

# *What's It Worth?*

## User Manual



# What's It Worth?

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## OVERVIEW

"What's It Worth?" is a desktop application that allows users to calculate and track the market price of the materials in their jewelry. This project aims to provide real-time valuations, considering the current market conditions, while still being easy to understand and access. The main purpose for this application is to properly inform users about the investment value of their jewelry to allow them to make well educated decisions when purchasing, selling, insuring, or passing down their valuable possessions.

The basis of this project lies within the realm of jewelry valuation, an area where the value of jewelry is tied to the prices of precious materials which can change rapidly. The problem arises when consumers are taken advantage of for often lacking access to up-to-date market information and the convenient tools necessary to determine the value of their jewelry themselves. To address this issue, it is essential to create a tool that can provide real-time valuations, considering the current market conditions, while still being easy to understand and access.

My solution, the "What's It Worth?" desktop application, will allow users to input detailed information about their jewelry, whether it is just a precious metal or a combination of both metal and diamonds. If it is a combination of both precious metals and diamonds, the detailed information would include jewelry description (Ex: Ring), precious metal type (Ex: Gold), precious metal purity (Ex: 14 Karat), total weight of the piece of fine jewelry (Ex: 8.2 Grams), and a photo of the item along with diamond characteristics for each diamond such as diamond weight (Ex: 1.02 Carat), diamond shape (Ex: Pear), diamond color (Ex: F), and diamond clarity (Ex: VS1). The application

will then use this data, along with real-time pricing information from *Kitko.com* and IDEX, to calculate the current market value of the item and store it within a database to allow the user to view changes over time.

This comprehensive and easy-to-use tool will include many functionalities to allow the usability of the application. Some key features that will be included are:

- *User account management (create, edit, delete)*
- *Jewelry item management (add, edit, delete, compare)*
- *Detailed jewelry item information input fields*
- *Reports on the progress of the market value of jewelry items*
- *Live pricing data integration for precious metals and gemstones*
- *Valuation calculation engine to determine item worth*
- *Informational resources and links related to jewelry and family store*
- *Secure data storage and user privacy measures*

By providing this comprehensive and easy-to-use tool, "What's It Worth?" will enable users to better understand the value of their jewelry. This can help them make more informed decisions when purchasing, selling, insuring, or passing down their valuable possessions.

Although the "What's It Worth?" application can benefit a wide range of users, it offers the same easy-to-use interface for all of them. Some of the different users that could directly benefit from the application are:

- *Individual Jewelry Owners:* People who have inherited, been gifted, or purchased jewelry can use the application to determine the current market value of their

items. This empowers them to make informed decisions about selling, insuring, or passing down their jewelry.

- *Potential Purchasers:* People who are looking to purchase a piece of jewelry can use the application to determine what they are able to purchase based on their price range. This allows them to make an informed purchase at a fair price.
- *Previous Metal Investors:* People who continually purchase jewelry as an investment can use the application to track the value of their jewelry over time, helping them make wise investment decisions and better understand the market.
- *Retail Workers:* Employees at shops that offer the purchasing of precious metals and diamonds can leverage the application to provide more accurate appraisals for their customers, building trust and reputation.
- *Local Companies:* Smaller jewelry stores and pawn shops can benefit from the application adding the items they have purchased to view the cost of all their products as a whole to have an accurate valuation of the merchandise.

By addressing the problem of jewelry undervaluation, "What's It Worth?" can help users be more informed about the financial aspect of their items and serves as a helpful tool to keep track of their high-end luxury goods.

# REQUIREMENTS

This section details the requirements of “What’s It Worth?”. The details listed below will include the hardware and software requirements for the user and the main functionalities of the system.

## **Hardware and Software Requirements**

The program requires a computer system with the following minimum specifications to use:

### **Hardware**

- Memory: 4 GB RAM
- Storage: 4GB available storage
- Display Resolution: 1280x720 or higher
- Internet Connection
- .NET Framework

### **Software**

- Operating System: Windows 10/11
- Database: Microsoft SQL Server
- Visual Studio 2022

## **Functionalities**

For “What’s It Worth?” to become a user-friendly and interactive interface, it will need multiple functionalities to become an easily accessible application. To achieve this, the following major functional requirements have been identified below, including what

the users are able to do within the system and what the system itself needs to be able to do to function properly. For the system to be fully operational, all these functionalities need to be integrated with one another as they will be accessing the same data within the database. These functions listed are the foundation for the application as I would like there to be constant updates adding new functionalities. As this project is based on a solution for the everyday person, the only role will be the user themselves. Every user will be able to do the following actions and activities:

