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Support Document

Team Name: Super Ninja Team Number: TA342

Team Members:

Ram Purmessur Songnan Lin Jizhou Wang Lu Chen

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

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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 <u>https://sugarbattle.tk/</u>, 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 <u>https://youtu.be/FGBrTP4hiZM.</u>



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.

Scar	nning IIS Sites
2:	SAN - IIS manual and a contract of the second
3:	SAN - IIS
4:	SAN - 115
5:	SAN - IIS
_	
	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
Whie	ch 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:

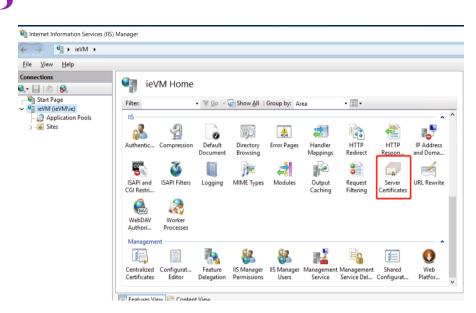


Figure 3

Internet Information Services (II	s) Manager				-
Eile View Help					
Connections	Server Certificat Use this feature to request and mark Filter:		red for SSL.		Actions Import Create Certifi Complete Ce
> -ia Sites	Name Certificate for sugarbattic.tk sugarbattic.tk 2018/9/4 8:46:21 TenantEncryptionCert TenantEncryptionCert WMSVC-SHA2	Issuea To ieVM sugarbattle.tk DC=Windows Azure CRP Cert DC=Windows Azure CRP Cert WMSvc-SHA2-ieVM		Certif CF59 EC82 69FBS 128D FE6CI	Create Domu Create Self-5 Enable Auton Renewed Ce

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:

Server Certifica	ites	_	Actions
Vise this feature to request and Filter. • Name Certificate for sugarbattle.b sugarbattle.tk 2018/9/4 84621 TenantEncyptionCert WMSVC-SHA2	Import Certificate ? × <u>C</u> ertificate file (,pfx): <u>Password: </u> <u>Select Certificate Store: Personal Allow this certificate to be exported Cancel </u>	ure if for SSL. Expiration Date p//2019 12:00:00 12/3/2018 7:46:23 p/23/2019 4:02:31 p/24/2019 3:37:24 p/18/2028 6:46:48	Centil CF94 CF94 CF95 EC22 DEADE CF95 EC22 CF95 CF95 CF95 CF95 CF95 CF95 CF95 CF95

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: <u>https://bitbucket.org/jwan0061/sugarbattlereq</u>

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

1) Initiate a local repository by using git init command

 \rightarrow git init





2) Clone the remote repository to the local repository with the corresponding command

 \rightarrow 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

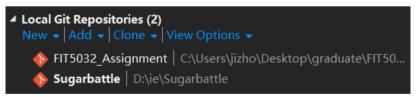
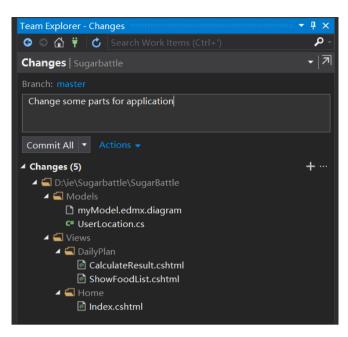


Figure 7

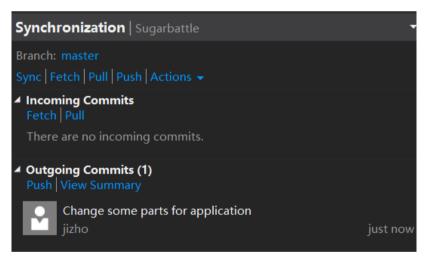
4) Commit all changes to the files with readable comments







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





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

 \rightarrow 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

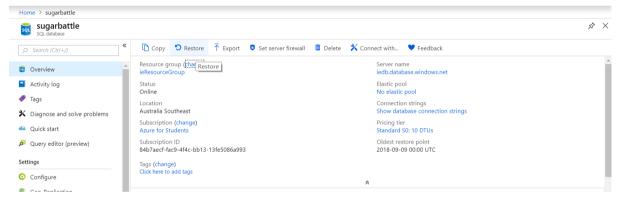
 \rightarrow git clone <u>https://jwan0061@bitbucket.org/jwan0061/sugarbattlereq.git</u>

4) If it is not necessary to clone all codes from the remote repository, coders could only pull a part of branch

 \rightarrow 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.





