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Version 2.0

# Support Document

**Team Name:** Super Ninja

**Team Number:** TA342

**Team Members:**

Ram Purmessur

Songnan Lin

Jizhou Wang

Lu Chen

## Version Changing History

| Version | Changing Description  |
|---------|---|
| 1.0     | Original version  |
| 1.1     | Modify the testing information part                                 |
| 1.2     | Update the Data looking after part, database uploading detail added |
| 1.3     | Privacy section added   |
| 1.4     | Backup section updated  |
| 1.5     | Change the sequence of different part                               |
| 2.0     | Data uploading section added, all parts are finished                |

# Table of Contents

|  |           |
|--|-----------|
| <b>1. The fundamentals of the proposed product .....</b>                                 | <b>1</b>  |
| <b>2. Day to Day Support Activities .....</b>  | <b>2</b>  |
| <b>2.1 Front-End Support .....</b>   | <b>2</b>  |
| <b>2.2 Back-End Support .....</b>  | <b>2</b>  |
| <b>2.3 Database Support.....</b>   | <b>2</b>  |
| <b>3. Security and Privacy .....</b>   | <b>3</b>  |
| <b>3.1 Certificates.....</b>   | <b>3</b>  |
| <b>3.2 Privacy .....</b>   | <b>5</b>  |
| <b>4. System Backup and Recovery .....</b>   | <b>5</b>  |
| <b>4.1 Website Backup.....</b>   | <b>5</b>  |
| <b>4.2 Restore the Website .....</b>   | <b>6</b>  |
| <b>4.3 Restore the Database .....</b>  | <b>7</b>  |
| <b>5. Looking after data.....</b>  | <b>8</b>  |
| <b>5.1 Obesity and overweight Data for from Australian Government Open dataset .....</b> | <b>8</b>  |
| <b>5.2 Food Data from Australia Open Food Facts .....</b>                                | <b>8</b>  |
| <b>5.3 Information Data from Australian Government Open dataset.....</b>                 | <b>9</b>  |
| <b>5.4 data management .....</b>   | <b>10</b> |
| <b>5.5 Uploading Data into Database .....</b>  | <b>12</b> |
| <b>6. Skills Requirement.....</b>  | <b>13</b> |
| <b>7. Prepare for Future Site .....</b>  | <b>14</b> |
| <b>7.1 Setting up servers on Azure .....</b>   | <b>14</b> |
| <b>7.2 Required Hardware .....</b>   | <b>16</b> |
| <b>7.3 Required Software .....</b>   | <b>17</b> |
| <b>8. Changes in the future.....</b>   | <b>18</b> |
| <b>9. Testing Information .....</b>  | <b>18</b> |
| <b>9.1 Integrity Testing.....</b>  | <b>18</b> |
| <b>9.2 Backup and Recovery Testing .....</b>   | <b>18</b> |
| <b>9.3 Security Testing.....</b>   | <b>18</b> |
| <b>9.4 UX Testing .....</b>  | <b>18</b> |
| <b>9.5 Load Testing.....</b>   | <b>18</b> |
| <b>9.6 Testing Documents.....</b>  | <b>19</b> |



## 1. The fundamentals of the proposed product

The project of our team Super-ninja focus on high sugar intake and aims to help the parents with obesity kids from 5-10 in Australia. The data shows that one in four kids is overweight in Australia. To help these kids and their parent to be more conscious of their children's health, the solution is a website for parents who have obesity kids to track their children's daily sugar intake and plan some activities for their children.

The website includes sugar calculator function to assist parents know the sugar level of different desserts or drinks. Users can select the items and know how much sugar their children have consumed. They can also track the sugar intake to better plan and control the sugar level in the future. Besides, the website also provides the function of planning the activities. Parents can search the nearby parks or playgrounds and select the date and time for their kids to do activities. The website contains the information function of high sugar intake consequences. Users will know the diseases of high sugar intake, and they can also know the information of healthy food recipes.

The link of the website is <https://sugarbattle.tk/> , and users can visit through the link. To further understand this website, the product video can help to get more ideas. The product video can be found through the YouTube channel, and the link for the product video is <https://youtu.be/FGBrTP4hiZM>.



## **2. Day to Day Support Activities**

### **2.1 Front-End Support**

The website is hosted on the Azure Cloud Server, which would allow users to view the webpage according to the URL 'sugarbattle.tk'. During the time, the feedbacks from users should be collected to realize all possible bugs or issues to be addressed for the future. Technique team could timely fix all issues to cater for users' requirements when receiving some issues. The support team need to communicate with each other to carry out a most suitable solution.

Every time after the application is modified, the team needs to push the code to the master of remote repository to make a sound backend in case of the inevitable future attacks.

### **2.2 Back-End Support**

In terms of the back-end of the website, it uses Azure Cloud Server to be the host with some resource groups. Because the account on the Azure Cloud Server need to be charged for the URL provided, it is necessary for support team to check the cloud every week to see whether the account could afford the website operation.

The test on cloud server virtual machine also requires weekly testing in order to ensure the cloud machine would not break out and with any latency.

### **2.3 Database Support**

The database of the website is hosted on the Azure Cloud Server as well, using SQL server database. It is crucial for support team to know that the data in the database include all users' personal data including account information, daily food plan as well as travel plan, so the operation of the database required to run smoothly and concisely without any latency.

The backend of the database is also another important issue for support team to know because it is inevitable that the database would be attacked by outside. They need to take such situation under control so that the daily operation of the website would not be impacted if the database encounters attacks. The weekly backend could be held at every weekend.



### 3. Security and Privacy

#### 3.1 Certificates

The website uses a valid SSL certificates to encrypt the website and protect all sensitive traffic which include users' sign in and sign up, users' planning for activities, users' sugar calculation result and users' calculation history. The tool used to manage the certificates is Internet Information services (IIS 10) because Windows system based server is utilized to operate the whole website.

The certificates used in the system will expires every year. Ways to renew the certificate is showing as the following steps:

- 1) Install IIS service manager on the server machine.
- 2) Download the Letsencrypt SSL certificate generating tool '**letsencrypt-win-simple**'
- 3) Unzip the file and use command line to enter the directory of the file
- 4) Running command `letsencrypt.exe --san` (shown as below)

```
C:\Windows\system32>cd C:\Program Files\letsencrypt-win-simple.U1.9.1
C:\Program Files\letsencrypt-win-simple.U1.9.1>letsencrypt.exe --san
Let's Encrypt (Simple Windows ACME Client)
Renewal Period: 60
Certificate Store: WebHosting
ACME Server: https://acme-v01.api.letsencrypt.org/
```

Figure 1

- 5) Option to renew the certificate, choose the site number and then enter 'M' to get a SSL certificate.

```
Scanning IIS Sites
2: SAN - IIS [redacted]
3: SAN - IIS [redacted]
4: SAN - IIS [redacted]
5: SAN - IIS [redacted]
M: Generate a certificate via WebDav and install it manually.
S: Generate a single San certificate for multiple sites.
F: Generate a certificate via FTP/ FTPS and install it manually.
M: Generate a certificate manually.
A: Get certificates for all hosts
Q: Quit
Which host do you want to get a certificate for: _
```

Figure 2

- 6) After that, use the IIS 10 and enter the 'server certificate' options and certificate will input to the IIS automatically:

