

ALGOMA UNIVERSITY

# Library Management

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Student ID: 199693500

5/29/2019

# Library Check-in/Check-out System

## About the application (high level)

Library check-in/check-out is a simple web application that allows the user to add a member to library, check-in and check-out a book. There are 3 menus on the web application for these. Each has a form asking for various details and a button to perform the operations.

Application screenshots below for reference:

The screenshot shows a web browser window with the URL `librarycheckincheckout.azurewebsites.net/Checkin`. The page has a dark navigation bar with links: Library, Add a member, Checkin, and Checkout. The main content area is titled "Book Check-in" and contains a form with the following fields:

- Name:  (placeholder: Enter name)
- Student ID:  (placeholder: Enter Student ID)
- Book Name:  (placeholder: Select Book)
- Book ID:  (placeholder: Select Book ID)
- Taken date:  (placeholder: mm/dd/yyyy, placeholder: Select valid date)

Below the form is a "Check-in" button.

The screenshot shows a web browser window with the URL `librarycheckincheckout.azurewebsites.net/Checkout`. The page has a dark navigation bar with links: Library, Add a member, Checkin, and Checkout. The main content area is titled "Book Check-out" and contains a form with the following fields:

- Name:  (value: Ancy Tom)
- Student ID:  (value: 19953345)
- Book Name:  (value: Software Testing and Quality Assurance)
- Book ID:  (value: AlgBk0002)
- Return date:  (value: 05/16/2019)

Below the form is a "Check-out" button. A message "Book check-out noted" is displayed below the button.

The screenshot shows the Windows taskbar at the bottom of the screen. It includes the Start button, several application icons (including a web browser and a file explorer), and the system tray on the right showing the time as 2:43 AM on 5/29/2019.

Library Add a member Checkin Checkout

## Book Check-in

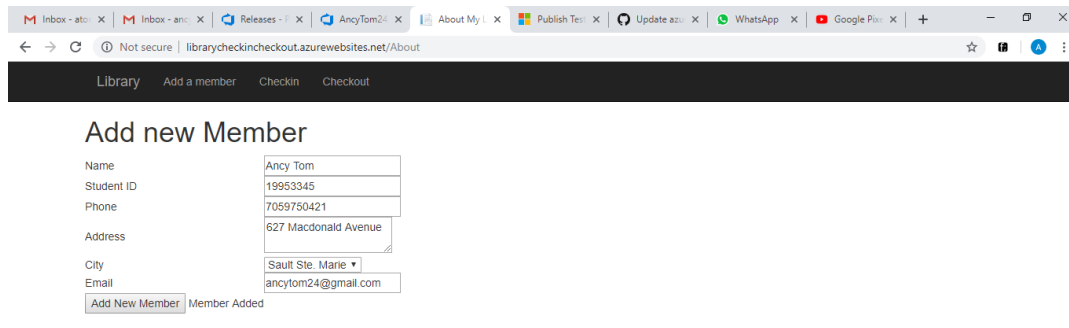
Name	Ancy Tom
Student ID	19953345
Book Name	Mobile Strategy
Book ID	AlgBk0002
Taken date	05/15/2019
Check-in	Book check-in noted

Library Add a member Checkin Checkout

## Add new Member

Name		Enter student name
Student ID		Enter student ID
Phone		Enter Phone
Address		Enter address
City	Select City	
Email		Enter email
Add New Member		

Desktop 2:40 AM 5/29/2019

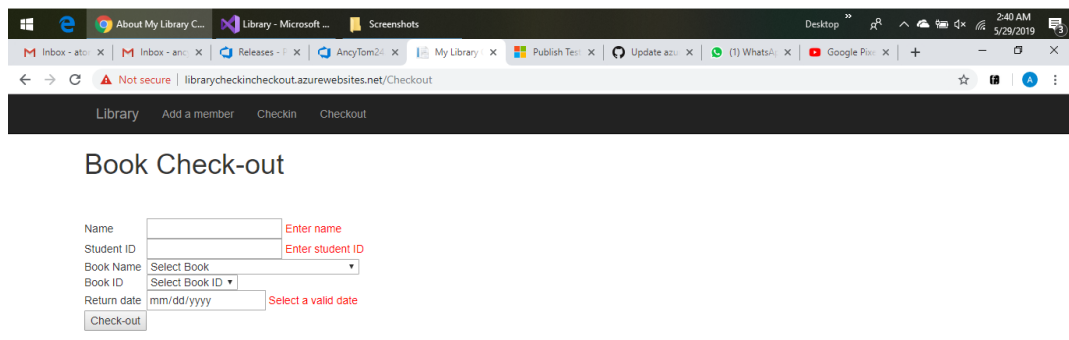


Library Add a member Checkin Checkout

### Add new Member

Name	Ancy Tom
Student ID	19953345
Phone	7059750421
Address	627 Macdonald Avenue
City	Sault Ste. Marie
Email	ancytom24@gmail.com

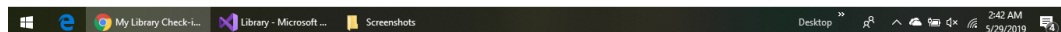
Member Added



Library Add a member Checkin Checkout

### Book Check-out

Name		Enter name
Student ID		Enter student ID
Book Name	Select Book	
Book ID	Select Book ID	
Return date	mm/dd/yyyy	Select a valid date



## About the application (low level)

Library app is created in .net framework 4.7 with c#. On click of buttons, form details are saved into a txt file. Versioning is controlled by GitHub and build and release is done in Azure. Unit test for .net framework is also used for testing.