- Create an account
  - o *Input User\_Name, User\_Email, and User\_Pass*
- Edit an account
  - o *Edit User\_Name, User\_Email, and User\_Pass*
- Delete an account
- Sign in to account
- Logout of account
- View list of items
  - o *View total price for all items*
  - o *Select specific item*
    - *View latest price of an item*
    - *View item information*
- Compare items
- Add jewelry item
  - o *Input Metal\_Type, Metal\_Purity, and Total\_Weight*
  - o *Add Diamond*

- *Diamond\_Carat, Diamond\_Clarity, Diamond\_Color, and Diamond\_Cut*
  - *Input Photo*
  - *Input Description*
- Delete jewelry item
- Generate total report
- View useful links
  - *View Install and Project Information*
    - *Select link to market diamond price API*
    - *Select link to stock market gold price*
    - *Select link to family store*

On top of these functionalities that the system needs to offer the user, there are system functionalities that the “What’s It Worth?” system needs to perform either automatically or when an event is triggered that the user might not even need to see. In general, these are the functionalities that the system needs to do:

- *Store user login and account information in database*
- *Encryption of sensitive data*
- *Store jewelry item information in database*
- *Generate unique User\_ID for each user*
- *Generate unique Item\_ID for each item*
- *Calculate price for each item of jewelry*
- *Update metal prices at 12AM UTC everyday*
- *Update price of user items on login of user*

- *Calculate summed price of all items for each user*

# INSTALLATION

This section goes over how to install and use the “What’s It Worth?” application.

The guide below details how to install, set up and run the application for users wanting access to the application.

## Installation

This guide outlines the steps a user needs to take to install and set up the application on their machine. It includes how to get the files, restore the database, and run the application. The steps are:

1. Set up Visual Studio.
  - a. Go to <https://visualstudio.microsoft.com/>
  - b. Click on “Download Visual Studio” Button
  - c. Find and open the installer
  - d. Follow the installation steps
2. Set up .NET Framework.
  - a. Go to <https://dotnet.microsoft.com/en-us/download/dotnet-framework>
  - b. Click on latest version
  - c. Find and open the installer
  - d. Follow the installation steps
3. Set up SQL database.
  - a. Go to <https://learn.microsoft.com/en-us/sql/database-engine/install-windows/install-sql-server?view=sql-server-ver15>
  - b. Follow instructions to download Microsoft SQL Server

- c. Go to <https://learn.microsoft.com/en-us/sql/ssms/download-sql-server-management-studio-ssms?view=sql-server-ver16>
  - d. Follow instructions to download SQL Server Management Studio
4. Copy the “What’s It Worth?” files.
- a. Download .zip file
  - b. Extract files into new folder that you would like to use as your workplace on Visual Studio
5. Import database.
- a. Open SSMS and connect to local server
  - b. Right click on ‘Databases’ in Object Explorer and select ‘Import Data-tier Application’
  - c. Using the import wizard, select the WhatsItWorth.bacpac file from your workplace project folder and import database
6. Update the connection string.
- a. Open the App.config file in your preferred text editor
  - b. Replace placeholders such as ServerName and DatabaseName with your actual server name (often localhost for a local machine) and the database name you restored.

*Example syntax of a connection string to update:*

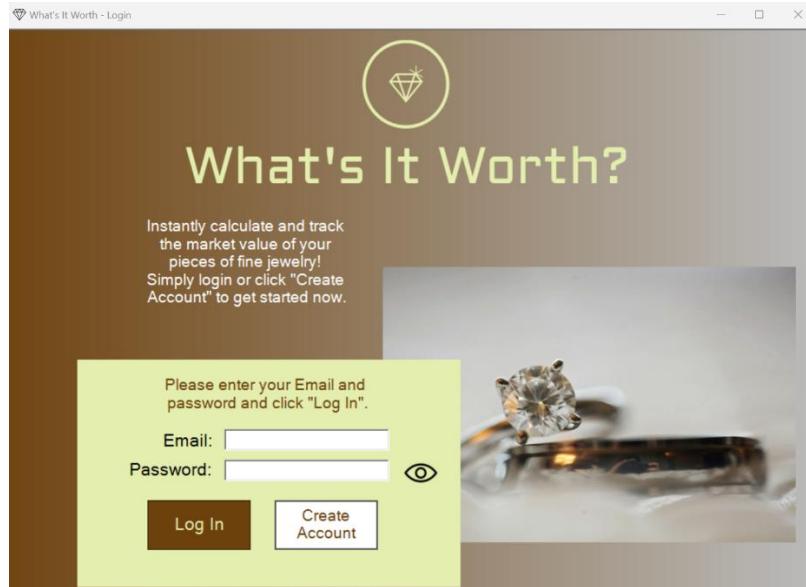
```
<connectionStrings>
<add name="WhatsItWorth.Properties.Settings.WhatsItWorthConnectionString"
connectionString="Data Source=YOURSERVERNAME;Initial
Catalog=WhatsItWorth;Integrated
Security=True;Encrypt=True;TrustServerCertificate=True"
providerName="System.Data.SqlClient" />
</connectionStrings>
```

