve Slot" +
```

```
    "\n5. View Parking History" +
```

```
    "\n6. Admin Mode" +
```

```
    "\n7. Search Vehicle" +
```

```
    "\n8. Change Parking Rates" +
```

```
"\n9. View Statistics" +  
"\n10. Exit");  
  
int choice = scanner.nextInt();  
scanner.nextLine();  
  
// Check for expired reservations after any user action  
parkingLot.checkReservations();  
  
switch (choice) {  
    case 1:  
        System.out.print("Enter license plate: ");  
        String plate = scanner.nextLine();  
        System.out.print("VIP Slot? (yes/no): ");  
        boolean isVIP = scanner.nextLine().equalsIgnoreCase("yes");  
        System.out.print("Vehicle type (car/motorcycle/truck): ");  
        String vehicleType = scanner.nextLine().toLowerCase();  
        parkingLot.parkVehicle(plate, isVIP, vehicleType);  
        parkingLot.displayGrid();  
        break;  
    case 2:  
        System.out.print("Enter license plate to remove: ");  
        plate = scanner.nextLine();  
        parkingLot.removeVehicle(plate);  
        parkingLot.displayGrid();  
        break;  
    case 3:  
        parkingLot.displayGrid();  
        break;  
    case 4:
```

```

        System.out.print("Enter slot number to reserve: ");

        int slotNum = scanner.nextInt();

        scanner.nextLine();

        System.out.print("Enter reservation duration (hours): ");

        int hours = scanner.nextInt();

        scanner.nextLine();

        parkingLot.reserveSlot(slotNum, hours);

        break;

    case 5:

        parkingLot.displayParkingHistory();

        break;

    case 6:

        // Simple password protection for admin mode

        System.out.print("Enter admin password: ");

        String password = scanner.nextLine();

        if (password.equals("hoss123")) {

            parkingLot.adminMode();

        } else {

            System.out.println("Incorrect password!");

        }

        break;

    case 7:

        System.out.print("Enter license plate to search: ");

        plate = scanner.nextLine();

        parkingLot.searchVehicle(plate);

        break;

    case 8:

        // Password protection for changing rates

        System.out.print("Enter admin password: ");

```



```
password = scanner.nextLine();
if (password.equals("hoss123")) {
    System.out.print("Enter new regular rate: ");
    double regularRate = scanner.nextDouble();
    System.out.print("Enter new VIP rate: ");
    double vipRate = scanner.nextDouble();
    scanner.nextLine();
    ParkingFeeCalc.updateRates(regularRate, vipRate);
    System.out.println("Rates updated successfully!");
} else {
    System.out.println("Incorrect password!");
}
break;
case 9:
    parkingLot.displayStatistics();
    break;
case 10:
    System.out.println("Exiting...");
    return;
default:
    System.out.println("Invalid option!");
}
}
```

Screenshots:

```
Parking Lot Status:
[V] [V] [ ] [ ] [ ]
[ ] [ ] [ ] [ ] [ ]

Available slots: 10 (VIP: 2, Regular: 8)
Legend: [C]=Car [M]=Motorcycle [T]=Truck [V]=VIP Available [R]=Reserved [ ]=Regular Available

1. Park Vehicle
2. Remove Vehicle
3. Show Parking Status
4. Reserve Slot
5. View Parking History
6. Admin Mode
7. Search Vehicle
8. Change Parking Rates
9. View Statistics
10. Exit
```

```
10. Exit
2
Enter license plate to remove: bibi
Vehicle bibi (motorcycle) removed. Parked for: 00:01:18 (7.8 accelerated hours, 1 hour = 10 seconds). Fee: $10.92

Parking Lot Status:
[T] [V] [C] [ ] [ ]
[ ] [ ] [ ] [ ] [ ]
```

```
6
Enter admin password: h0ss123

Admin mode activated: Displaying all slots
Slot 1 | VIP: true | Occupied: true | Reserved: false | License: buh | Type: truck | Entry: 2025-02-28 10:47:43
Slot 2 | VIP: true | Occupied: false | Reserved: false
Slot 3 | VIP: false | Occupied: true | Reserved: false | License: b865 | Type: car | Entry: 2025-02-28 10:46:20
Slot 4 | VIP: false | Occupied: true | Reserved: false | License: bibi | Type: motorcycle | Entry: 2025-02-28 10:48:50
Slot 5 | VIP: false | Occupied: false | Reserved: false
Slot 6 | VIP: false | Occupied: false | Reserved: false
Slot 7 | VIP: false | Occupied: false | Reserved: false
Slot 8 | VIP: false | Occupied: false | Reserved: false
Slot 9 | VIP: false | Occupied: false | Reserved: false
Slot 10 | VIP: false | Occupied: false | Reserved: false

