Traceability

Diabetes Care

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Document History

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Table Content

Chapter One | Introduction

1.1. Purpose

Traceability refers to the ability of the system (iOS & web application) requirements back to stakeholders' rationales and forward to corresponding design artifacts, code, and test cases. The purpose of the traceability record document is to show the relationship between user requirement specification, system requirement specification, use case, activity diagram, user interface, sequence diagram and test cases.

1.2. Project Scope

"Diabetes Care" can help to control and follow the blood sugar level and get the recommend about the symptom, warning in each level of blood sugar from this application.

Diabetes Care is a Web application that can support all devices (desktops, tablets, and phones). "Diabetes Care" supports all devices are mean the web application can run on program web browser from desktops, tablets, and phones

The main feature of "Diabetes Care" are as follows:
- Authentication system.
- Account management.
- Nutrition management.
- Activity management.
- Activity plan and recommend system.
- Nutrition plan.
- Health monitor system.
- Behavior monitor system.

Chapter Two | Traceability Record Table

2.1. Table: URS-UC-SRS-AD-SD-UI

No.	URS	Description	UC	SRS	AD	SD	UI
1	URS-01	The user can log in to a web application by suing username and password	UC-01	SRS-01, SRS-02, SRS-03, SRS-04, SRS-05, SRS-06, SRS-07, SRS-08, SRS-09, SRS-10	AD-01	SD-02	UI-01
2	URS-02	The user can log out from a web application.	UC-02	SRS-11, SRS-12	AD-02	SD-03	UI-02
3	URS-03	The doctor and nurse can enter patient (username, password, name, age, gender, weight, height, diabetes type and date that start treatment) to the database server on a web application	UC-03	SRS-13, SRS-14, SRS-15, SRS-16, SRS-17, SRS-18, SRS-19, SRS-20, SRS-21, SRS-22 SRS-23, SRS-24, SRS-25, SRS-26, SRS-27, SRS-28, SRS-29, SRS-30, SRS-31, SRS-32 SRS-33, SRS-34, SRS-35, SRS-36, SRS-37	AD-03	SD-01	UI-03
4	URS-04	The doctor and nurse can access to patient information.	UC-04	SRS-38, SRS-39, SRS-40, SRS-41, SRS-42, SRS-43, SRS-44	AD-04		

5	URS-05	The patient can view information of his on profile page.	UC-05	SRS-45, SRS-46, SRS-47,	AD-05	SD-04	UI-04
6	URS-06	The patient can edit information on profile page.	UC-06	SRS-14, SRS-48, SRS-49, SRS-50, SRS-51, SRS-52, SRS-53	AD-06	SD-05	UI-05
7	URS-07	The patient can change the password for login.	UC-07	SRS-14, SRS-54, SRS-55, SRS-56, SRS-57, SRS-58, SRS-59 SRS-60	AD-07	SD-06	UI-06
8	URS-08	The admin can add nurse, doctor, and nutritionists account to the system on administrator page.	UC-08	SRS-14, SRS-61, SRS-62, SRS-63, SRS-64, SRS-65, SRS-66, SRS-67, SRS-68, SRS-69	AD-08	SD-13	UI-07. UI-08
9	URS-09	The admin can edit nurse, doctor, and nutritionists account on administrator page.	UC-09	SRS-14, SRS-64, SRS-65, SRS-70, SRS-71, SRS-72, SRS-73, SRS-74	AD-09	SD-14	UI-07. UI-08
10	URS-10	The admin can delete nurse, doctor, and nutritionists account from the system on administrator page.	UC-10	SRS-75, SRS-76, SRS-77	AD-10	SD-15	UI-07. UI-08
11	URS-11	The nutritionists can add food to the system on nutrition management page	UC-11	SRS-78, SRS-79, SRS-80, SRS-81, SRS-82, SRS-83. SRS-84, SRS-85, SRS-86	AD-11	SD-07	UI-09

12	URS-12	The nutritionists can edit food on nutrition management page.	UC-12	SRS-81, SRS-82, SRS-83, SRS-84, SRS-87, SRS-88. SRS-89, SRS-90, SRS-91	AD-12	SD-08	UI-10
13	URS-13	The nutritionists can delete food from the system on nutrition management page.	UC-13	SRS-75, SRS-92, SRS-93	AD-13	SD-09	UI-11
14	URS-14	The nurse and doctor can add the exercise recommend to the system on exercise management page.	UC-14	SRS-79. SRS-94, SRS-95, SRS-96	AD-14	SD-10	UI-13. UI-14
15	URS-15	The nurse and doctor can edit the exercise recommend on exercise management page.	UC-15	SRS-88. SRS-96, SRS-97, SRS-98	AD-15	SD-11	UI-13. UI-15
16	URS-16	The nurse and doctor can delete the exercise recommend from the system on exercise management page.	UC-16	SRS-75. SRS-97, SRS-98	AD-16	SD-12	UI-13
17	URS-17	The patient t can select the symptoms on health plan page.	UC-17	SRS-99. SRS-100, SRS-101	AD-17		UI-12
18	URS-18	The patient can get the suggestion about exercise from the system.	UC-18	SRS-102	AD-18		UI-12
19	URS-19	The patient can add food from the database to record in a health plan.	UC-19	SRS-103. SRS-104, SRS-105. SRS-106, SRS-107	AD-19	SD-16	UI-12
20	URS-20	The patient can view the total of glycemic index and calorie of food that selected in health plan.	UC-20	SRS-108, SRS-109	AD-20		UI-12
21	URS-21	The patient can delete a food from the health plan.	UC-21	SRS-75, SRS-110, SRS-111	AD-21	SD-17	UI-12
22	URS-22	The patient can record blood sugar value to the database.	UC-22	SRS-112, SRS-113, SRS-114, SRS-115, SRS-116, SRS-117	AD-22	SD-19	UI-12
23	URS-23	The patient can view body mass index.	UC-23	SRS-118, SRS-119	AD-23	SD-18	UI-12
24	URS-24	The patient can view basal metabolic rate.	UC-24	SRS-120, SRS-121	AD-24	SD-18	UI-12

25	URS-25	The patient can view the statistic line graph of blood sugar.	UC-25	SRS-122, SRS-123	AD-25	SD-20	UI-12
26	URS-26	The patient can view interpretation about blood sugar level from the system.	UC-26	SRS-122, SRS-124	AD-26	SD-21	UI-12
27	URS-27	The patient can select food name from the database.	UC-27	SRS-125, SRS-126, SRS-127	AD-27		UI-17
28	URS-28	The patient can check the list of medicine.	UC-28	SRS-128	AD-28		UI-17
29	URS-29	The patient can get analyze of nutrition behavior in each day.	UC-29	SRS-129, SRS-130, SRS-131, SRS-132	AD-29		UI-17
30	URS-30	The patient can view the daily graph of the glycemic level.	UC-30	SRS-133, SRS-134, SRS-135	AD-30		UI-17

Use Case and User Requirement Specification.