Another method is to use command line to restart database instance

```
\rightarrow net start "SQL Server (sugarbattle)"
```

or

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

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									

	Α	В	С
	Category	Males	Females
2	2-4 years old	14.20%	8.70%
1	5-7 years old	15.80%	13.60%
ŀ	8-11 years old	20.60%	21.40%
5	12-15 years old	23.30%	18.80%
5	16-17 years old	29.40%	17.70%
ſ	Total	20.40%	16.40%

Figure 11

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

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
codeurlcreatorcreated_tlast_modified_tproduct_namegeneric_namequantitypackagingpa	ĸ	
8809111630258https://au.openfoodfacts.org/product/8809111630258foodorigins143514	en:indiaunknownunknownen:peach-juice-drinkhttps://static.openfoodfacts.org/images/p	n
9300675031301https://au.openfoodfacts.org/product/9300675031301openfoodfacts-cor	t Canaluminium	canCoca-Colacoca-colaDiet cola soft drinken:beverages
8435185944009https://au.openfoodfacts.org/product/8435185944009foodorigins144912	5 Metal	aluminiumcanned
90415845https://au.openfoodfacts.org/product/90415845foodorigins1462328295146461	4 Carbonated drinks	Sodas
8002270296505https://au.openfoodfacts.org/product/8002270296505foodorigins144904	7 Plasticcanned	plasticSan Pellegrinosan-pellegrinoSoft Drinks
9331200430535https://au.openfoodfacts.org/product/9331200430535foodorigins145285	E en:beveragesen:beverages	en:sugared-beverages
9326720001068https://au.openfoodfacts.org/product/9326720001068foodorigins144472	Imported Unknownaustralia	imported-unknownAustraliaaustraliaNSW
4902179015730https://au.openfoodfacts.org/product/4902179015730foodorigins146252	(NSw	AustraliaDaisoAustraliaunknownunknownen:fruit-drinkhttps://static.openfoodf
0025616102504https://au.openfoodfacts.org/product/0025616102504foodorigins142572	1 King Car Food Industrial Co.mr-brown	king-car-food-industrial-coBeverages
9300675042307https://au.openfoodfacts.org/product/9300675042307openfoodfacts-cor	t	
9300617010388https://au.openfoodfacts.org/product/9300617010388openfoodfacts-corr	t	
9312937129619https://au.openfoodfacts.org/product/9312937129619foodorigins143444	E Tetra Pakcarton	tetra-pakThe Berry Companythe-berry-companyUnited Kingdom
9310092000422https://au.openfoodfacts.org/product/9310092000422foodorigins146563	5 en:beverages	en:plant-based-beverages
9310232954837https://au.openfoodfacts.org/product/9310232954837rjhunter143860076	1Dairies	Dairy drinks
9421903599155https://au.openfoodfacts.org/product/9421903599155foodorigins143996	4	
9310036047728https://au.openfoodfacts.org/product/9310036047728rjhunter143778867	2 Victoria	Australia7-ElevenAustralia_milk_
0080687350506https://au.openfoodfacts.org/product/0080687350506foodorigins143930	7	
9300675033848https://au.openfoodfacts.org/product/9300675033848foodorigins149638	2 Aluminiumcan	aluminiumCoca-Colacoca-colaBeverages
22000217https://au.openfoodfacts.org/product/22000217foodorigins1451100806145146	6 Aldiregal	aldiCola
26130934https://au.openfoodfacts.org/product/26130934foodorigins1466675712146724	§ Bottleplastic	bottleRegal Soft Drink Co
9310645110936https://au.openfoodfacts.org/product/9310645110936foodorigins146103	5 Plasticbottle	plasticColescolesAustraliaunknownunknownhttps://static.openfoodfacts.org/in
9300624008231https://au.openfoodfacts.org/product/9300624008231rjhunter143885718	€ cannedaluminium	cannedKirk'skirk-sBeverages
9310232958279https://au.openfoodfacts.org/product/9310232958279clockwerx1517599	3 Bottleplastic	bottleDaredareBeverages