Current rates:
Regular rate: $2.0 per hour
VIP rate: $4.0 per hour
Vehicle modifiers: Motorcycle (-30%), Truck (+50%)
NOTE: 1 hour = 10 seconds.
```

```
Parking Lot Status:
[V] [V] [ ] [ ] [ ]
[ ] [ ] [ ] [ ] [ ]

Available slots: 10 (VIP: 2, Regular: 8)
Legend: [C]=Car [M]=Motorcycle [T]=Truck [V]=VIP Available [R]=Reserved [ ]=Regular Available

1. Park Vehicle
2. Remove Vehicle
3. Show Parking Status
4. Reserve Slot
5. View Parking History
6. Admin Mode
7. Search Vehicle
8. Change Parking Rates
9. View Statistics
10. Exit
1
Enter license plate: b865
VIP Slot? (yes/no): no
Vehicle type (car/motorcycle/truck): car
Vehicle parked in slot 3

Parking Lot Status:
[V] [V] [C] [ ] [ ]
[ ] [ ] [ ] [ ] [ ]
```

```
Enter license plate to search: buh

Vehicle found:
License plate: buh
Vehicle type: truck
Parked in slot: 1 (VIP)
Entry time: 2025-02-28 10:47:43
Parked for: 00:03:31 (21.1 accelerated hours, 1 hour = 10 seconds)
Current fee: $126.60
```

9. View Statistics

10. Exit

9

Parking Lot Statistics:

Total vehicles parked: 3

Total revenue: \$222.92

Vehicles by type:

Cars: 1

Motorcycles: 1

Trucks: 1

Current status:

Occupied slots: 0 (0.0%)

Reserved slots: 0

Available slots: 10

Video Link:

Link:

https://drive.google.com/file/d/1E3eVMdre3xwt6Xg1BuPAEF-Zgqf1_IS_/view?usp=sharing

LCNC Analysis: (AppGyver vs Glide)

1. Introduction

Low-code and no-code development platforms have gained popularity for enabling non-developers and businesses to create applications with minimal coding.

Among these platforms, **AppGyver** and **Glide** stand out as powerful tools for building apps efficiently. This report analyzes AppGyver's and Glide's usability, benefits, and system quality while comparing them to determine their strengths and suitability for different use cases.

2. Evaluation of AppGyver

Overview

AppGyver is a professional-grade no-code development platform that allows users to create web and mobile applications without writing traditional code. It is particularly known for its flexibility and extensive customization options.

Usability and Features

- **Drag-and-Drop Interface:** Offers an intuitive builder for designing app layouts and functionalities.
- **Extensive Components:** Provides pre-built UI elements and logic modules.
- **Data Integration:** Supports REST APIs, databases, and third-party services.
- **Multi-Platform Deployment:** Applications can be deployed on web, iOS, and Android.
- **Logic and Automation:** Allows users to define workflows and dynamic logic visually.

Benefits and System Quality

- **Customization:** Unlike many no-code tools, AppGyver enables deep customization, making it ideal for complex applications.
- **Performance:** Apps built with AppGyver are optimized for high performance, especially on mobile devices.

- **Scalability:** Supports scalable applications, making it suitable for startups and enterprises.
- **Security:** Provides robust authentication and data security features.

Impact on Developers' Roles

While no-code platforms like AppGyver simplify application development, they are unlikely to replace traditional developers entirely. Instead, they serve as **enhancement tools** that allow developers to prototype faster and focus on more complex backend logic. Additionally, organizations can leverage no-code platforms for internal tools without needing a dedicated development team.

3. Evaluation of Glide

Overview

Glide is a no-code development platform that specializes in creating simple, data-driven applications using Google Sheets as a backend. It is widely used for lightweight business applications, internal tools, and prototypes.

Usability and Features

- **Google Sheets Integration:** Data is dynamically synced with Google Sheets, making data management straightforward.
- **Pre-Built Templates:** Provides templates to accelerate app creation.
- **Mobile-First Design:** Optimized for mobile applications with responsive design.
- **Drag-and-Drop Builder:** Users can easily add and arrange elements without coding.
- **Limited Logic & Automation:** Basic workflows can be set up, but advanced logic is limited.

Benefits and System Quality

- **Ease of Use:** Designed for non-technical users, making app creation accessible to a wide audience.
- **Speed of Development:** Apps can be created and deployed in minutes with minimal effort.
- **Cloud-Based:** Eliminates the need for complex hosting or deployment.

- **Data Management:** Real-time updates with Google Sheets ensure seamless synchronization.

Impact on Developers' Roles