Use Case (UC)	URS 1	URS 2	URS 3	URS 4	URS 5	URS 6	URS 7	URS 8	URS 9	URS 10	URS 11	URS 12	URS 13	URS 14	URS 15	URS 16	URS 17
01	■																
02		■															
03			■														
04				■													
05					■												
06						■											
07							■										
08								■									
09									■								
10										■							
11											■						
12												■					
13													■				
14														■			
15															■		
16																■	
17																	■

Use Case (UC)	URS 18	URS 19	URS 20	URS 21	URS 22	URS 23	URS 24	URS 25	URS 26	URS 27	URS 28	URS 29	URS 30			
18	■															
19		■														
20			■													
21				■												
22					■											
23						■										
24							■									
25								■								
26									■							
27										■						
28											■					
29												■				
30													■			

User Requirement Specification and Software Requirement Specification

No.	URS Description	SRS 001	SRS 002	SRS 003	SRS 004	SRS 005	SRS 006	SRS 007	SRS 008	SRS 009	SRS 010	SRS 011	SRS 012	SRS 013	SRS 014	SRS 015
1	The user can log in to a web application by suing username and password	■	■	■	■	■	■	■	■	■	■					
2	The user can log out from a web application.											■	■			
3	The doctor and nurse can enter patient (username, password, name, age, gender, weight, height, diabetes type and date that start treatment) to the database server on a web application													■	■	■
4	The doctor and nurse can access to patient information.															
5	The patient can view information of his on profile page.															
6	The patient can edit information on profile page.														■	
7	The patient can change the password for login.														■	
8	The admin can add nurse, doctor, and nutritionists account to the system on administrator page.														■	
9	The admin can edit nurse, doctor, and nutritionists account on administrator page.														■	

No.	URS Description	SRS 016	SRS 017	SRS 018	SRS 019	SRS 020	SRS 021	SRS 022	SRS 023	SRS 024	SRS 025	SRS 026	SRS 027	SRS 028	SRS 029	SRS 030
1	The user can log in to a web application by suing username and password															
2	The user can log out from a web application.															
3	The doctor and nurse can enter patient (username, password, name, age, gender, weight, height, diabetes type and date that start treatment) to the database server on a web application															
4	The doctor and nurse can access to patient information.															
5	The patient can view information of his on profile page.															
6	The patient can edit information on profile page.															
7	The patient can change the password for login.															
8	The admin can add nurse, doctor, and nutritionists account to the system on administrator page.															
9	The admin can edit nurse, doctor, and nutritionists account on administrator page.															

No.	URS Description	SRS 031	SRS 032	SRS 033	SRS 034	SRS 035	SRS 036	SRS 037	SRS 038	SRS 039	SRS 040	SRS 041	SRS 042	SRS 043	SRS 044	SRS 045
1	The user can log in to a web application by suing username and password															
2	The user can log out from a web application.															
3	The doctor and nurse can enter patient (username, password, name, age, gender, weight, height, diabetes type and date that start treatment) to the database server on a web application	■	■	■	■	■	■	■								
4	The doctor and nurse can access to patient information.								■	■	■	■	■	■	■	
5	The patient can view information of his on profile page.															■
6	The patient can edit information on profile page.															
7	The patient can change the password for login.															
8	The admin can add nurse, doctor, and nutritionists account to the system on administrator page.															
9	The admin can edit nurse, doctor, and nutritionists account on administrator page.															

No.	URS Description	SRS 046	SRS 047	SRS 048	SRS 049	SRS 050	SRS 051	SRS 052	SRS 053	SRS 054	SRS 055	SRS 056	SRS 057	SRS 058	SRS 059	SRS 060
1	The user can log in to a web application by suing username and password															
2	The user can log out from a web application.															
3	The doctor and nurse can enter patient (username, password, name, age, gender, weight, height, diabetes type and date that start treatment) to the database server on a web application															
4	The doctor and nurse can access to patient information.															
5	The patient can view information of his on profile page.	■	■													
6	The patient can edit information on profile page.			■	■	■	■	■	■							
7	The patient can change the password for login.									■	■	■	■	■	■	■
8	The admin can add nurse, doctor, and nutritionists account to the system on administrator page.															
9	The admin can edit nurse, doctor, and nutritionists account on administrator page.															

No.	URS Description	SRS 061	SRS 062	SRS 063	SRS 064	SRS 065	SRS 066	SRS 067	SRS 068	SRS 069	SRS 070	SRS 071	SRS 072	SRS 073	SRS 074	SRS 075
1	The user can log in to a web application by suing username and password															
2	The user can log out from a web application.															
3	The doctor and nurse can enter patient (username, password, name, age, gender, weight, height, diabetes type and date that start treatment) to the database server on a web application															
4	The doctor and nurse can access to patient information.															
5	The patient can view information of his on profile page.															
6	The patient can edit information on profile page.															
7	The patient can change the password for login.															
8	The admin can add nurse, doctor, and nutritionists account to the system on administrator page.	■	■	■	■	■	■	■	■	■						
9	The admin can edit nurse, doctor, and nutritionists account on administrator page.				■	■					■	■	■	■	■	

No.	URS Description	SRS 076	SRS 077	SRS 078	SRS 079	SRS 080	SRS 081	SRS 082	SRS 083	SRS 084	SRS 085	SRS 086	SRS 087	SRS 088	SRS 089	SRS 090
1	The user can log in to a web application by suing username and password															
2	The user can log out from a web application.															
3	The doctor and nurse can enter patient (username, password, name, age, gender, weight, height, diabetes type and date that start treatment) to the database server on a web application															
4	The doctor and nurse can access to patient information.															
5	The patient can view information of his on profile page.															
6	The patient can edit information on profile page.															
7	The patient can change the password for login.															
8	The admin can add nurse, doctor, and nutritionists account to the system on administrator page.															
9	The admin can edit nurse, doctor, and nutritionists account on administrator page.															

No.	URS Description	SRS 091	SRS 092	SRS 093	SRS 094	SRS 095	SRS 096	SRS 097	SRS 098	SRS 099	SRS 100	SRS 101	SRS 102	SRS 103	SRS 104	SRS 105
1	The user can log in to a web application by suing username and password															
2	The user can log out from a web application.															
3	The doctor and nurse can enter patient (username, password, name, age, gender, weight, height, diabetes type and date that start treatment) to the database server on a web application															
4	The doctor and nurse can access to patient information.															
5	The patient can view information of his on profile page.															
6	The patient can edit information on profile page.															
7	The patient can change the password for login.															
8	The admin can add nurse, doctor, and nutritionists account to the system on administrator page.															
9	The admin can edit nurse, doctor, and nutritionists account on administrator page.															