7. Build the application.
  - a. Open the WhatsItWorth.sln file in Visual Studio
  - b. Import the project workplace file with the source code into Visual Studio.
  - c. Build the application.
8. Run the application
  - a. Press “Run” in top of Visual Studio

## SAMPLE SESSION

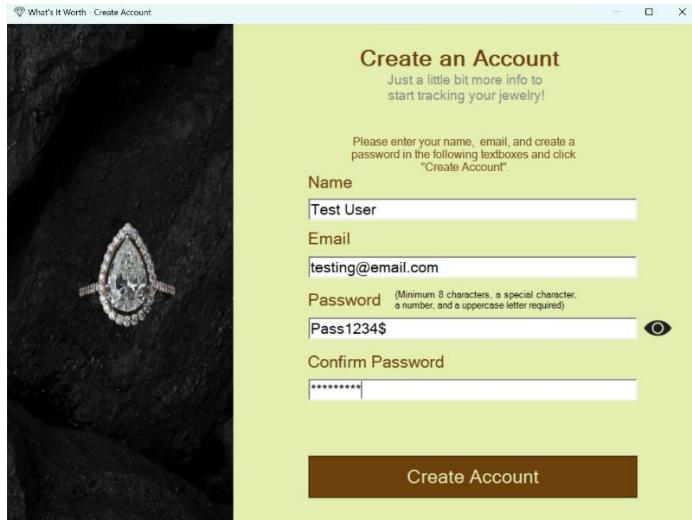
This section covers a sample first-time users' session for the "What's It Worth?" system. For each step or interaction, there will be the name of the step, screenshot of the screen underneath it, along with a description of each below the photo. This walkthrough will show a new user creating an account and adding an item to their account.

### 1. Starting the Application



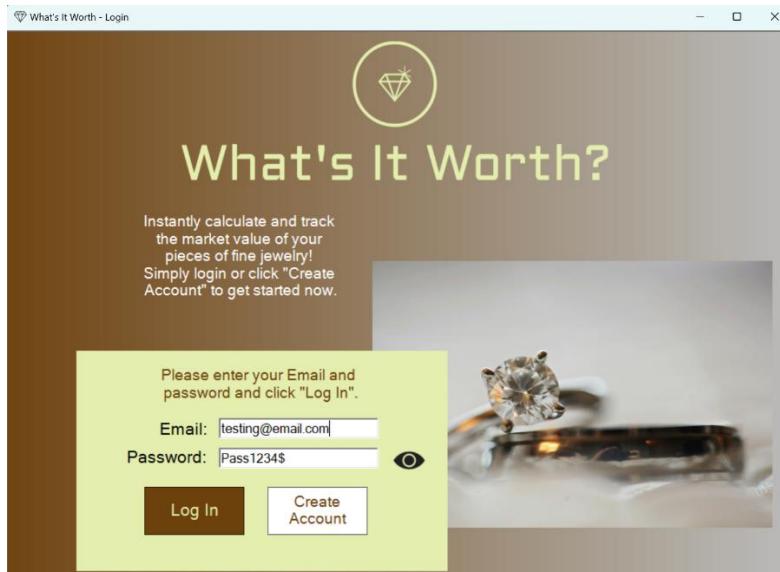
The login page welcomes users with the "What's It Worth?" logo, an overview of the application, a username and password input boxes, and two buttons that say, "Log In" and "Create Account". The background has a photo of a diamond ring to set the theme to a classier application. Here, will press the "Create Account" button.