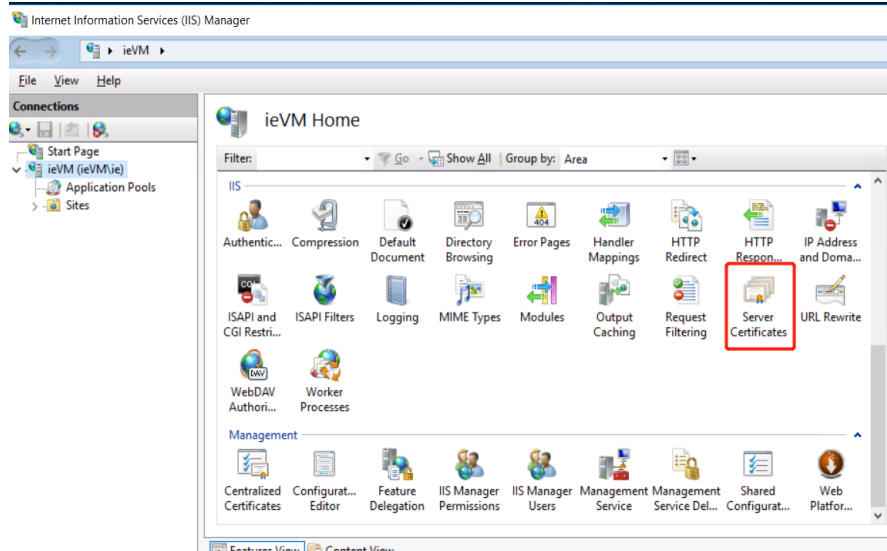


Figure 3

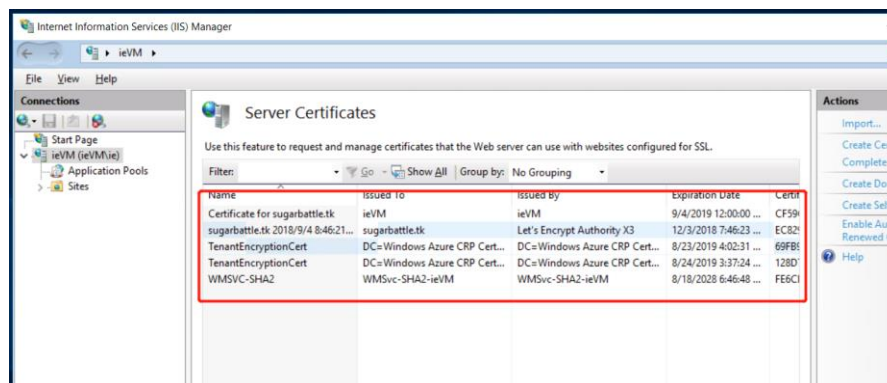


Figure 4

- 7) User can also import the certificate manually by using the IIS Manager. Click on 'import' button and then select any SSL document that need to be import, click 'OK' to finish:

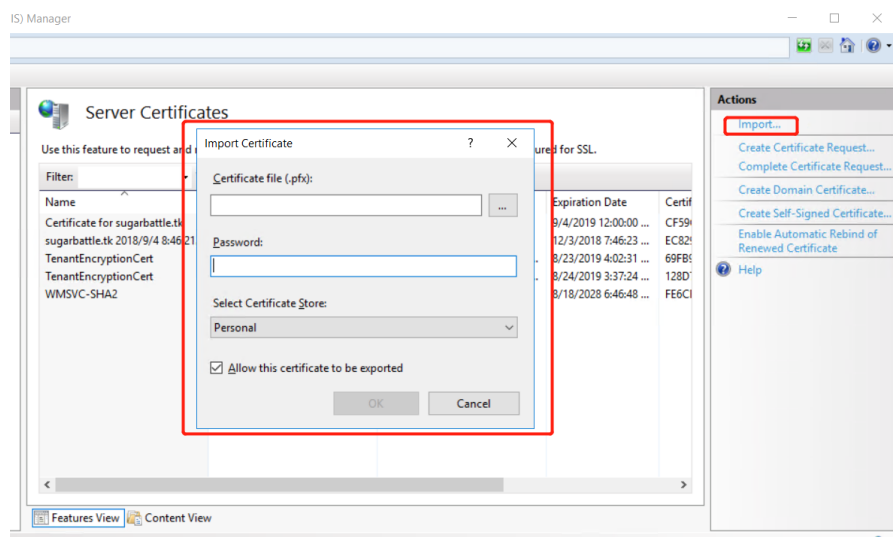


Figure 5



## 3.2 Privacy

Users can create account and sign in to our website. Although our website will not ask users to input personal information into the system, we still recommend that users should keep their account privately. In addition, administrators should also keep their accounts for the cloud server, virtual machine and database secure. No one except the future runner or administrator can keep the information of those accounts.

## 4. System Backup and Recovery

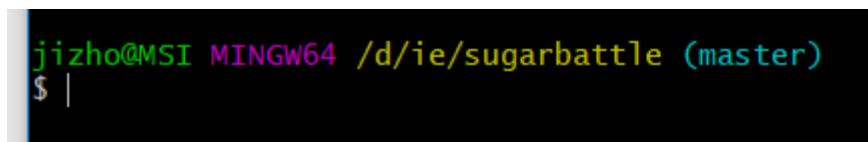
### 4.1 Website Backup

The application should be regularly backup to the remote repository. The remote one the application uses is Bitbucket with the name of repository of 'sugarbattlereq'.

The backup warehouse link is: <https://bitbucket.org/jwan0061/sugarbattlereq>

The following steps will show how to back up the system:

- 1) Initiate a local repository by using git init command  
→ git init



```
jizho@MSI MINGW64 /d/ie/sugarbattle (master)
$ |
```

Figure 6

- 2) Clone the remote repository to the local repository with the corresponding command  
→ git clone https://jwan0061@bitbucket.org/jwan0061/sugarbattlereq.git
- 3) Add all code files in the local file to the queue which need to be submitted