Figure 13

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

Those data are directly reference from the open data website and no addiction 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	



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)

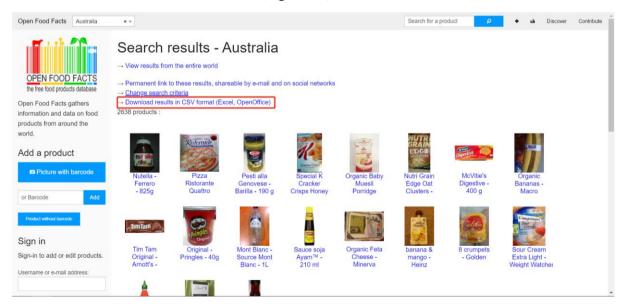


Figure 16

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



File	Но	me	Insert	Page Layout	Formulas	Data	Rei
From Access	From Web	From Text Get Ex	From Other Sources + ternal Data	Existing Connections	Refresh All *	Difference Connection Propertie Edit Link	:5

Figure 17

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

ext Import Wizard - Step 1 of 3	2	X
The Text Wizard has determined that your data is Delimited.		
If this is correct, choose Next, or choose the data type that best describes your data.		
Original data type		
Choose the file type that best describes your data: Onaracters such as commas or tabs separate each field.		
Fixed width - Fields are aligned in columns with spaces between each field.		
Start import at row: 1 File grigin: Windows (ANSI)		•
Preview of file C: \Users \Sveta \Documents \My Excel files \excel-csv.csv.		
1 Product name, Product ID, "Feb sales, USD", "Mar sales, USD"		^
2 Workbook Manager for Microsoft Excel, 300150227, "3, 392", "6, 258" 3 Template Phrases for Microsoft Outlook, 300182815, "8, 985", "7, 980"		
4 Split Table Wizard for Microsoft Excel, 300526332, "7,006", "6,883"		-
4 Split Table Wizard for Microsoft Excel, 300526332, "7,006", "6,883"		Þ
4 Split Table Wizard for Microsoft Excel, 300526332, "7,006", "6,883"	Fin	⊧ ish

Figure 18

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

ext Import Wizard - Step 2 of 3	8	X
This screen lets you set the delimiters your data contains. elow.	You can see how your text is affected in the preview	v
Delimiters Tab Sequence of the second seco	s one	
Template Phrases for Microsoft Outlook	Product ID Feb sales, USD Mar sales, 300150227 3,392 6,258 30012015 8,985 7,980 300526322 7,006 6,883 300390300 9,632 3,539	•
Cance	⊦ ≪Back Next > Einish	

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.



4	A	в	C C		E I I I I I I I I I I I I I I I I I I I
	Food_ID	Food_Name	Food_Quantity	Food_Type S	ugar_Level (g / 100 g or ml)
2	101	Blue Ribbon Vanilla 2L	2000	1	19
3	102	Halo Top Chocolate	473	1	7.1
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	15.0
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
4	113	Connoisseur Cookies&Cream Tub 1L	1000	1	13.1
15	114	Magnum Almond Bar 95g	95	1	26.6
16	115	Cadbury Diary Milk 500mL	500	1	23.1
17	116	Haagen Dazs Vanilla 106mL	106	1	17.1
8	117	Proud&Punch Berry Bar 72g	72	1	10.4
9	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
7	126	Paddle Pon 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		Sugar_Level (g / 100 g or ml)
101	Blue Ribbon Vanilla 2L	2000	1 000 1990	19
101	Halo Top Chocolate		1	7.15
102	Helado Calippo 525ml		1	17
104	Glace-Ben&Jerry 425g		1	25
105	Sara Lee Vanilla 1L		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

