# InvoiceGen – Requirements and design specifications

## Purpose

To provide a simple system of generating monthly invoices, as well as generic invoices, as spreadsheets, and to email them to a recipient. Will also be capable of storing historical records, so they can be generated again.

## Overview and requirements

The application will be capable of saving a list of items entered by the user into the form as a spreadsheet.

The application will be able to save the spreadsheet to disk, as well as send it via email to a nominated recipient.

The application will be able to keep a history of invoices in a database or similar, so they can be retrieved and viewed, and the spreadsheets or emails generated again.

### Data Flow

A picture containing bird

Description automatically generated

Figure : Level-0 Data Flow Diagram

A picture containing game

Description automatically generated

Figure : Level-1 Data Flow Diagram

## Architecture design

The system will be comprised of a single, portable desktop application. It will be written in C# .NET using WinForms.

The application will be structured as a Model-View-Presenter (MVP) design. This pattern is known to be a sound choice for WinForms applications, and provides a high degree of testability, especially for the user interface. This is important for this application, as it is anticipated that the behaviour of some of the user interface controls will be complex enough that manual testing may not uncover as many bugs as with unit testing.

## Data design

Invoice data will be stored on disk as an XML file, with entries for each invoice, and the items contained within.

In the application, classes will be used to represent Invoices, as well as each item within an invoice.

## Interface design

A screenshot of a social media post

Description automatically generated

Figure : Screenshots

## Use cases

### 6.1 New Invoice