## 2. Creating an Account



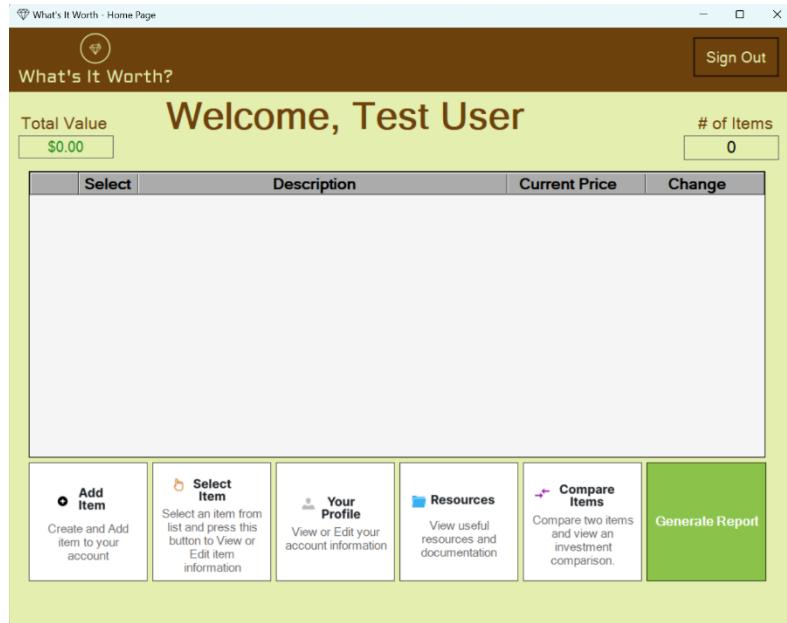
After selecting “Create Account”, users see the “Create the Account” screen displaying 4 textboxes for users to input their Name, Email, Password, and Password again. These are all validated in real time and a user cannot create an account unless there are no errors. Here we see that our name is “Test User”, email is ‘testing@email.com’, and password is “Pass1234\$” which meets the minimum requirements. From here, we select create account.

## 3. Logging in



Users then enter the email and password from the account created previously. From here, we will click the Log In button and the system will verify the credentials.

#### 4. Home Page



If credentials are verified, the user gets redirected to their own customized Home Page. This is the main page for the application where most of the functionalities are accessed. We can see a banner in the top of the screen with the logo on the left side and a Sign Out button on the right. Underneath that, we can see a welcome message for the user using the name that they set when creating their account. To the left of that, we can see the “Total Value” box that shows the summation of the current prices of all their items. On the right side, we can see the number of items the user has created. Here, they are both 0 as this is a new account. In the middle of the screen, we can see a table with all of the details about the item such as description, current price, and change. There is also a check box in the select column to the left of the details. We can see here that the table is empty as the account does not have any items yet. On the bottom of the screen, we can see an “Add Item”, “Select Item”, “Your Profile”, “Resources”, “Compare Items”, and “Generate Items” buttons. We can now press the “Add Item” button.

## 5. Creating Item

The screenshot shows the 'Add Item' window with the following details:

- Metal Type:** A dropdown menu.
- Total Weight (Grams):** An input field containing "1.0".
- Add Diamond:** A button.
- Add Photo:** A button.
- Description:** A text area labeled "Enter Item Description".
- Buttons at the bottom:** "Go Back" and "Add Item" (in a brown box).

If the “Add Item” button is clicked from the Home Page, the Add Item page will be displayed. This page will display “Metal Type”, “Total Weight” combo-boxes, “Description” textbox, an “Add Diamond” button, and an “Add Photo” button. From here, we add the metal type and total weight of the item.

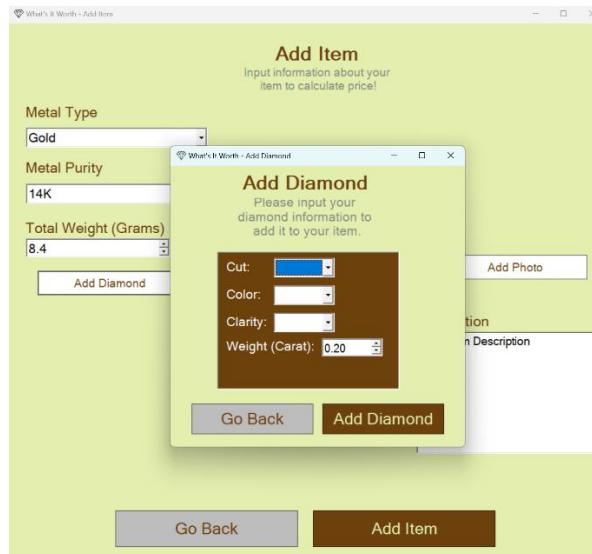
## 6. Inputting Metal Information

The screenshot shows the 'Add Item' window with the following details:

- Metal Type:** A dropdown menu set to "Gold".
- Metal Purity:** A dropdown menu set to "14K".
- Total Weight (Grams):** An input field containing "8.4".
- Add Diamond:** A button.
- Add Photo:** A button.
- Description:** A text area labeled "Enter Item Description".
- Buttons at the bottom:** "Go Back" and "Add Item" (in a brown box).

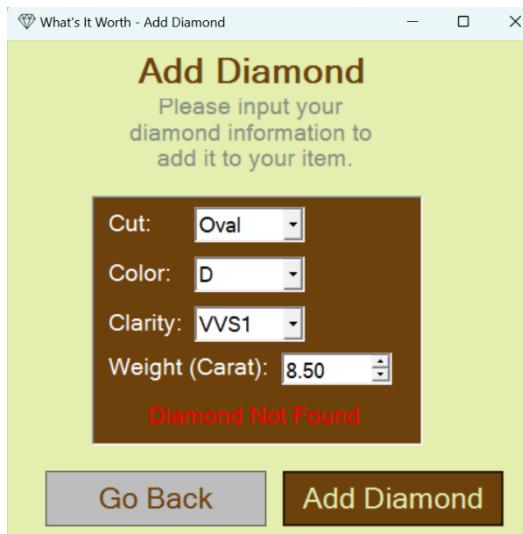
We chose gold for the metal type which displays an extra “Metal Purity” combo-box where we selected 14K. We also input the total weight as 8.4 Grams. From here, lets click the “Add Diamond” button.

### **7. Adding a Diamond**



If the “Add Diamond” button is clicked from the Add Item page, the Add Diamond page will be displayed. From here the user needs to select/input the “Cut”, “Color”, “Clarity”, and “Weight”. There is also a “Go Back” and “Add Diamond” button at the bottom of the screen.

### **8. Inputting Diamond (Not Found)**



We can select Oval for the diamond “Cut”, D for the diamond “Color”, Clarity for the diamond “Clarity”, and input 8.5 for the diamond “Weight”. After inputting, we click on “Add Diamond”. However, this displays “Diamond Not Found”. This is because that the diamond requested is not currently on the IDEX marketplace, so an accurate price is not able to be calculated based on the characteristics. So we can readjust the diamond and press “Add Diamond” again.

### ***9. Added Diamond***

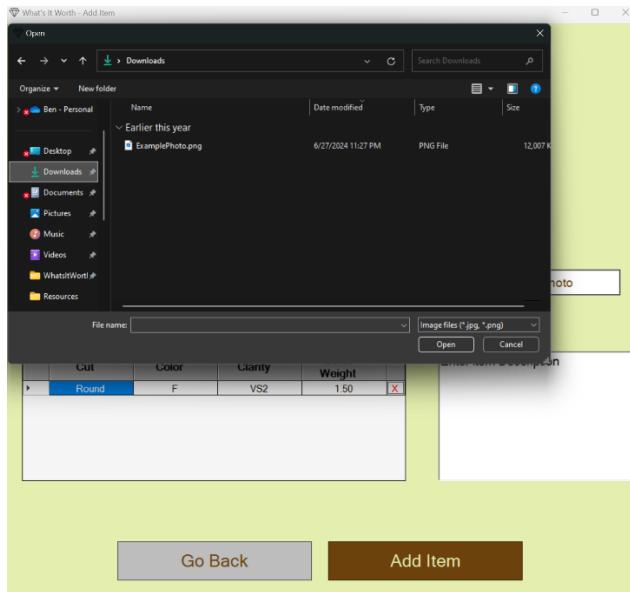
The screenshot shows the 'Add Item' window with the following details:

- Metal Type:** Gold
- Metal Purity:** 14K
- Total Weight (Grams):** 8.4
- Add Diamond:** A button to add another diamond.
- Diamonds:** A table showing one row of diamond details:
 

Cut	Color	Clarity	Carat Weight
Round	F	VS2	1.50
- Description:** A text input field for item description.
- Add Photo:** A button to add a photograph.
- Go Back:** A button to return to the previous page.
- Add Item:** A large brown button at the bottom right.