×



Project	Build	Debug	Team	Format	SSIS	Tools	Test
A New	SSIS Pa	kage		_			t
P. SSIS	Import a	and Export	Wizard				
Con	wert Dep	loyment N	lodel				

Figure 22

4) Then choose the file which is required to be inserted
SQL Server Import and Export Wizard –
Choose a Data Source Select the source from which to copy data.
Data source: Microsoft Excel
Excel connection settings
Excel file path: D:\Desktop\TestData.xlsx
Excel file path: D:\Desktop\TestData.xlsx
Excel version: Microsoft Excel 2016
First row has column names

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'

All services	All resources All subscriptions		Azure getting started made easy!	Resources	
		👌 Refresh	Launch an app of your choice		
Dashboard	ieVM	Virtual machine	on Azure in a few quick steps		
All resources	ieVM-nsg	Network security gr	nede 📷 🥐 Create DevOps Project	No resources to display	
Resource groups	ieVM-ip	Public IP address	nige at -	Try changing your filters if you don't see what you're looking for. Learn more	
App Services	5 sugarbattle	SQL database			
> Function Apps	ievm43	Network interface	Quickstarts + tutorials		
SQL databases	📷 iedb	SQL server			
Azure Cosmos DB	ieresourcegroupdiag721	Storage account	Windows Virtual Machines Ed Provision Windows Server, SQL Server, SharePoint VMs		
Virtual machines	🤲 ieResourceGroup-vnet	Virtual network	_		
Load balancers	😂 ieVM_OsDisk_1_d4c355ea8a-	- Disk	Linux Virtual Machines IZ Provision Ubuntus Red Hat. CentOS, SUSE, CoreOS VMs		
Storage accounts			Provision Ubuntu, Red Hat, CentOS, SUSE, CoreOS VMs		
Virtual networks					
Azure Active Directory			Create Web Apps using .NET, Java, Node,is, Python, PHP		
Monitor			-		
Advisor			Functions IZ		
Security Center		_	Process events with a serverless code architecture		



- 3) Following the detail steps provided by Azure: <u>https://docs.microsoft.com/en-us/azure/virtual-machines/windows/quick-create-portal</u>
- 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)

Home > ieVM - Networking								
ieVM - Networking								
	Attach netwo	ork interface 🛛 🏾 🥠 Detach network inter	rface					
Overview	🖥 Network In	terface: ievm43 Effective securit	ty rules Topolo	gy 🛛				
Activity log	Virtual network/si	ubnet: ieResourceGroup-vnet/default	Public IP: 40.115.66.5	6 Private IP: 10.0.0	.4 Accelerated netv	vorking: Disabled		
Access control (IAM)	APPLICATION SE							
🛷 Tags								
✗ Diagnose and solve problems	Configure	the application security groups						
Settings	INBOUND PORT							
🚇 Networking	Network security group ieVM-nsg (attached to network interface: ievm43) Impacts 0 subnets, 1 network interfaces							
🛢 Disks	PRIORITY	NAME	PORT	PROTOCOL	SOURCE	DESTINATION	ACTION	
🖳 Size	310	HTTPS	443	Any	Any	Any	Allow	
Security	320	A RDP	3389	Any	Any	Any	Allow	
Extensions	340	Publish	8172	Any	Any	Any	S Allow	
🐔 Continuous delivery (Preview)	360	НТТР	80	Any	Any	Any	S Allow	
Availability set								
🚔 Configuration	65000	AllowVnetInBound	Any	Any	VirtualNetwork	VirtualNetwork	Allow	
💲 Identity (Preview)	65001	AllowAzureLoadBalancerinBound	Any	Any	AzureLoadBalancer	Any	Allow	
Properties	65500	DenyAllinBound	Any	Any	Any	Any	😣 Deny	
A Locks								

