

# Project Documentation

## 1. Project Overview

The **OldPhonePad** function simulates old mobile phone keypads to convert numeric input into text using multi-tap input. It follows the T9-style text input mechanism used in older mobile phones.

## 2. Features

- Converts numeric key presses into corresponding letters.
- Supports backspace (\* key) for corrections.
- Supports spaces (0 key) for word separation.
- Ensures valid input processing and ignores invalid entries.

## 3. Installation Guide

1. Clone the repository:

```
git clone https://github.com/aaqibkhalique/IronPDFCodingChallenge.git
```

2. Open the solution in **Visual Studio**.
3. Run the application or execute unit tests.

## 4. Class Structure

- **Phone**: Contains the `OldPhonePad` method, which processes keypad input and converts it to text.
- **KeyPad**: Represents a single key on a T9 keypad along with its associated characters.

## 5. How It Works

- Numbers 2-9 correspond to specific letters (e.g., 2 → ABC).
- Pressing the same number multiple times cycles through the letters.
- \* acts as a backspace and deletes the last entered character.
- 0 adds a space.

- Input must end with # to be processed.

## 6. Error Handling

- Returns an empty string if the input is invalid or does not end with #.
- Handles edge cases like consecutive \* presses and spaces correctly.

## 7. Example Test Cases

Input	Output
4433555 555666096667775553#	HELLO
9675533 5556660966#	WORLD
8337777 7777888#	TEST
44*4477#	HI
123#	`` (empty string)

## 8. Running Tests

1. Open **Test Explorer** (Test > Test Explorer).
2. Click **Run All** to execute tests and verify the correctness of the implementation.

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For any questions or clarifications, feel free to reach out via WhatsApp or email.

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