No.	URS Description	SRS 106	SRS 107	SRS 108	SRS 109	SRS 110	SRS 111	SRS 112	SRS 113	SRS 114	SRS 115	SRS 116	SRS 117
1	The user can log in to a web application by suing username and password												
2	The user can log out from a web application.												
3	The doctor and nurse can enter patient (username, password, name, age, gender, weight, height, diabetes type and date that start treatment) to the database server on a web application												
4	The doctor and nurse can access to patient information.												
5	The patient can view information of his on profile page.												
6	The patient can edit information on profile page.												
7	The patient can change the password for login.												
8	The admin can add nurse, doctor, and nutritionists account to the system on administrator page.												
9	The admin can edit nurse, doctor, and nutritionists account on administrator page.												

No.	URS Description	SRS 001	SRS 002	SRS 003	SRS 004	SRS 005	SRS 006	SRS 007	SRS 008	SRS 009	SRS 010	SRS 011	SRS 012	SRS 013	SRS 014	SRS 015
10	The admin can delete nurse, doctor, and nutritionists account from the system on administrator page.															
11	The nutritionists can add food to the system on nutrition management page															
12	The nutritionists can edit food on nutrition management page.															
13	The nutritionists can delete food from the system on nutrition management page.															
14	The nurse and doctor can add the exercise recommend to the system on exercise management page.															
15	The nurse and doctor can edit the exercise recommend on exercise management page.															
16	The nurse and doctor can delete the exercise recommend from the system on exercise management page.															
17	The patient t can select the symptoms on health plan page.															

No.	URS Description	SRS 016	SRS 017	SRS 018	SRS 019	SRS 020	SRS 021	SRS 022	SRS 023	SRS 024	SRS 025	SRS 026	SRS 027	SRS 028	SRS 029	SRS 030
10	The admin can delete nurse, doctor, and nutritionists account from the system on administrator page.															
11	The nutritionists can add food to the system on nutrition management page															
12	The nutritionists can edit food on nutrition management page.															
13	The nutritionists can delete food from the system on nutrition management page.															
14	The nurse and doctor can add the exercise recommend to the system on exercise management page.															
15	The nurse and doctor can edit the exercise recommend on exercise management page.															
16	The nurse and doctor can delete the exercise recommend from the system on exercise management page.															
17	The patient t can select the symptoms on health plan page.															

No.	URS Description	SRS 031	SRS 032	SRS 033	SRS 034	SRS 035	SRS 036	SRS 037	SRS 038	SRS 039	SRS 040	SRS 041	SRS 042	SRS 043	SRS 044	SRS 045
10	The admin can delete nurse, doctor, and nutritionists account from the system on administrator page.															
11	The nutritionists can add food to the system on nutrition management page															
12	The nutritionists can edit food on nutrition management page.															
13	The nutritionists can delete food from the system on nutrition management page.															
14	The nurse and doctor can add the exercise recommend to the system on exercise management page.															
15	The nurse and doctor can edit the exercise recommend on exercise management page.															
16	The nurse and doctor can delete the exercise recommend from the system on exercise management page.															
17	The patient t can select the symptoms on health plan page.															

No.	URS Description	SRS 046	SRS 047	SRS 048	SRS 049	SRS 050	SRS 051	SRS 052	SRS 053	SRS 054	SRS 055	SRS 056	SRS 057	SRS 058	SRS 059	SRS 060
10	The admin can delete nurse, doctor, and nutritionists account from the system on administrator page.															
11	The nutritionists can add food to the system on nutrition management page															
12	The nutritionists can edit food on nutrition management page.															
13	The nutritionists can delete food from the system on nutrition management page.															
14	The nurse and doctor can add the exercise recommend to the system on exercise management page.															
15	The nurse and doctor can edit the exercise recommend on exercise management page.															
16	The nurse and doctor can delete the exercise recommend from the system on exercise management page.															
17	The patient t can select the symptoms on health plan page.															

No.	URS Description	SRS 061	SRS 062	SRS 063	SRS 064	SRS 065	SRS 066	SRS 067	SRS 068	SRS 069	SRS 070	SRS 071	SRS 072	SRS 073	SRS 074	SRS 075
10	The admin can delete nurse, doctor, and nutritionists account from the system on administrator page.															■
11	The nutritionists can add food to the system on nutrition management page															
12	The nutritionists can edit food on nutrition management page.															
13	The nutritionists can delete food from the system on nutrition management page.															■
14	The nurse and doctor can add the exercise recommend to the system on exercise management page.															
15	The nurse and doctor can edit the exercise recommend on exercise management page.															
16	The nurse and doctor can delete the exercise recommend from the system on exercise management page.															■
17	The patient t can select the symptoms on health plan page.															

No.	URS Description	SRS 076	SRS 077	SRS 078	SRS 079	SRS 080	SRS 081	SRS 082	SRS 083	SRS 084	SRS 085	SRS 086	SRS 087	SRS 088	SRS 089	SRS 090
10	The admin can delete nurse, doctor, and nutritionists account from the system on administrator page.	■	■													
11	The nutritionists can add food to the system on nutrition management page			■	■	■	■	■	■	■	■	■				
12	The nutritionists can edit food on nutrition management page.						■	■	■	■			■	■	■	■
13	The nutritionists can delete food from the system on nutrition management page.															
14	The nurse and doctor can add the exercise recommend to the system on exercise management page.				■											
15	The nurse and doctor can edit the exercise recommend on exercise management page.													■		
16	The nurse and doctor can delete the exercise recommend from the system on exercise management page.															
17	The patient t can select the symptoms on health plan page.															

No.	URS Description	SRS 091	SRS 092	SRS 093	SRS 094	SRS 095	SRS 096	SRS 097	SRS 098	SRS 099	SRS 100	SRS 101	SRS 102	SRS 103	SRS 104	SRS 105
10	The admin can delete nurse, doctor, and nutritionists account from the system on administrator page.															
11	The nutritionists can add food to the system on nutrition management page															
12	The nutritionists can edit food on nutrition management page.	■														
13	The nutritionists can delete food from the system on nutrition management page.		■	■												
14	The nurse and doctor can add the exercise recommend to the system on exercise management page.				■	■	■									
15	The nurse and doctor can edit the exercise recommend on exercise management page.						■	■	■							
16	The nurse and doctor can delete the exercise recommend from the system on exercise management page.							■								
17	The patient t can select the symptoms on health plan page.									■	■	■				

No.	URS Description	SRS 106	SRS 107	SRS 108	SRS 109	SRS 110	SRS 111	SRS 112	SRS 113	SRS 114	SRS 115	SRS 116	SRS 117
10	The admin can delete nurse, doctor, and nutritionists account from the system on administrator page.												
11	The nutritionists can add food to the system on nutrition management page												
12	The nutritionists can edit food on nutrition management page.												
13	The nutritionists can delete food from the system on nutrition management page.												
14	The nurse and doctor can add the exercise recommend to the system on exercise management page.												
15	The nurse and doctor can edit the exercise recommend on exercise management page.												
16	The nurse and doctor can delete the exercise recommend from the system on exercise management page.												
17	The patient t can select the symptoms on health plan page.												