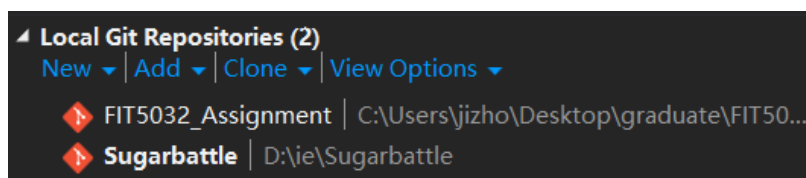


Figure 7

- 4) Commit all changes to the files with readable comments



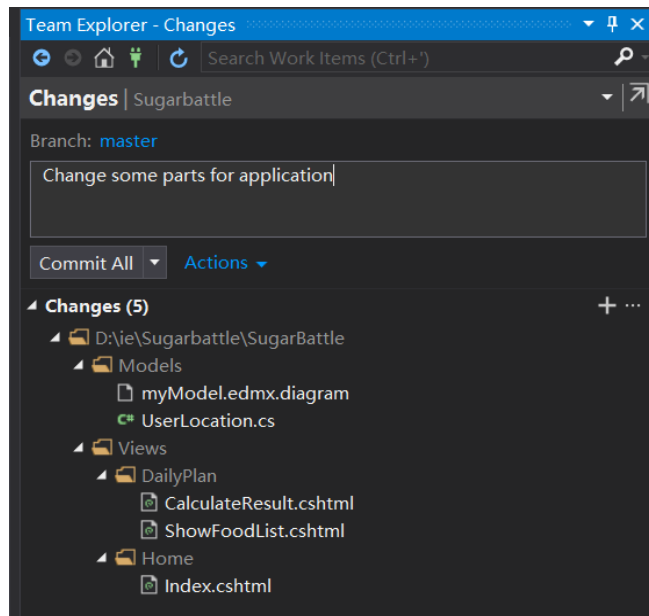


Figure 8

5) Push the latest version of the application codes from the Visual Studio IDE

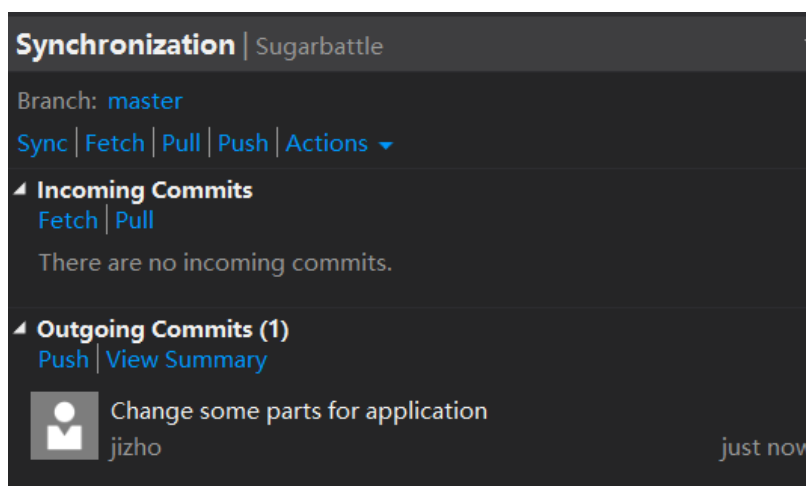


Figure 9

If the Azure cloud application could not work well in the current version which contains problems hard to deal with. It is better to clone earlier version of the application in the remote repository using clone command.

## 4.2 Restore the Website

When there are security issues on the website, the source code warehouse is a fast way to restore the website from errors or problems. The source code is put on git repository of bitbucket. It is inevitable that the errors would take place which is hard to deal with. Using early version of codes is efficient at that time, rather than find the error and fix it.



The steps of using backup source code is as follow:

- 1) Create a new folder in local computer with command to initiate a new local repository  
→ `git init`
- 2) Use git bash to go to the master of local repository which is connected to the remote repository
- 3) Clone codes in remote repository to the local repository initiated before  
→ `git clone https://jwan0061@bitbucket.org/jwan0061/sugarbattlereq.git`
- 4) If it is not necessary to clone all codes from the remote repository, coders could only pull a part of branch  
→ `git pull`

### 4.3 Restore the Database

The database is hosted on the Azure Cloud Server. One method is that the support team just requires to restore the database server at the cloud when it encounters some inevitable issues.

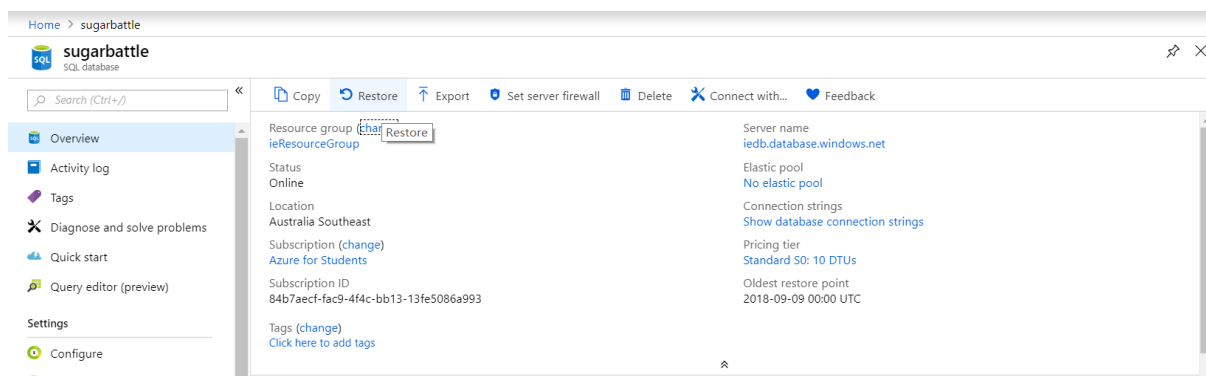


Figure 10

Another method is to use command line to restart database instance

→ `net start "SQL Server (sugarbattle)"`

or

→ `net start MSSQL$ sugarbattle`



## 5. Looking after data

This section will describe the ways of looking after the system’s data.

### 5.1 Obesity and overweight Data for from Australian Government Open dataset

The first data used by the website is the open data of proportion of obese or overweight children in various age groups in the year of 2014 and 2015 in Australia. The data raised public concerns of obesity and overweight on children.

The data is from Australian Open dataset whose URL is:

<https://ncci.canceraustralia.gov.au/prevention/overweight-and-obesity/overweight-and-obesity-children-and-young-people>.

The original data is shown as the figure 13 below and these data is not acceptable for the website and the ‘SuperNinja’ team did data cleaning and the cleaned data file which shown as figure 14 are ready to be used. Only the rate for overweight or obese children (girls and boys) are left and other data is removed from the document manually.

| Category | Males | Males Confidence Interval (low) | Males Confidence Interval (high) | Females | Females Confidence Interval (low) | Females Confidence Interval (high) | Persons | Persons Confidence Interval (low) | Persons Confidence Interval (high) |
|----------|-------|---------------------------------|----------------------------------|---------|-----------------------------------|------------------------------------|---------|-----------------------------------|------------------------------------|
| 02-Apr   | 14.20 | 10.10                           | 18.30                            | 8.70    | 5.50                              | 11.90                              | 11.30   | 8.70                              | 13.90                              |
| 05-Jul   | 15.80 | 10.70                           | 20.90                            | 13.60   | 9.00                              | 18.20                              | 14.60   | 11.50                             | 17.70                              |
| 08-Nov   | 20.60 | 15.40                           | 25.80                            | 21.40   | 14.90                             | 27.90                              | 21.00   | 17.20                             | 24.80                              |
| Dec-15   | 23.30 | 16.30                           | 30.30                            | 18.80   | 13.20                             | 24.40                              | 21.20   | 16.90                             | 25.50                              |
| 16-17    | 29.40 | 22.10                           | 36.70                            | 17.70   | 11.30                             | 24.10                              | 24.70   | 19.60                             | 29.80                              |
| Total    | 20.40 | 18.20                           | 22.60                            | 16.40   | 14.20                             | 18.60                              | 18.40   | 16.70                             | 20.10                              |

Attribution: ©2018 Cancer Australia - <https://ncci.canceraustralia.gov.au>

Figure 11

|   | A               | B      | C       |
|---|-----------------|--------|---------|
|   | Category        | Males  | Females |
| 2 | 2-4 years old   | 14.20% | 8.70%   |
| 3 | 5-7 years old   | 15.80% | 13.60%  |
| 4 | 8-11 years old  | 20.60% | 21.40%  |
| 5 | 12-15 years old | 23.30% | 18.80%  |
| 6 | 16-17 years old | 29.40% | 17.70%  |
| 7 | Total           | 20.40% | 16.40%  |

Figure 12

### 5.2 Food Data from Australia Open Food Facts

The second open data are retrieved from Australia Open Food facts:

[https://au.openfoodfacts.org/cgi/search.pl?search\\_terms=&search\\_simple=1&action=process](https://au.openfoodfacts.org/cgi/search.pl?search_terms=&search_simple=1&action=process)