### Tools Used:

- Visual studio 2019 – IDE for developing
- GitHub – versioning
- Visual studio unit test for .net framework application – unit testing
- Azure DevOps – creating build and release pipeline, deployment.
- Windows OS

## Versioning

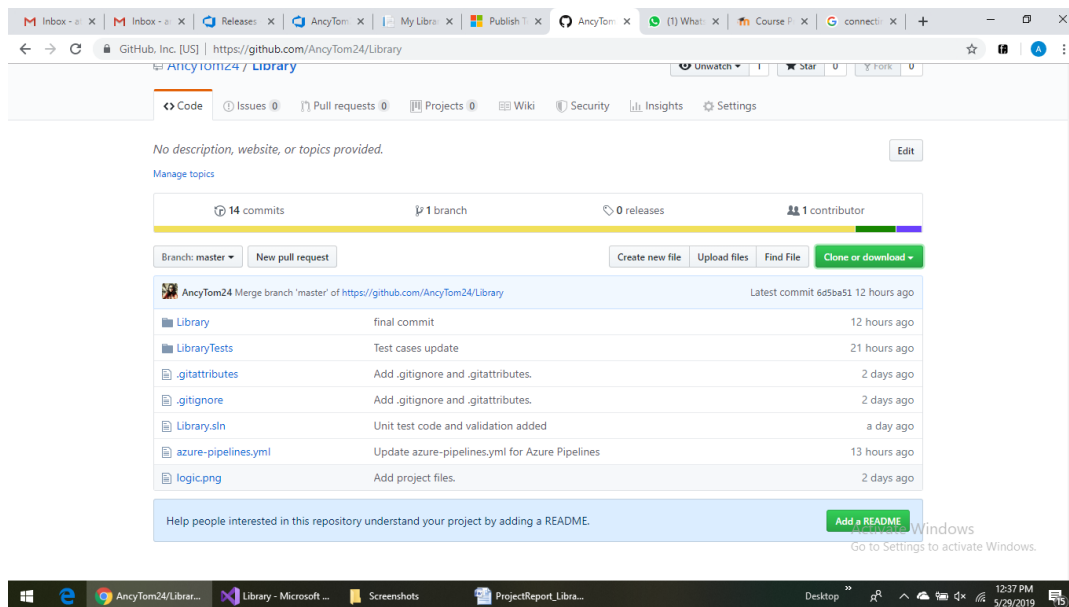
GitHub is a hosting service for version control using Git. It offers all of the distributed version control and source code management functionality of Git as well as adding its own features [1].

### Creating a new repository in GitHub

- Sign in to GitHub account
- Select Add Repo
- Enter desired name
- Click create repository button.
- My repo url : <https://github.com/AncyTom24/Library.git>

### Connecting code from visual studio 2019 to GitHub

- Create a project in vs 2019
- View -> Team Explorer -> Home
- Select Sync menu from team explorer
- Select option to link to Git repo
- Signing to GitHub
- Add repository name
- Push code to git.
- Now, every time we have a change in code, we can push it to git.
- Before we start working on the code we should pull the latest code from git if more than one person is making changes to code.



## Azure DevOps

- Sign-in to azure devOps.
- Add a build pipeline.
- Select code source from GitHub.

- Select repository.
- Review pipeline YML, make necessary changes and run. – This was quite difficult step for me because I wasn't sure what should be added to the YML.
- Once it is successfully run, a build pipeline is created.
- Now, we need to create a release pipeline.
  - Sign-in to portal.azure.com.
  - Subscribe to azure to create a resource.
  - Create resource.
  - Get free trial subscription key.
- Go to release tab in azure DevOps.
- Select new release pipeline.
- Select template – Azure app service deployment.
- Select our subscription and resource name in the form.
- Fill out other details like artifact configuration path.
- Save -> Create release.
- Select release – deploy – Success/Fail.
- If failed, check logs and correct errors and deploy again.

The screenshot displays the Azure DevOps web portal. The left sidebar shows the navigation menu with 'Builds' selected. The main area shows the 'AncyTom24.Library' build pipeline history. The table lists several builds, all of which are successful (indicated by green checkmarks).