No.	URS Description	SRS 001	SRS 002	SRS 003	SRS 004	SRS 005	SRS 006	SRS 007	SRS 008	SRS 009	SRS 010	SRS 011	SRS 012	SRS 013	SRS 014	SRS 015
18	The patient can get the suggestion about exercise from the system.															
19	The patient can add food from the database to record in a health plan.															
20	The patient can view the total of glycemic index and calorie of food that selected in health plan.															
21	The patient can delete a food from the health plan.															
22	The patient can record blood sugar value to the database.															
23	The patient can view body mass index.															
24	The patient can view basal metabolic rate.															
25	The patient can view the statistic line graph of blood sugar.															

No.	URS Description	SRS 016	SRS 017	SRS 018	SRS 019	SRS 020	SRS 021	SRS 022	SRS 023	SRS 024	SRS 025	SRS 026	SRS 027	SRS 028	SRS 029	SRS 030
18	Patient can view interpretation about blood sugar level from the system.															
19	Patient can select food name from the database.															
20	Patient can check the list of medicine.															
21	Patient can get analyze of nutrition behavior in each day.															
22	Patient can view the daily graph of the glycemic level.															
23	The patient can view body mass index.															
24	The patient can view basal metabolic rate.															
25	The patient can view the statistic line graph of blood sugar.															

No.	URS Description	SRS 031	SRS 032	SRS 033	SRS 034	SRS 035	SRS 036	SRS 037	SRS 038	SRS 039	SRS 040	SRS 041	SRS 042	SRS 043	SRS 044	SRS 045
18	Patient can view interpretation about blood sugar level from the system.															
19	Patient can select food name from the database.															
20	Patient can check the list of medicine.															
21	Patient can get analyze of nutrition behavior in each day.															
22	Patient can view the daily graph of the glycemic level.															
23	The patient can view body mass index.															
24	The patient can view basal metabolic rate.															
25	The patient can view the statistic line graph of blood sugar.															

No.	URS Description	SRS 046	SRS 047	SRS 048	SRS 049	SRS 050	SRS 051	SRS 052	SRS 053	SRS 054	SRS 055	SRS 056	SRS 057	SRS 058	SRS 059	SRS 060
18	Patient can view interpretation about blood sugar level from the system.															
19	Patient can select food name from the database.															
20	Patient can check the list of medicine.															
21	Patient can get analyze of nutrition behavior in each day.															
22	Patient can view the daily graph of the glycemic level.															
23	The patient can view body mass index.															
24	The patient can view basal metabolic rate.															
25	The patient can view the statistic line graph of blood sugar.															

No.	URS Description	SRS 061	SRS 062	SRS 063	SRS 064	SRS 065	SRS 066	SRS 067	SRS 068	SRS 069	SRS 070	SRS 071	SRS 072	SRS 073	SRS 074	SRS 075
18	Patient can view interpretation about blood sugar level from the system.															
19	Patient can select food name from the database.															
20	Patient can check the list of medicine.															
21	Patient can get analyze of nutrition behavior in each day.															■
22	Patient can view the daily graph of the glycemic level.															
23	The patient can view body mass index.															
24	The patient can view basal metabolic rate.															
25	The patient can view the statistic line graph of blood sugar.															

No.	URS Description	SRS 076	SRS 077	SRS 078	SRS 079	SRS 080	SRS 081	SRS 082	SRS 083	SRS 084	SRS 085	SRS 086	SRS 087	SRS 088	SRS 089	SRS 090
18	Patient can view interpretation about blood sugar level from the system.															
19	Patient can select food name from the database.					■	■									
20	Patient can check the list of medicine.															
21	Patient can get analyze of nutrition behavior in each day.															
22	Patient can view the daily graph of the glycemic level.															
23	The patient can view body mass index.															
24	The patient can view basal metabolic rate.															
25	The patient can view the statistic line graph of blood sugar.															

No.	URS Description	SRS 091	SRS 092	SRS 093	SRS 094	SRS 095	SRS 096	SRS 097	SRS 098	SRS 099	SRS 100	SRS 101	SRS 102	SRS 103	SRS 104	SRS 105
18	Patient can view interpretation about blood sugar level from the system.												■			
19	Patient can select food name from the database.													■	■	■
20	Patient can check the list of medicine.															
21	Patient can get analyze of nutrition behavior in each day.															
22	Patient can view the daily graph of the glycemic level.															
23	The patient can view body mass index.															
24	The patient can view basal metabolic rate.															
25	The patient can view the statistic line graph of blood sugar.															

No.	URS Description	SRS 106	SRS 107	SRS 108	SRS 109	SRS 110	SRS 111	SRS 112	SRS 113	SRS 114	SRS 115	SRS 116	SRS 117	SRS 118	SRS 119	SRS 120
18	Patient can view interpretation about blood sugar level from the system.															
19	Patient can select food name from the database.	■	■													
20	Patient can check the list of medicine.			■	■											
21	Patient can get analyze of nutrition behavior in each day.					■	■									
22	Patient can view the daily graph of the glycemic level.							■	■	■	■	■	■			
23	The patient can view body mass index.													■	■	
24	The patient can view basal metabolic rate.															■
25	The patient can view the statistic line graph of blood sugar.															

No.	URS Description	SRS 121	SRS 122	SRS 123	SRS 124	SRS 125	SRS 126	SRS 127	SRS 128	SRS 129	SRS 130	SRS 131	SRS 132	SRS 133	SRS 134	SRS 135
18	Patient can view interpretation about blood sugar level from the system.															
19	Patient can select food name from the database.															
20	Patient can check the list of medicine.															
21	Patient can get analyze of nutrition behavior in each day.															
22	Patient can view the daily graph of the glycemic level.															
23	The patient can view body mass index.															
24	The patient can view basal metabolic rate.	■														
25	The patient can view the statistic line graph of blood sugar.		■	■												

No.	URS Description	SRS 001	SRS 002	SRS 003	SRS 004	SRS 005	SRS 006	SRS 007	SRS 008	SRS 009	SRS 010	SRS 011	SRS 012	SRS 013	SRS 014	SRS 015
26	The admin can delete nurse, doctor, and nutritionists account from the system on administrator page.															
27	The nutritionists can add food to the system on nutrition management page															
28	The nutritionists can edit food on nutrition management page.															
29	The nutritionists can delete food from the system on nutrition management page.															
30	The nurse and doctor can add the exercise recommend to the system on exercise management page.															