The dataset contains all possible nutrition within products especially added sugar and calorie. The original SCV file is very huge and not accessible (Figure 15). The Working Sugar calculator on our website is based on the food open dataset, therefore, the original food data file needs to be cleaned. Our team removed the redundant columns in the file and manually reorganized the data. Only essential columns are left in the cleaned file (seen as figure 116) and the file will be directly converted to SQL file and input into the database.



| Column1  | Column2  | Column3  |
|--|--|--|
| codeurcfrcreated_last_modified_tproduct_namegeneric_namequantitypackagingpac                   |  |  |
| 8809111630258https://au.openfoodfacts.org/product/8809111630258foodorigins1435145              | en:indiaunknownunknown:peach-juice-drinkhttps://static.openfoodfacts.org/images/pr |  |
| 9300675031301https://au.openfoodfacts.org/product/9300675031301openfoodfacts-cont:Canaluminium |  | canCoca-ColaCoca-colaDiet cola soft drinken:beverages                        |
| 9435185944009https://au.openfoodfacts.org/product/9435185944009foodorigins1449125              | Metal  | aluminiumcanned  |
| 90415845https://au.openfoodfacts.org/product/90415845foodorigins148232951484614                | Carbonated drinks  | Sodas  |
| 8002270296505https://au.openfoodfacts.org/product/8002270296505foodorigins1449047              | Plasticcanned  | plastic:San: Pellegrinosan-pellegrinoSoft Drinks                             |
| 9331200430535https://au.openfoodfacts.org/product/9331200430535foodorigins1452856              | en:beveragesen:beverages   | en:sugared-beverages   |
| 9326720001068https://au.openfoodfacts.org/product/9326720001068foodorigins1444725              | Imported:Unknownaustralia  | imported-unknownAustraliaaustraliaNSW  |
| 4902179015730https://au.openfoodfacts.org/product/4902179015730foodorigins1462520              | NSw  | AustraliaDaisoAustraliaunknownunknown:fruit-drinkhttps://static.openfoodf    |
| 0025616102504https://au.openfoodfacts.org/product/0025616102504foodorigins1425721              | King:Car:Food:Industrial:Co:mr-brown   | king-car-food-industrial-coBeverages   |
| 9300675042307https://au.openfoodfacts.org/product/9300675042307openfoodfacts-cont              |  |  |
| 9300617010388https://au.openfoodfacts.org/product/9300617010388openfoodfacts-cont              |  |  |
| 9312937129619https://au.openfoodfacts.org/product/9312937129619foodorigins1434444              | Tetra:Pak:carton   | tetra-pakThe Berry Companythe-berry-companyUnited Kingdom                    |
| 9310092000422https://au.openfoodfacts.org/product/9310092000422foodorigins1465530              | en:plant-based-beverages   | en:plant-based-beverages   |
| 9310232954837https://au.openfoodfacts.org/product/9310232954837jhunter143860076                | Dairies  | Dairy drinks   |
| 9421903599155https://au.openfoodfacts.org/product/9421903599155foodorigins1439964              |  |  |
| 9310036047728https://au.openfoodfacts.org/product/9310036047728jhunter143778867                | Victoria   | Australia7-ElevenAustralia_milk_   |
| 0080687350506https://au.openfoodfacts.org/product/0080687350506foodorigins1439307              |  |  |
| 9300675033848https://au.openfoodfacts.org/product/9300675033848foodorigins1496382              | Aluminiumcan   | aluminiumCoca-ColaCoca-colaBeverages   |
| 22000217https://au.openfoodfacts.org/product/22000217foodorigins14511008061451466              | Aldiregal  | aldiCola   |
| 26130934https://au.openfoodfacts.org/product/26130934foodorigins1466675121467245               | Bottleplastic  | bottleRegal Soft Drink Co  |
| 9310645110936https://au.openfoodfacts.org/product/9310645110936foodorigins1461035              | Plasticbottle  | plastic:ColescolesAustraliaunknownunknownhttps://static.openfoodfacts.org/in |
| 930062408231https://au.openfoodfacts.org/product/930062408231jhunter143885718                  | cannedaluminium  | canned:Kirkskirks-Beverages  |
| 9310232958279https://au.openfoodfacts.org/product/9310232958279lockwerx1517599                 | Bottleplastic  | bottleDareDareBeverages  |

Figure 13

|    | A       | B                                 | C             | D         | E                             |
|----|---------|-----------------------------------|---------------|-----------|-------------------------------|
| 1  | Food_ID | Food_Name                         | Food_Quantity | Food_Type | Sugar_Level (g / 100 g or ml) |
| 2  | 101     | Blue Ribbon Vanilla 2L            | 2000          | 1         | 19                            |
| 3  | 102     | Halo Top Chocolate                | 473           | 1         | 7.15                          |
| 4  | 103     | Helado Calippo 525ml              | 525           | 1         | 17                            |
| 5  | 104     | Glace-Ben&Jerry 425g              | 425           | 1         | 25                            |
| 6  | 105     | Sara Lee Vanilla 1L               | 1000          | 1         | 15.6                          |
| 7  | 106     | Paddle Pop 576mL                  | 576           | 1         | 10.9                          |
| 8  | 107     | Maxibon Vanilla Bar 105mL         | 105           | 1         | 27.5                          |
| 9  | 108     | Bulla Vanilla 2L                  | 2000          | 1         | 9.5                           |
| 10 | 109     | Peters Original 400mL             | 400           | 1         | 10                            |
| 11 | 110     | Bulla Yogurt 100mL                | 100           | 1         | 19.5                          |
| 12 | 111     | Bulla Creamy Classic 62g          | 62            | 1         | 17.3                          |
| 13 | 112     | Milo Ice Cream Tub 470mL          | 470           | 1         | 10.6                          |
| 14 | 113     | Connoisseur Cookies&Cream Tub 1L  | 1000          | 1         | 13.1                          |
| 15 | 114     | Magnum Almond Bar 95g             | 95            | 1         | 26.6                          |
| 16 | 115     | Cadbury Dairy Milk 500mL          | 500           | 1         | 23.1                          |
| 17 | 116     | Haagen Dazs Vanilla 106mL         | 106           | 1         | 17.1                          |
| 18 | 117     | Proud&Punch Berry Bar 72g         | 72            | 1         | 10.4                          |
| 19 | 118     | Baileys Chocolate Ice Cream 500mL | 500           | 1         | 18.5                          |
| 20 | 119     | Skinny Cow Triple Choc 680mL      | 680           | 1         | 19.9                          |
| 21 | 120     | Golden Gaytime 78g                | 78            | 1         | 17                            |
| 22 | 121     | Frosty Fruit Tropical Bar 80g     | 80            | 1         | 16.7                          |
| 23 | 122     | Weis Mango Ice Cream Bar 80g      | 80            | 1         | 17.8                          |
| 24 | 123     | Bulla Fairy Bread Bar 68g         | 68            | 1         | 22.7                          |
| 25 | 124     | Arnotts Caramel Crown 470mL       | 470           | 1         | 16                            |
| 26 | 125     | Drumstick 6Classic Vanilla 1.5L   | 1500          | 1         | 11.9                          |

Figure 14

### 5.3 Information Data from Australian Government Open dataset

The BMI data as well as some general knowledge data within the system are retrieved from the Australian institute of Health and Welfare Open dataset:

<https://www.aihw.gov.au/reports/biomedical-risk-factors/risk-factors-to-health/contents/overweight-and-obesity>.

Those data are directly reference from the open data website and no addition actions need to be taken to deal with those data.