If your diamond is valid and price is obtained, then the Add Diamond page will close and the Add Item page will show a table with the added diamonds’ details. You can add multiple diamonds to an item by pressing “Add Diamond” and remove a diamond from the table by clicking the small ‘x’ in the corresponding row. We then click on the “Add Photo” button.

### ***10. Adding Photo***



If the “Add Photo” button is clicked from the Add Item page, a local folder browser will be displayed. This will allow you to select a .png or .jpg image to attach to the item. Let’s select ‘ExamplePhoto.png’ and click ‘Open’.

## 11. Adding Item

	Cut	Color	Clarity	Carat Weight	
1	Round	F	VS2	1.50	X
2					

Now we can see all our item information along with the photo of the item. The user is also able to add a description, however, one will be autogenerated if no description is input. We then click the “Add Item” button.

## 12. Viewing New Item

The screenshot shows the application's home page titled "Welcome, Test User". At the top, it displays "Total Value \$4,546.10" and "# of Items 1". Below this is a table with one row containing the item "14K Gold; 8.4G with Diamonds" with a value of "\$4,546.10" and a change of "\$0.00". Below the table are six buttons: "Add Item", "Select Item", "Your Profile", "Resources", "Compare Items", and "Generate Report". The "Select Item" button is highlighted with a green background.

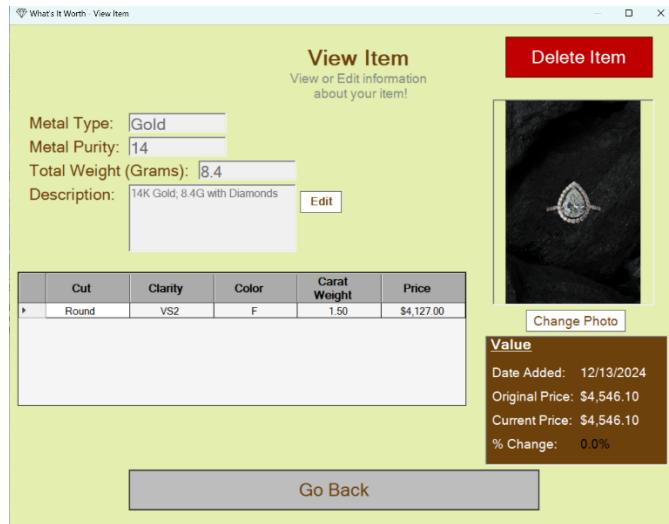
Once the item is added, the Home Page is displayed with the updated information. We can see that the “Total Value” had changed to \$4546.10, and that the “# of Items” has been changed to 1. In the middle, we can see an overview of the item.

## 13. Selecting Item

This screenshot is identical to the previous one, but the "Select" checkbox in the first row of the table is now checked. The rest of the interface, including the total value, number of items, and the set of buttons below the table, remains the same.

We select the item using the checkbox in the “Select” column in the corresponding row for the item we want to view. From here, we press the “Select Item” button.

#### 14. Viewing Item



After selecting the item, the View Item page appears with the “Metal Type”, “Metal Purity” (If applicable), “Total Weight”, “Description”, diamond table (If applicable), and photo that we set when we created the item. We can also see a panel in the bottom right corner with “Value” information such as “Date Added”, “Original Price”, “Current Price”, and “% Change”. There is also a “Delete Item” button, that if clicked, deletes the item from the user’s account. Lastly, there is a “Go Back” button on the bottom of the screen that takes the user bag to the Home Page.

## REQUIREMENTS

This section goes over the troubleshooting that can still occur during a user walkthrough or installation of “What’s It Worth?” application. The table below gives the symptoms, causes, and solutions to these issues/bugs.

<b>Symptom</b>	<b>Cause</b>	<b>Solution</b>
SQL connection failure.	Invalid connection string.	Check the connection string to the database.
Not able to log in.	Database issue.	Check database in SSMS and SQL connection string.
Error generating report.	ReportViewer package is not installed.	Close application, rebuild solution, and restart application.
Black screen on startup.	Display resolution mismatch or graphics driver issue.	Ensure that device meets project requirement.
Error message: "File not found".	Missing or corrupted source code.	Verify source code files in the original solution match source code in local solution.
Home Page table not showing data.	Invalid connection string.	Check the connection string to the database.

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