No.	URS Description	SRS 016	SRS 017	SRS 018	SRS 019	SRS 020	SRS 021	SRS 022	SRS 023	SRS 024	SRS 025	SRS 026	SRS 027	SRS 028	SRS 029	SRS 030
26	The admin can delete nurse, doctor, and nutritionists account from the system on administrator page.															
27	The nutritionists can add food to the system on nutrition management page															
28	The nutritionists can edit food on nutrition management page.															
29	The nutritionists can delete food from the system on nutrition management page.															
30	The nurse and doctor can add the exercise recommend to the system on exercise management page.															

No.	URS Description	SRS 031	SRS 032	SRS 033	SRS 034	SRS 035	SRS 036	SRS 037	SRS 038	SRS 039	SRS 040	SRS 041	SRS 042	SRS 043	SRS 044	SRS 045
26	The admin can delete nurse, doctor, and nutritionists account from the system on administrator page.															
27	The nutritionists can add food to the system on nutrition management page															
28	The nutritionists can edit food on nutrition management page.															
29	The nutritionists can delete food from the system on nutrition management page.															
30	The nurse and doctor can add the exercise recommend to the system on exercise management page.															

No.	URS Description	SRS 046	SRS 047	SRS 048	SRS 049	SRS 050	SRS 051	SRS 052	SRS 053	SRS 054	SRS 055	SRS 056	SRS 057	SRS 058	SRS 059	SRS 060
26	The admin can delete nurse, doctor, and nutritionists account from the system on administrator page.															
27	The nutritionists can add food to the system on nutrition management page															
28	The nutritionists can edit food on nutrition management page.															
29	The nutritionists can delete food from the system on nutrition management page.															
30	The nurse and doctor can add the exercise recommend to the system on exercise management page.															

No.	URS Description	SRS 061	SRS 062	SRS 063	SRS 064	SRS 065	SRS 066	SRS 067	SRS 068	SRS 069	SRS 070	SRS 071	SRS 072	SRS 073	SRS 074	SRS 075
26	The admin can delete nurse, doctor, and nutritionists account from the system on administrator page.															
27	The nutritionists can add food to the system on nutrition management page															
28	The nutritionists can edit food on nutrition management page.															
29	The nutritionists can delete food from the system on nutrition management page.															
30	The nurse and doctor can add the exercise recommend to the system on exercise management page.															

No.	URS Description	SRS 076	SRS 077	SRS 078	SRS 079	SRS 080	SRS 081	SRS 082	SRS 083	SRS 084	SRS 085	SRS 086	SRS 087	SRS 088	SRS 089	SRS 090
26	The admin can delete nurse, doctor, and nutritionists account from the system on administrator page.															
27	The nutritionists can add food to the system on nutrition management page															
28	The nutritionists can edit food on nutrition management page.															
29	The nutritionists can delete food from the system on nutrition management page.															
30	The nurse and doctor can add the exercise recommend to the system on exercise management page.															

No.	URS Description	SRS 091	SRS 092	SRS 093	SRS 094	SRS 095	SRS 096	SRS 097	SRS 098	SRS 099	SRS 100	SRS 101	SRS 102	SRS 103	SRS 104	SRS 105
26	The admin can delete nurse, doctor, and nutritionists account from the system on administrator page.															
27	The nutritionists can add food to the system on nutrition management page															
28	The nutritionists can edit food on nutrition management page.															
29	The nutritionists can delete food from the system on nutrition management page.															
30	The nurse and doctor can add the exercise recommend to the system on exercise management page.															

No.	URS Description	SRS 106	SRS 107	SRS 108	SRS 109	SRS 110	SRS 111	SRS 112	SRS 113	SRS 114	SRS 115	SRS 116	SRS 117	SRS 118	SRS 119	SRS 120
26	The admin can delete nurse, doctor, and nutritionists account from the system on administrator page.															
27	The nutritionists can add food to the system on nutrition management page															
28	The nutritionists can edit food on nutrition management page.															
29	The nutritionists can delete food from the system on nutrition management page.															
30	The nurse and doctor can add the exercise recommend to the system on exercise management page.															

No.	URS Description	SRS 121	SRS 122	SRS 123	SRS 124	SRS 125	SRS 126	SRS 127	SRS 128	SRS 129	SRS 130	SRS 131	SRS 132	SRS 133	SRS 134	SRS 135
26	The admin can delete nurse, doctor, and nutritionists account from the system on administrator page.		■		■											
27	The nutritionists can add food to the system on nutrition management page					■	■	■								
28	The nutritionists can edit food on nutrition management page.								■							
29	The nutritionists can delete food from the system on nutrition management page.										■	■	■			
30	The nurse and doctor can add the exercise recommend to the system on exercise management page.													■	■	■

Activity diagram and User Requirement Specification

No.	Activity Diagram	URS 1	URS 2	URS 3	URS 4	URS 5	URS 6	URS 7	URS 8	URS 9	URS 10	URS 11	URS 12	URS 13	URS 14	URS 15	URS 16
1	AD 01	■															
2	AD 02		■														
3	AD 03			■													
4	AD 04				■												
5	AD 05					■											
6	AD 06						■										
7	AD 07							■									
8	AD 08								■								
9	AD 09									■							
10	AD 10										■						
11	AD 11											■					
12	AD 12												■				
13	AD 13													■			
14	AD 14														■		
15	AD 15															■	
16	AD 16																■

No.	Activity Diagram	URS 17	URS 18	URS 19	URS 20	URS 21	URS 22	URS 23	URS 24	URS 25	URS 26	URS 27	URS 28	URS 29	URS 30
17	AD 17	■													
18	AD 18		■												
19	AD 19			■											
20	AD 22				■										
21	AD 21					■									
22	AD 22						■								
23	AD 23							■							
24	AD 24								■						
25	AD 25									■					
26	AD 26										■				
27	AD 27											■			
28	AD 28												■		
29	AD 29													■	
30	AD 30														■

Sequence diagram and User Requirement Specification

No.	Sequence Diagram	URS 1	URS 2	URS 3	URS 4	URS 5	URS 6	URS 7	URS 8	URS 9	URS 10	URS 11	URS 12	URS 13	URS 14	URS 15
1	SD 01			■												
2	SD 02	■														
3	SD 03		■													
4	SD 04					■										
5	SD 05						■									
6	SD 06							■								
7	SD 07											■				
8	SD 08												■			
9	SD 09													■		
10	SD 10														■	
11	SD 11															■
12	SD 12															
13	SD 13								■							
14	SD 14									■						
15	SD 15										■					
16	SD 16															
17	SD 17															
18	SD 18															
19	SD 19															
20	SD 20															
21	SD 21															