Glide significantly lowers the barrier for app creation, allowing businesses to create internal tools without needing a development team. However, its **limited customization and scalability** mean that traditional developers are still essential for building feature-rich, enterprise-level applications. Glide is best suited for rapid prototyping and simple, data-driven applications rather than complex business solutions.

4. Comparison of AppGyver and Glide

Feature	AppGyver	Glide
Ease of Use	Moderate learning curve	Very beginner-friendly
Customization	High (supports complex logic and UI design)	Limited (focuses on simplicity)
Scalability	Suitable for enterprise applications	Best for small projects and internal tools
Pricing	Free for solo developers; enterprise pricing available	Free tier with premium plans for business features
Integrations	REST API, third-party services, external databases	Google Sheets, Airtable, Zapier, and limited API support

5. Sample To-Do List App

As part of this comparison, we created a **To-Do List App** using Glide. The application enables users to:

- Add new tasks with descriptions.
- Mark tasks as completed.
- Store and retrieve data using Google Sheets.
- Access the app from both web and mobile devices.

Glide's simplicity allowed for quick development, making it an excellent choice for basic applications.

Video link:

https://drive.google.com/file/d/1vqT3N6ripz5jJ3y9BYiqkThsBJVXNKQ7/view?usp=drive_link

App link:

<https://habit-tracker-app-ills.glide.page>

6. Conclusion

AppGyver and Glide both offer unique advantages in the no-code development space. Glide is ideal for quick prototyping and simple applications, while AppGyver provides greater flexibility and customization for more complex projects.

Pre-Project :

1. Market and Gap analysis

Global Practices

Personal budgeting software isn't a new idea as it can be found in many countries, offering comprehensive features to help people manage their finances. An example of those applications include **Mint**, **PocketGuard**, **EveryDollar**, and **GoodBudget**. These apps provide different approaches to budgeting, from detailed manual tracking to automated expense management.

- **Mint**: Automatically syncs with bank accounts and categorizes expenses. It provides visual reports and personalized budgeting recommendations.
- **PocketGuard**: Offers simple budgeting with a focus on preventing overspending by showing how much disposable income is left after accounting for bills and savings.
- **EveryDollar**: Provides zero-based budgeting where users assign every dollar of income to a category, promoting careful financial planning.
- **GoodBudget**: Uses an envelope system where users allocate money to different categories, making it ideal for people who prefer manual control.

Egypt's Market

In the Arab region, personal budgeting apps are less prevalent, but there are some local and regional options that cater to Arabic-speaking users. Popular apps include:

- **Masareef**: A budgeting app in Arabic that helps users track income and expenses.
- **Wally**: A widely used app that supports expense tracking and allows users to set financial goals. It supports both English and Arabic languages.
- **Tajer**: Focuses on expense tracking for small businesses but can be used for personal budgeting.
- **Monefy**: An easy-to-use app that allows quick expense logging and provides visual insights.

These apps offer basic features such as expense tracking and simple reporting, but advanced features like bank account integration, financial goal setting, and predictive analytics aren't really in there.

Gap Analysis

Local apps tend to focus only on expense tracking without offering deeper financial insights or integration with banking systems, the apps are fine and do their job but they could really go an extra mile to offer more features in their apps that would be very beneficial for the users such as integrating your bank account so you can track your spendings more accurately.

The key gaps in the Arab region market include:

- **Bank Account Integration:** Very few apps automatically sync with bank accounts or e-wallets, making users manually enter transactions.
- **Financial Goal Setting:** Limited functionality for setting and tracking financial goals like savings for vacations or debt repayment.
- **Customizable Budgets:** Lack of flexible budgeting tools that allow users to set limits for different categories and adjust them dynamically.
- **Insights and Analytics:** Minimal reporting features to help users understand spending patterns or predict future expenses.
- **User Education:** Few apps offer financial education content to help users improve their financial literacy.

2. Market Segmentation and Research

3. Domain Analysis

4. Proposed Solution