Classification of overweight and obesity for children and adolescents

| Age (years) | BMI equivalent to 25 in adult |         | BMI equivalent to 30 in adults |         |
|-------------|-------------------------------|---------|--------------------------------|---------|
|             | Males                         | Females | Males                          | Females |
| 2           | 18.41                         | 18.02   | 20.09                          | 19.81   |
| 2.5         | 18.13                         | 17.76   | 19.80                          | 19.55   |
| 3           | 17.89                         | 17.56   | 19.57                          | 19.36   |
| 3.5         | 17.69                         | 17.40   | 19.39                          | 19.23   |
| 4           | 17.55                         | 17.28   | 19.29                          | 19.15   |
| 4.5         | 17.47                         | 17.19   | 19.26                          | 19.12   |
| 5           | 17.42                         | 17.15   | 19.30                          | 19.17   |
| 5.5         | 17.45                         | 17.20   | 19.47                          | 19.34   |
| 6           | 17.55                         | 17.34   | 19.78                          | 19.65   |
| 6.5         | 17.71                         | 17.53   | 20.23                          | 20.08   |
| 7           | 17.92                         | 17.75   | 20.63                          | 20.51   |
| 7.5         | 18.16                         | 18.03   | 21.09                          | 21.01   |
| 8           | 18.44                         | 18.35   | 21.60                          | 21.57   |
| 8.5         | 18.76                         | 18.69   | 22.17                          | 22.18   |
| 9           | 19.10                         | 19.07   | 22.77                          | 22.81   |
| 9.5         | 19.46                         | 19.45   | 23.39                          | 23.46   |
| 10          | 19.84                         | 19.86   | 24.00                          | 24.11   |
| 10.5        | 20.20                         | 20.29   | 24.57                          | 24.77   |

Figure 15

### 5.4 data management

For those data team ‘SuperNinja’ used, the government open dataset website may update in the future. And for future runner of our website, the new data need to be update manually. The following steps will illustrate how to renew data and input into the database.

- 1) Assuming the data were updated on the Australia Open Food Fact dataset. Download the .CSV file from the website (Figure 18)

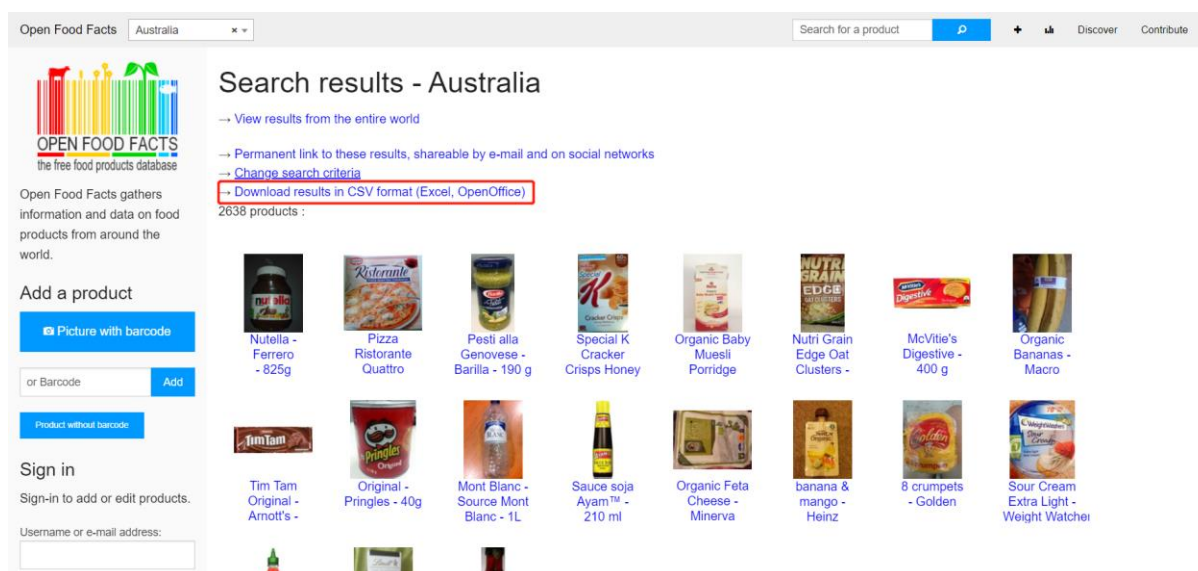


Figure 16

- 2) After downloading, open a new Excel file and go to ‘Data’ tab and click on ‘From Text’

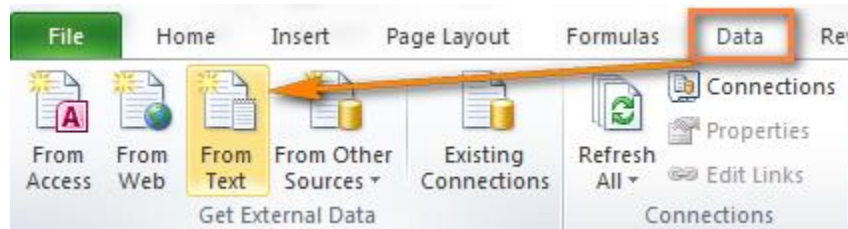


Figure 17

- 3) Import the SCV file which you just downloaded
- 4) Choose 'Delimited' and start import at row 1

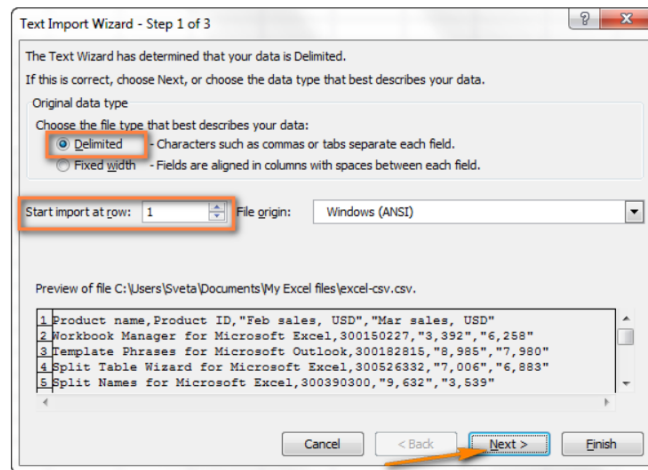


Figure 18

- 5) Select 'Coma' and 'Tab' on next page and then click on 'finish'

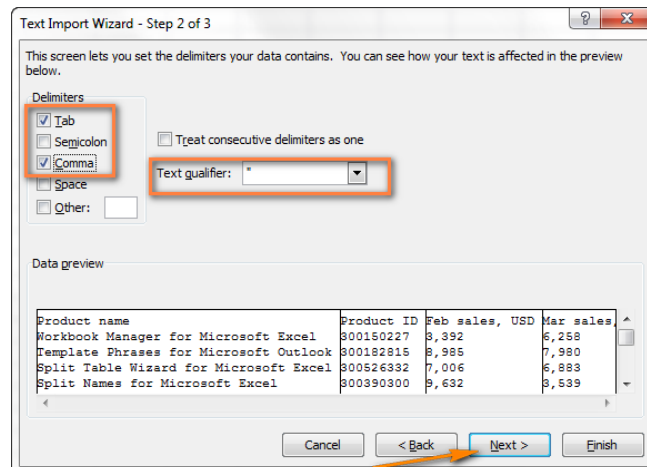


Figure 19

- 6) After that, delete the unnecessary data from the file and column which are 'Food Name', 'Food Quantity', 'Sugar level' should be left. 'Food Type' and 'Food ID' which are primary key and foreign key in the food table should be added manually.