No.	Sequence Diagram	URS 16	URS 17	URS 18	URS 19	URS 20	URS 21	URS 22	URS 23	URS 24	URS 25	URS 26	URS 27	URS 28	URS 29	URS 30
1	SD 01															
2	SD 02															
3	SD 03															
4	SD 04															
5	SD 05															
6	SD 06															
7	SD 07															
8	SD 08															
9	SD 09															
10	SD 10															
11	SD 11															
12	SD 12	■														
13	SD 13															
14	SD 14															
15	SD 15															
16	SD 16				■											
17	SD 17						■									
18	SD 18								■	■						
19	SD 19							■								
20	SD 20										■					
21	SD 21											■				

User Interface and User Requirement Specification

No.	User Interface	URS 1	URS 2	URS 3	URS 4	URS 5	URS 6	URS 7	URS 8	URS 9	URS 10	URS 11	URS 12	URS 13	URS 14	URS 15
1	UI 01	■														
2	UI 02		■													
3	UI 03			■												
4	UI 04					■										
5	UI 05						■									
6	UI 06							■								
7	UI 07								■	■	■					
8	UI 08								■	■	■					
9	UI 09											■				
10	UI 10												■			
11	UI 11													■		
12	UI 12															
13	UI 13														■	■
14	UI 14														■	
15	UI 15															■
16	UI 16															
17	UI 17															

No.	User Interface	URS 16	URS 17	URS 18	URS 19	URS 20	URS 21	URS 22	URS 23	URS 24	URS 25	URS 26	URS 27	URS 28	URS 29	URS 30
1	UI 01															
2	UI 02															
3	UI 03															
4	UI 04															
5	UI 05															
6	UI 06															
7	UI 07															
8	UI 08															
9	UI 09															
10	UI 10															
11	UI 11															
12	UI 12		■	■	■	■	■	■	■	■	■	■				
13	UI 13	■														
14	UI 14															
15	UI 15															
16	UI 16															
17	UI 17												■	■	■	■

User Requirement Specification and Software Testing (Unit test)

No.	URS	UT-01	UT-02	UT-03	UT-04	UT-05	UT-06	UT-07	UT-08	UT-09	UT-10	UT-11	UT-12	UT-13	UT-14	UT-16
1	URS 01															
2	URS 02															
3	URS 03															
4	URS 04															
5	URS 05															
6	URS 06															
7	URS 07															
8	URS 08															
9	URS 09															
10	URS 10															
11	URS 11															
12	URS 12															
13	URS 13															
14	URS 14															
15	URS 15															

No.	URS	UT-01	UT-02	UT-03	UT-04	UT-05	UT-06	UT-07	UT-08	UT-09	UT-10	UT-11	UT-12	UT-13	UT-14	UT-16
1	URS 16															
2	URS 17															
3	URS 18															
4	URS 19															
5	URS 20															
6	URS 21															
7	URS 22															
8	URS 23															
9	URS 24															
10	URS 25															
11	URS 26															
12	URS 27															
13	URS 28															
14	URS 29															
15	URS 30															

No.	URS	UT-17	UT-18	UT-19													
1	URS 01																
2	URS 02																
3	URS 03																
4	URS 04																
5	URS 05																
6	URS 06																
7	URS 07																
8	URS 08																
9	URS 09																
10	URS 10																
11	URS 11																
12	URS 12																
13	URS 13																
14	URS 14																
15	URS 15																

No.	URS	UT-17	UT-18	UT-19													
1	URS 16																
2	URS 17																
3	URS 18																
4	URS 19																
5	URS 20																
6	URS 21																
7	URS 22																
8	URS 23																
9	URS 24																
10	URS 25																
11	URS 26																
12	URS 27																
13	URS 28																
14	URS 29																
15	URS 30																

User Requirement Specification and Software Testing (System test)

No.	URS	ST-01	ST -02	ST -03	ST -04	ST -05	ST -06	ST -07	ST -08	ST -09	ST-10	ST-11	ST-12	ST-13	ST-14	ST-16
1	URS 01															
2	URS 02															
3	URS 03															
4	URS 04															
5	URS 05															
6	URS 06															
7	URS 07															
8	URS 08															
9	URS 09															
10	URS 10															
11	URS 11															
12	URS 12															
13	URS 13															
14	URS 14															
15	URS 15															

No.	URS	ST-01	ST -02	ST -03	ST -04	ST -05	ST -06	ST -07	ST -08	ST -09	ST-10	ST-11	ST-12	ST-13	ST-14	ST-16
1	URS 16															
2	URS 17															
3	URS 18															
4	URS 19															
5	URS 20															
6	URS 21															
7	URS 22															
8	URS 23															
9	URS 24															
10	URS 25															
11	URS 26															
12	URS 27															
13	URS 28															
14	URS 29															
15	URS 30															

No.	URS	ST-17	ST-18	ST-19	ST-20	ST-21	ST-22	ST-23								
1	URS 01															
2	URS 02															
3	URS 03															
4	URS 04															
5	URS 05															
6	URS 06															
7	URS 07															
8	URS 08															
9	URS 09															
10	URS 10															
11	URS 11															
12	URS 12															
13	URS 13															
14	URS 14															
15	URS 15															

No.	URS	ST-17	ST-18	ST-19	ST-20	ST-21	ST-22	ST-23							
1	URS 16														
2	URS 17														
3	URS 18														
4	URS 19														
5	URS 20														
6	URS 21														
7	URS 22														
8	URS 23														
9	URS 24														
10	URS 25														
11	URS 26														
12	URS 27														
13	URS 28														
14	URS 29														
15	URS 30														

Chapter Two | User &System Requirement Specification

Feature#1: Authentication system.
URS-01: The user can log in to a web application.
Requirement

SRS-01: The system shall provide the login UI to receive username and password.

SRS-02: The system shall provide button "login".

SRS-03: The system shall verify username and password.

SRS-04: The system shall display error message "Invalid login attempt", when user input wrong username and password

SRS-05: The system shall display error message the "The UserName field is required", when the user does not input username.

SRS-06: The system shall display error message the "The Password field is required", when the user does not input password.

SRS-07: The system shall redirect to behavior page, when the patient login to the web application.

SRS-08: The system shall redirect to home page and display nurse/doctor bar, when the doctor or nurse login to the web application.

SRS-09: The system shall redirect to home page and display nutritionists bar, when the nutritionists login to the web application.