Commit	Build #
Merge branch 'master' of https://github.com/AncyTom24/...	20190529.3
Update azure-pipelines.yml for Azure Pipelines Manual build for Ancy Tom	20190529.2
Update azure-pipelines.yml for Azure Pipelines CI build for AncyTom24	20190529.1
Update azure-pipelines.yml for Azure Pipelines Manual build for Ancy Tom	20190528.6
Update azure-pipelines.yml for Azure Pipelines CI build for AncyTom24	20190528.5
Update azure-pipelines.yml for Azure Pipelines CI build for AncyTom24	20190528.3
Update azure-pipelines.yml for Azure Pipelines Manual build for Ancy Tom	20190528.1
testing changes	20190528.0

An 'Activate Windows' watermark is visible in the bottom right corner of the interface.

**Azure DevOps** ancytom240801 / Library / Pipelines / Releases

Search all pipelines

**New release pipeline**

Releases Deployments Analytics

Releases	Created	Stages
Release-10 20190529.3 master	2019-05-29 1:33	Stage 1
Release-8 20190529.2 master	2019-05-28 23:31	Stage 1
Release-6 20190529.2 master	2019-05-28 23:22	Stage 1
Release-5 20190529.2 master	2019-05-28 23:20	Stage 1
Release-2 20190528.6 master	2019-05-28 18:49	Stage 1
Release-1	2019-05-28 18:36	Stage 1

Activate Windows  
Go to Settings to activate Windows.

**Azure DevOps** ancytom240801 / Library / Pipelines

New release pipeline > Release-10

Pipeline Variables History | + Deploy | Cancel | Refresh | Edit | ...

**Release**

Manually triggered  
by Ancy Tom  
5/29/2019, 1:33 AM

Artifacts

\_AncyTom24.Library  
20190529.3  
master

**Stages**

Stage 1  
Succeeded

1 warning  
on 5/29/2019, 1:34 AM

Activate Windows  
Go to Settings to activate Windows.

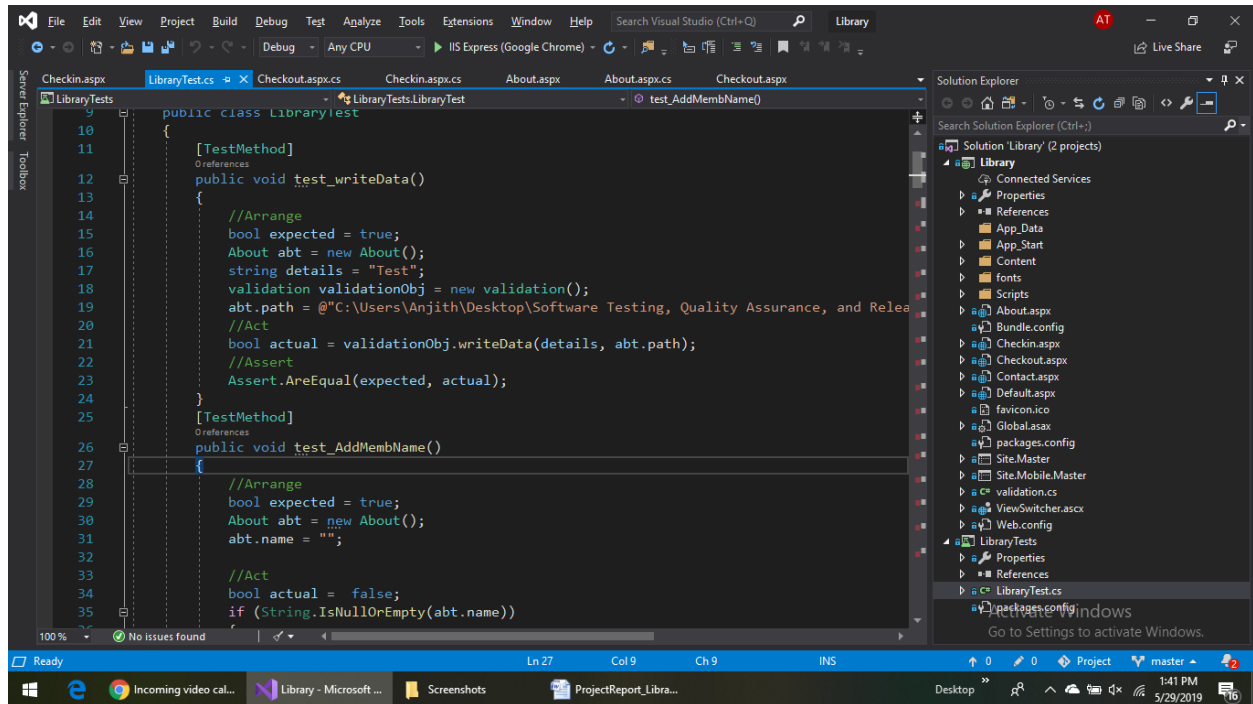
### *Publish to azure from vs*

- Build the solution.
- Select publish from context menu.
- Add azure account to vs.
- Select configuration settings and click publish.
- Published URL: <http://librarycheckincheckout.azurewebsites.net/Checkout>.

## Testing

A testing project for .net framework is created in the same solution folder for unit testing the app. various test cases are:

- Required filed validation and testing
- Writing data to txt file checking



## Reference

[1]Wikipedia