| Food_ID | Food_Name                         | Food_Quantity | Food_Type | Sugar_Level (g / 100 g or ml) |
|---------|-----------------------------------|---------------|-----------|-------------------------------|
| 101     | Blue Ribbon Vanilla 2L            | 2000          | 1         | 19                            |
| 102     | Halo Top Chocolate                | 473           | 1         | 7.15                          |
| 103     | Helado Calippo 525ml              | 525           | 1         | 17                            |
| 104     | Glace-Ben&Jerry 425g              | 425           | 1         | 25                            |
| 105     | Sara Lee Vanilla 1L               | 1000          | 1         | 15.6                          |
| 106     | Paddle Pop 576mL                  | 576           | 1         | 10.9                          |
| 107     | Maxibon Vanilla Bar 105mL         | 105           | 1         | 27.5                          |
| 108     | Bulla Vanilla 2L                  | 2000          | 1         | 9.5                           |
| 109     | Peters Original 400mL             | 400           | 1         | 10                            |
| 110     | Bulla Yogurt 100mL                | 100           | 1         | 19.5                          |
| 111     | Bulla Creamy Classic 62g          | 62            | 1         | 17.3                          |
| 112     | Milo Ice Cream Tub 470mL          | 470           | 1         | 10.6                          |
| 113     | Connoisseur Cookies&Cream Tub 1L  | 1000          | 1         | 13.1                          |
| 114     | Magnum Almond Bar 95g             | 95            | 1         | 26.6                          |
| 115     | Cadbury Dairy Milk 500mL          | 500           | 1         | 23.1                          |
| 116     | Haagen Dazs Vanilla 106mL         | 106           | 1         | 17.1                          |
| 117     | Proud&Punch Berry Bar 72g         | 72            | 1         | 10.4                          |
| 118     | Baileys Chocolate Ice Cream 500mL | 500           | 1         | 18.5                          |
| 119     | Skinny Cow Triple Choc 680mL      | 680           | 1         | 19.9                          |
| 120     | Golden Gaytime 78g                | 78            | 1         | 17                            |
| 121     | Frosty Fruit Tropical Bar 80g     | 80            | 1         | 16.7                          |
| 122     | Weis Mango Ice Cream Bar 80g      | 80            | 1         | 17.8                          |
| 123     | Bulla Fairy Bread Bar 68g         | 68            | 1         | 22.7                          |
| 124     | Arnotts Caramel Crown 470mL       | 470           | 1         | 16                            |
| 125     | Drumstick 6Classic Vanilla 1.5L   | 1500          | 1         | 11.9                          |
| 126     | Paddle Pop Shaky Shake 150mL      | 150           | 1         | 11.1                          |

Figure 20

7) After that, the data is ready to input into the database.

### 5.5 Uploading Data into Database

The following steps shows how cleaned data are uploaded into the database:

- 1) Find the dataset and clean data in the excel file. In the excel file, the columns which are needed are remained while others would be removed. In addition, data in the same column would remain the same format.

| Food_ID | Food_Name                        | Food_Quantity | Food_Type | Sugar_Level (g / 100 g or ml) |
|---------|----------------------------------|---------------|-----------|-------------------------------|
| 101     | Blue Ribbon Vanilla 2L           | 2000          | 1         | 19                            |
| 102     | Halo Top Chocolate               | 473           | 1         | 7.15                          |
| 103     | Helado Calippo 525ml             | 525           | 1         | 17                            |
| 104     | Glace-Ben&Jerry 425g             | 425           | 1         | 25                            |
| 105     | Sara Lee Vanilla 1L              | 1000          | 1         | 15.6                          |
| 106     | Paddle Pop 576mL                 | 576           | 1         | 10.9                          |
| 107     | Maxibon Vanilla Bar 105mL        | 105           | 1         | 27.5                          |
| 108     | Bulla Vanilla 2L                 | 2000          | 1         | 9.5                           |
| 109     | Peters Original 400mL            | 400           | 1         | 10                            |
| 110     | Bulla Yogurt 100mL               | 100           | 1         | 19.5                          |
| 111     | Bulla Creamy Classic 62g         | 62            | 1         | 17.3                          |
| 112     | Milo Ice Cream Tub 470mL         | 470           | 1         | 10.6                          |
| 113     | Connoisseur Cookies&Cream Tub 1L | 1000          | 1         | 13.1                          |

Figure 21

- 2) The application use Microsoft Visual Studio as the IDE, so the excel needs to be imported to the SQL server. The service of SQL Manager with SQL server import and export data should be inserted initially.
- 3) Open Visual Studio and select SSIS Import and export wizard to start the service



Figure 22

- 4) Then choose the file which is required to be inserted

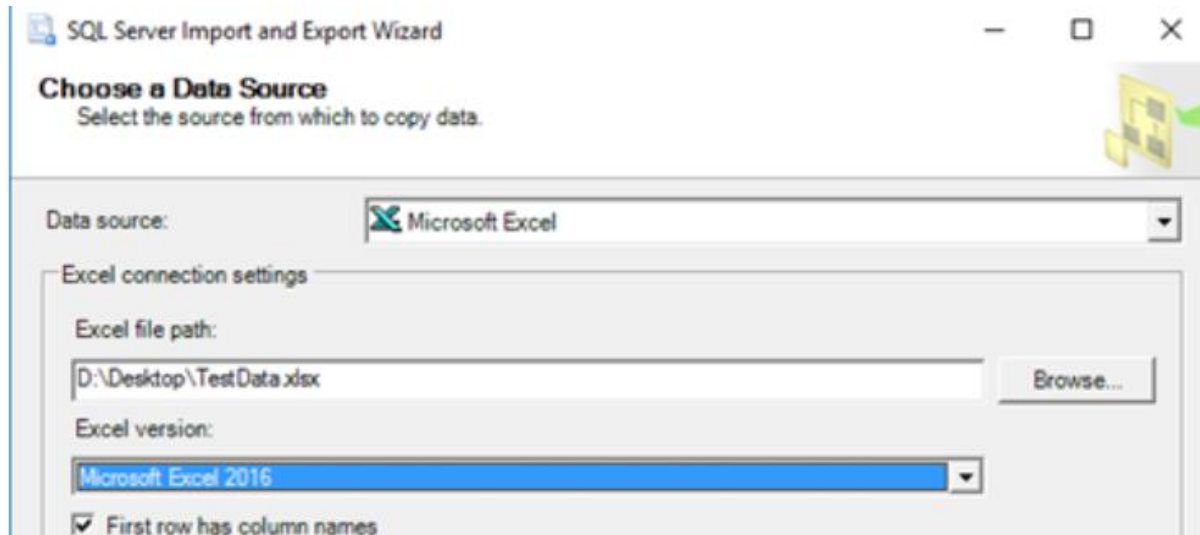


Figure 23

- 5) After above steps, the new tables would appear in the database and data are successfully import into the system

## 6. Skills Requirement

The website is produced by team 'SuperNinja' and the whole team are students from IT related background. People who will maintain and run our website should be administrators who have basic knowledge and they are not the people that responsible for developing the website further, so it is not necessary to provide formal training for the future runner. The only thing for future operator to do is to get familiar with the whole system (cloud server and database server) and to obtain some basic knowledge of SQL enquiry. The role for day to day runner is the same as administrator and no specially training required.





## 7. Prepare for Future Site

The following section will explain how to set up a future site and list of hardware as well as software.