SRS-10: The system shall redirect to home page and display admin bar, when admin login to the web application

URS-02: The user can log out from a web application.
Requirement

SRS-11: The system shall provide button "Log out".

SRS-12: The system shall redirect to home page, when click log out button.

Feature#2: Account management.
URS-03: The doctor and nurse can enter patient (username, password, name, age, gender, weight, height, diabetes type and date that start treatment) to the database server on a web application.
Requirement

SRS-13: The system provides the register UI which includes input fields to input username, password, confirm Password, e-mail, first name, last name, a select box to select gender of patient, age, address, a select box to select diabetes type of patient, height, weight, and start treatment

SRS-14: The system shall provide button "Submit".

SRS-15: The system shall redirect to home page, when nurse registers patient success.

SRS-16: The system shall validate and verify input field username, password, confirm Password, e-mail, first name, last name, gender, age, address, diabetes type, height, weight, and start treatment.

SRS-17: The system shall verify email and provide error message the "email is already taken", when the user input email is already in the database.

SRS-18: The system shall validate email and provide error message the "email is invalid", when user input wrong format e-mail.

SRS-19: The system shall verify username and provide error message the "Username is already taken", when the user input username is already in the database.

SRS-20: The system shall verify username and provide error message the "Username field is required", when the user does not input username.

SRS-21: The system shall verify password and provide error message the "Password field is required", when the user does not input password.

SRS-22: The system shall validate password and provide error message "The password must be at least 6 characters long", when the user input password less than 6 characters.

SRS-23: The system shall provide UI to user input again.

SRS-24: The system shall verify first name and provide error message the "First Name field is required", when the user does not input the first name.

SRS-23: The system shall provide UI to user input again.

SRS-25: The system shall verify last name and provide error message the "Last Name field is required", when user does not input the last name.

SRS-23: The system shall provide UI to user input again.

SRS-26: The system shall provide two select options male and female in the select box gender of the user.

SRS-27: The system shall verify age and provide error message the "Age field is required", when the user does not input age.

SRS-28: The system shall validate age and provide error message "age is must be a number", when user input wrong format age.

SRS-23: The system shall provide UI to user input again.

SRS-29: The system shall verify address and provide error message the "Address field is required", when the user does not input address.

SRS-23: The system shall provide UI to user input again.

SRS-30: The system shall provide two select options diabetes type 1 and diabetes type 2 in the select box diabetes type of user.

SRS-31: The system shall validate height and provide error message "height must be a number", when user input wrong format height.

SRS-32: The system shall verify height and provide error message the "Height field is required", when the user does not input height.

SRS-23: The system shall provide UI to user input again.

SRS-33: The system shall validate weight and provide error message "weight must be a number", when user wrong input format weight.

SRS-34: The system shall verify weight and provide error message the "Weight field is required", when the user does not input weight.

SRS-23: The system shall provide UI to user input again.

SRS-35: The system shall provide error message the "Start Treatment field" is required. When the user does not input, start treatment.

SRS-23: The system shall provide UI to user input again.

SRS-36: The system shall save user information to database, when user input data success.

SRS-37: The system shall redirect to home page, when registration is a success.

URS-04: The doctor and nurse can access to patient information.
Requirement

SRS-38: The system shall provide table list of name of patient.

SRS-39: The system shall provide search field.

SRS-40: The system shall provide search button.

SRS-41: The system shall display name of patient on table, when finish SRS-39.

SRS-42: The system shall verify search field.

SRS-43: The system shall display error message, when the doctor or nurse not input name of patient on search field.

SRS-44: The system shall display error message, when the doctor or nurse input patient name that not already in the database.

URS-05: The patient can view information of his on profile page.
Requirement

SRS-45: The system shall provide link redirect to profile page.

SRS-46: The system shall redirect to the profile page.

SRS-47: The system shall display the information of the user.

URS-06: The patient can edit information on profile page.
Requirement

SRS-48: The system shall provide UI, which includes input fields to input first name, last name, a select box to choose gender, age, address, a select box to select diabetes type, height, weight, and start treatment for edit patient info.

SRS-14: The system shall provide button "Submit".

SRS-49: The system shall redirect to a profile page, when patient edit information success.

SRS-50: The system shall validate input field first name, last name, a select box to choose gender, age, address, a select box to select diabetes type, height, weight, and start treatment.

SRS-51: The system shall validate height and provide error message "The field Height must be a number.", when user input wrong format height.

SRS-52: The system shall validate weight and provide error message "The field Weight must be a number.", when user wrong input format weight.

SRS-53: The system shall save change in the database.

URS-07: The patient can change the password for login.
Requirement

SRS-54: The system shall provide input fields to current input password, new password, confirm the password.

SRS-14: The system shall provide button "Submit".

SRS-55: The system shall validate and verify the input field current password, new password, and confirm the password.

SRS-56: The system shall validate old password and provide error message "Incorrect password", when the patient input current password not correct.

SRS-57: The system shall verify new password and provide error message "The New password field is required", when the patient not input new password.

SRS-58: The system shall validate new password and provide error message "The New password must be at least 6 characters long", when the patient input new password less than 6 characters.

SRS-59: The system shall validate confirm password and provide error message "new password and confirm password does not match", when the patient input a new password and confirm password does not match.

SRS-60: The system shall redirect to the profile page, when user change password success.

URS-08: The admin can add nurse, doctor, and nutritionists account to the system on administrator page.
Requirement

SRS-61: The system shall provide UI to create new account include input fields to input username, password, email, and selection box to select the role of the user.

SRS-62: The system shall provide three select options doctor, nurse, and nutritionists in the select role of the user.

SRS-14: The system shall provide "Submit" button.

SRS-63: The system shall validate input field username, password, and e-mail.

SRS-64: The system shall provide error message the "email is already taken", when the admin input email is already in the database.

SRS-65: The system shall provide error message "the e-mail is invalid", when the admin input wrong format e-mail.

SRS-66: The system shall provide error message the "username is already taken", when the admin input username is already in the database.

SRS-67: The system shall provide error message the "username field is required", when the admin does not input username.

SRS-68: The system shall save data in the database, when admin click button "Submit".

SRS-69: The system shall redirect to the home page of account management, when admin creates new account success.

URS-09: The admin can edit nurse, doctor, and nutritionists account on administrator page.
Requirement

SRS-70: The system shall provide UI to edit account include input fields to input email, password, and selection box to select the role of the user.

SRS-71: The system shall provide three select options doctor, nurse, and nutritionists in the select role of the user.

SRS-14: The system shall provide "Submit" button.

SRS-72: The system shall validate input field email and password.

SRS-64: The system shall not change the e-mail, when the admin input email is already in the database.

SRS-65: The system shall not change the e-mail, when the admin input wrong format e-mail.