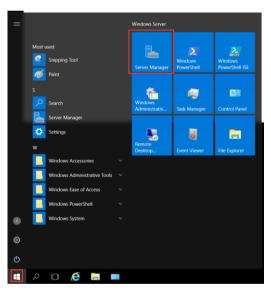
Figure 25



Microsoft Azure		, <i>P</i> Search r	esources, services, and docs		>_ 0	ୟି ପ୍ ଞି ? ୍ତ slin0002@student.mo Monash university
	Home > ieVM - Networking					RDP
+ Create a resource	ieVM - Networking					ieResourceGroup
E All services			rk interface 🛛 🍲 Detach network int			🕞 Save 🗶 Discard 🥕 Basic 🗴 Delete
+ FAVORITES	,O Search (Ctrl+/)	Attach netwo	ork interface 👎 Detach network int	erface		* Source 🛛
🛄 Dashboard	🔺 🖳 Overview 🌰	Network Int	terface: ievm43 Effective secur	ity rules Topolog	9y 0	Any
III resources	Activity log	Virtual network/su	bnet: ieResourceGroup-vnet/default	Public IP: 40.115.66.56	Private IP: 10.0.0.4	* Source port ranges 🕐
Resource groups	Access control (IAM)					
App Services	Tags	APPLICATION SE	CURITY GROUPS			* Destination 💿
Function Apps	X Diagnose and solve problems	🖌 Configure	the application security groups	* Destination port ranges 🙃		
SQL databases	Settings	INBOUND PORT RULES				3389
Azure Cosmos DB	A Networking		urity group ieVM-nsg (attached to r nets, 1 network interfaces	network interface: iev	m43)	* Protocol
💷 Virtual machines	S Disks					Any TCP UDP
- Load balancers	Size	PRIORITY	NAME	PORT	PROTOCOL	* Action
Storage accounts	 Security 	310	HTTPS	443	Any	Allow Deny
Virtual networks	Extensions	320	🛕 RDP	3389	Any	* Priority 🛛
Azure Active Directory		340	Publish	8172	Any	320
	G Continuous delivery (Preview)	360	нттр	80	Any	* Name
Monitor	Availability set	65000	AllowVnetinBound	Any	Any	RDP
Advisor	Configuration					Description
Security Center	💲 Identity (Preview)	65001	AllowAzureLoadBalancerInBound	Any	Any	
Oost Management + Bill	Properties	65500	DenyAllInBound	Any	Any	
Page Help + support	Locks					· · · ·

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'





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



WELCOME TO SERVE	R MANAGER
	1 Configure this local server
	2 Add roles and features
	3 Add other servers to manage
WHAT'S NEW	4 Create a server group
	5 Connect this server to cloud services
LEARN MORE	

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.

Sea	arch results for web deploy		web	deploy] ×
	Name	0	Released	Install	
	Web Deploy 3.5 without bundled SQL support (latest)	6	/11/2013	Add	
	Web Deployment Tool 2.1	4	/11/2011	Add	
	Web Deploy 3.5	6	/11/2013	Add	
	Web Deploy 3.5 for Hosting Servers	6	/11/2013	Add	
	Web Deploy 3.6 without bundled SQL support (latest)	7	/8/2015	Add	
1	Web Deploy 3.6	7.	//8/2015	Add	1
1	Web Deploy 3.6 for Hosting Servers	7.	/8/2015	Add	T
	Microsoft Drivers 5.2 (x64) for PHP v7.2 for SQL Server in IISExpress	3	/28/2018	Add	
	Microsoft Drivers 5.2 (x64) for PHP v7.1 for SQL Server in IISExpress	3	/28/2018	Add	
	Microsoft Drivers 5.2 (x64) for PHP v7.0 for SQL Server in IISExpress	3	/28/2018	Add	
	Visual Studio Community Edition 2015	7	//13/2015	Add	
0 Items	to be installed	Options	Install	Exit	

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 severs 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