### 7.1 Setting up servers on Azure

The whole system is setting up in Azure cloud server. The way to set up servers for the website is shown as the following steps:

- 1) Open the dashboard of Azure Cloud Server
- 2) Click on 'Create a resource'

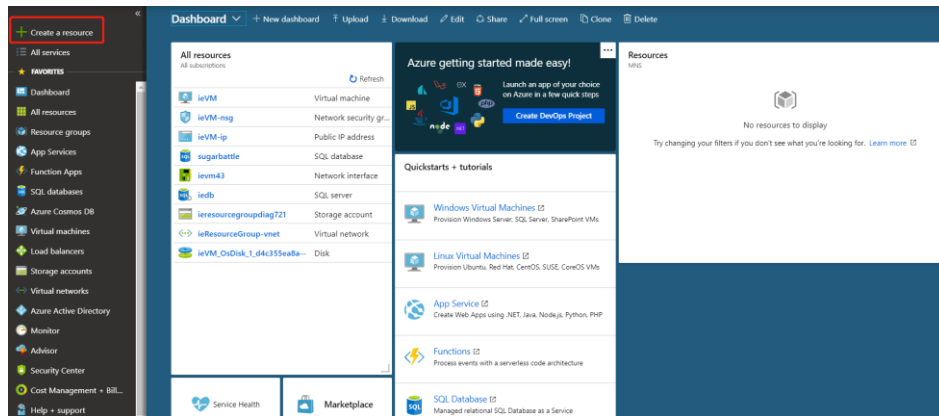


Figure 24

- 3) Following the detail steps provided by Azure: <https://docs.microsoft.com/en-us/azure/virtual-machines/windows/quick-create-portal>
- 4) After creating the resources group, go to 'Networking' tab of the Virtual servers, and open port 80, 443, 3389 and 8172. (80 and 443 for http and https, 3389 for remote desk visiting and 8172 for website publishing)

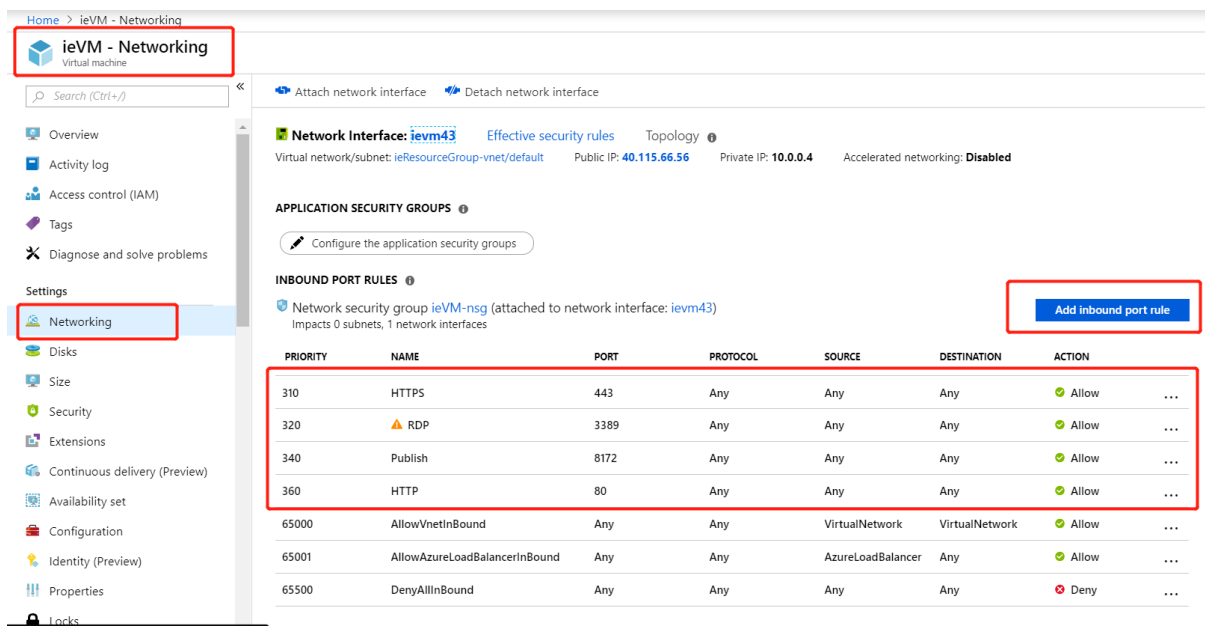


Figure 25

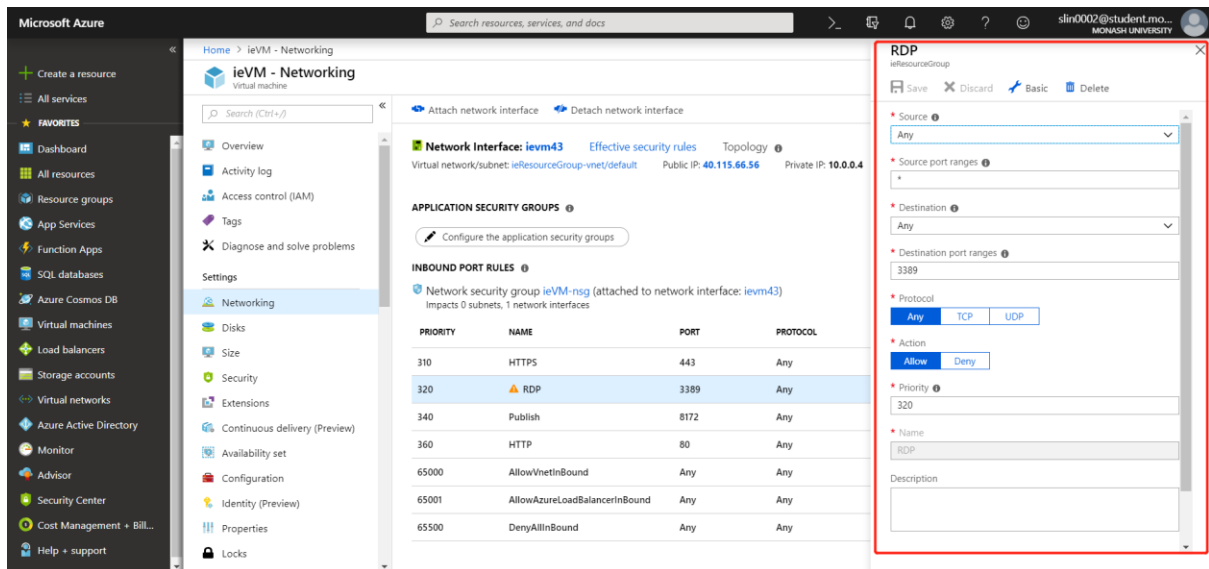


Figure 26

- 5) Clicking on 'connect' button on the 'overview' tab to download Remote desktop file for setting up connection.
- 6) Remotely login to the virtual machine desktop, click on Windows icon and then choose 'Server Manager'

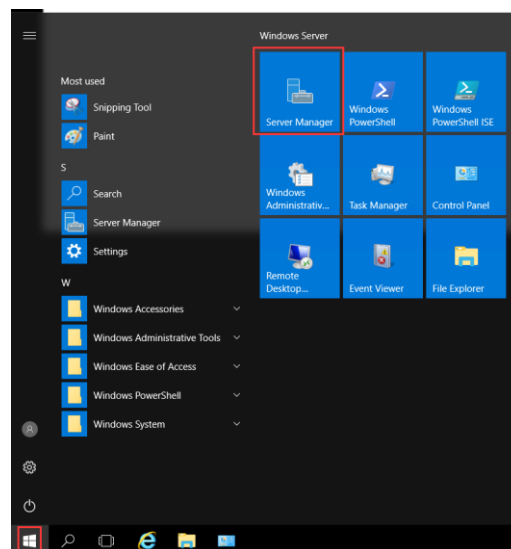


Figure 27

- 7) Choose 'Add roles and features' to add IIS server (For hosting Asp.net)

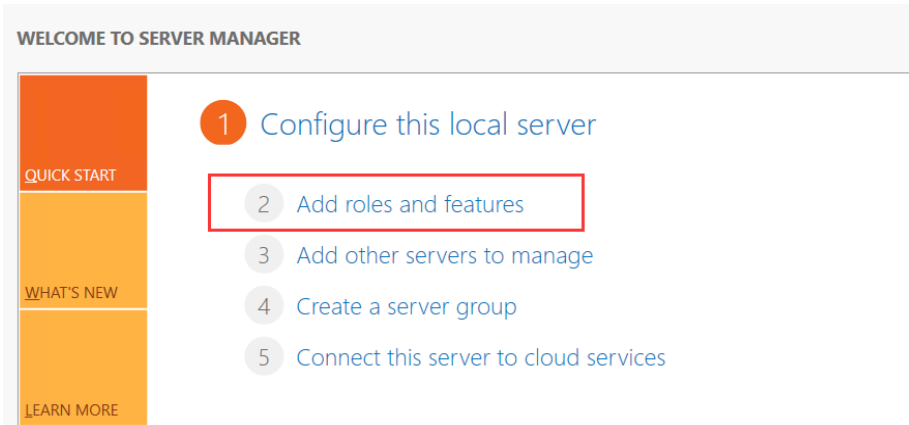


Figure 28

- 8) Go default and then install until finished.
- 9) Open 'Web Platform Installer', search for 'Web deploy' keyword and click on 'Add' for Web Deploy 3.6 option. And install the application.

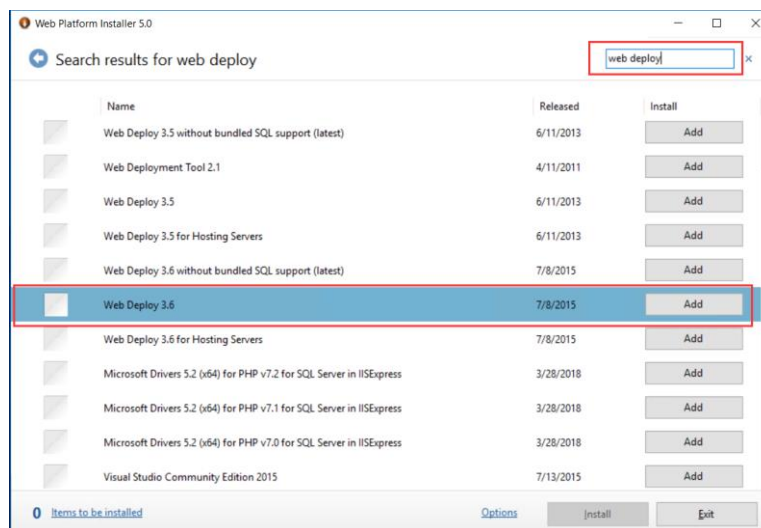


Figure 29

- 10) Wait until install is finished.
- 11) After that, all servers' setting up is finished.

## 7.2 Required Hardware

This part will state the computer hardware requirement on which the software is hosted. The server is configured on the Azure cloud server, but it is also feasible to configure a server on the local like most large companies do. The computer hardware should at least satisfy the requirement shown on the table below, otherwise it could have a compatible issue or running issue on the server.



| Hardware      | Requirement                                   |
|---------------|---|
| CPU           | 1 Intel(R) Xeon(R) CPU core @2.30 or 2.40 GHz |
| Installed RAM | 2.0 GB  |
| System Type   | 32-bit or 64-bit                              |
| Storage       | 128GB   |
| NIC           | 100M  |
| Opening Port  | 3389, 80, 443                                 |

### 7.3 Required Software

Support software are software that required to be installed on the computer or servers which will ensure the website running correctly. Support software for maintaining and operating the system are listed below:

| Package Name                 | Usage                        |
|------------------------------|------------------------------|
| Windows                      | Operating System             |
| Apache                       | Web Server                   |
| Visual Studio                | Development IDE for website  |
| SQL Server                   | Database Engine              |
| SQL Server Management Studio | Database Administration GUI  |
| C#                           | Web Programming Language     |
| Microsoft Azure              | Cloud Server                 |
| Bitbucket                    | Version Control Cloud Server |
| Git                          | Version Control              |
| Asp.net MVC                  | Core Web Application         |
| RDP remote desktop           | Remote desktop visiting tool |



## 8. Changes in the future

In terms of future changes of the website. The first issue is the database structure because there are still some drawbacks for the database design. For example, there is the table called temp food gain which is used to store food information for temp users without login. It will encounter the problem if the number of browsers increase to a huge number. Sessions and cookies should be more suitable for such issues.

Another necessary change is to the statics files including JavaScript, CSS and html. Due to the limitation of the number of developers, the files of static files do not be structured formally. For instance, there are a lot of inserted CSS and JavaScript codes inside html files. It is better if those codes could be separated in the future.

The application structure is using .Net MVC, which requires developer to get a good command of such knowledge. In addition, the programming language is C# so that developers require to possess a deep understanding of object-oriented programming language.

## 9. Testing Information

### 9.1 Integrity Testing

Integrity testing has been done by the 'SuperNinja' team. All function of the website has been tested and all the test pass the testing plan. Testing contents are: the accessibility of the website, the usability of the sugar calculator, the usability of the map function, the usability of the sign in and sign up function, the usability of the recipe function, the usability of the tracking function.

### 9.2 Backup and Recovery Testing

The backup testing is done by the developing expert of the 'SuperNinja' team. The website as well as servers can successfully recover from errors and issues.

### 9.3 Security Testing

Security testing is running by the security expert within the 'SuperNinja' team. SQL injection, Cross site scripting and communication channel scanning have been tested to ensure the website is secure. The result showing that the website is getting rid of those security issues.

### 9.4 UX Testing

User experiences testing is running by potential users and by 'SuperNinja' team. Testing. All testers are satisfying with the website's user interface.

### 9.5 Load Testing

Load testing is operated by 'SuperNinja' team to test the website's capacity of handling



stress. The testing schedule is to increase the threads of visiting the website simultaneously until finding the limitation of the website. When the number simultaneous threads reach around 2500 (shown as figure 2), the website will become inaccessible and 404 page will show up.

## 9.6 Testing Documents

All testing files are in the form of .PDF and are allocated in 'Testing Detail' folder. Testing files include: 'Integrity Testing', 'Backup and Recovery Testing', 'Security Testing', 'UX Testing', 'Load Testing'.



### Testing Detail

|                                 |                  |                   |        |
|---------------------------------|------------------|-------------------|--------|
| Backup and Recovery Testing.pdf | 2018/10/16 20:59 | Adobe Acrobat ... | 84 KB  |
| Intergrity Testing.pdf          | 2018/10/16 20:57 | Adobe Acrobat ... | 112 KB |
| Load Testing.pdf                | 2018/10/16 21:12 | Adobe Acrobat ... | 190 KB |
| Security Testing.pdf            | 2018/10/16 21:04 | Adobe Acrobat ... | 84 KB  |
| UX Testing.pdf                  | 2018/10/16 21:06 | Adobe Acrobat ... | 88 KB  |