SRS-73: The system shall provide error message "The password must be at least 6 characters long", when the admin input new password less than 6 characters.

SRS-74: The system shall redirect to account management page, when the admin finish edit user account.

URS-10: The admin can delete nurse, doctor, and nutritionists account from the system on administrator page.
Requirement

SRS-75: The system shall provide delete button.

SRS-76: The system shall provide confirm message.

SRS-77: The system shall redirect to account management page, when the admin confirm to delete account.

Feature#3: Nutrition management.

URS-11: The nutritionists can add food to the system on nutrition management page.
Requirement

SRS-78: The system shall provide UI to create new foods which include input field to input food name, glycemic index, and calorie.

SRS-79: The system shall provide "create" button

SRS-80: The system shall validate input field food name, glycemic index, and calorie.

SRS-81: The system shall provide error message "The glycemic index must be a number", when the nutritionists input character on glycemic index field.

SRS-82: The system shall provide error message "The calorie must be a number", when the nutritionists not input calorie.

SRS-83: The system shall provide error message "The glycemic index field is request", when the nutritionists input character on glycemic index field.

SRS-84: The system shall provide error message "The calorie field is request", when the nutritionists not input calorie.

SRS-85: The system shall save data in the database, when nutritionists click button "Create".

SRS-86: The system shall redirect to nutrition management page, when the nutritionists create new foods success.

URS-12: The nutritionists can edit food on nutrition management page.
Requirement

SRS-87: The system shall provide UI to edit include input field to input food name, glycemic index, and calorie.

SRS-88: The system shall provide "save" button

SRS-89: The system shall validate input field food name, glycemic index, and calorie.

SRS-81: The system shall provide error message "The glycemic index must be a number", when the nutritionists input character on glycemic index field.

SRS-82: The system shall provide error message "The calorie must be a number", when the nutritionists not input calorie.

SRS-83: The system shall provide error message "The glycemic index field is request", when the nutritionists input character on glycemic index field.

SRS-84: The system shall provide error message "The calorie field is request", when the nutritionists not input calorie.

SRS-90: The system shall save change data in the database, when nutritionists click button "Save".

SRS-91: The system shall redirect to nutrition management page, when the nutritionists edit foods success.

URS-13: The nutritionists can delete food from the system on nutrition management page.
Requirement

SRS-75: The system shall provide delete button.

SRS-92: The system shall provide confirm page.

SRS-93: The system shall redirect to nutrition management page, when the nutritionists confirm to delete account.

Feature#4: Activity management
URS-14: The nurse and doctor can add the exercise recommend to the system on exercise management page.
Requirement

SRS-94: The system shall provide UI to create the new activity which includes input field symptom, suggestion, proper exercise, exercise inappropriate, and step exercise.

SRS-79: The system shall provide "create" button

SRS-95: The system shall save data in the database.

SRS-96: The system shall redirect to exercise management page, when the doctor or nurse finish creates new exercise.

URS-15: The nurse and doctor can edit the exercise recommend on exercise management page.
Requirement

SRS-97: The system shall provide UI to edit the data include input field symptom, suggestion, proper exercise, exercise inappropriate, and step exercise.

SRS-88: The system shall provide "save" button.

SRS-98: The system shall save change data in the database.

SRS-96: The system shall redirect to exercise management page, when the doctor or nurse finish creates new exercise.

URS-16: The nurse and doctor can delete the exercise recommend from the system on exercise management page.
Requirement

SRS-75: The system shall provide delete button.

SRS-97: The system shall provide confirm page.

SRS-98: The system shall redirect to exercise management page, when the doctor or nurse confirm to delete account.

Feature#5: Activity plan and recommend system.
URS-17: The patient t can select the symptoms on health plan page.
Requirement

SRS-99: The system shall provide a select box to select symptoms of the patient.

SRS-100: The system shall provide five select options peripheral neuropathy, diabetic retinopathy, heart disease, and The problems at knee, Ankles or feet in the select box symptoms of patient.

SRS-101: The system shall provide "select" button.

URS-18: The patient can get the suggestion about exercise from the system.

SRS-102: The system shall display detail table of exercise which includes symptom detail, exercise appropriate, exercise inappropriate, and steps of exercise, when patient select the symptoms success.

Feature#6: Nutrition plan system.
URS-19: The patient can select food from the database to record in a health plan.
Requirement

SRS-103: The system shall provide a select box to select food name from the database.

SRS-104: The system shall provide select options list of food name.

SRS-105: The system shall provide "Add" button.

SRS-106: The system shall record the food that selected to the database of user food.

SRS-107: The system shall display list of food to the user, when success process.

URS-20: The patient can view the total of glycemic index and calorie of food that selected on health plan.
Requirement

SRS-108: The system shall display the total value of glycemic index of food that selected on health plan.

SRS-109: The system shall display the total value of calorie of food that selected on health plan.

URS-21: The patient can delete a food from the health plan.
Requirement

SRS-75: The system shall provide delete button.

SRS-110: The system shall delete a food from the list of the health plan.

SRS-111: The system shall save change in the database of user food.

Feature#7: Health monitors system.
URS-22: The patient can record blood sugar value to the database.
Requirement

> SRS-112: The system shall provide input field to input blood sugar.
> SRS-113: The system shall provide button "add".
> SRS-114: The system shall record the value in the database.
> SRS-115: The system shall validate input field blood sugar.
> SRS-116: The system shall provide error message "blood sugar must be a number", when the patient input character.
> SRS-117: The system shall provide error message "blood sugar cannot be negative", when the user input blood sugar minus value.

URS-23: The patient can view body mass index.
Requirement

> SRS-118: The system shall calculate body mass (BMI) by

$$\text{BMI} = \frac{\text{Weight(m)}}{(\text{Height(m)} \times \text{Height(m)})}$$

> SRS-119: The system shall display result of BMI on health plan page.

URS-24: The patient can view basal metabolic rate.
Requirement

> SRS-120: The system shall calculate basal metabolic rate (BMR) by

$$\mathbf{BMR(male)} = 66 + (13.7 \times weight\ (kg)) + (5 \times (height(cm)) - (6.8 \times age)$$
$$\mathbf{BMR(female)} = 665 + (9.6 \times weight\ (kg)) + (1.8 \times (height(cm)) - (4.7 \times age)$$

> SRS-121: The system shall display result of BMR on health plan page.

URS-25: The patient can view the statistic line graph of blood sugar.
Requirement

> SRS-122: The system shall get data after finish URS-22.
> SRS-123: The system shall display blood sugar on line graph.

URS-26: The patient can view interpretation about blood sugar level from the system.
Requirement

> SRS-122: The system shall get data after finish URS-22.
> SRS-124: The system shall display table include (levels of diabetes, Symptom, How to take care).

Feature#8: Behavior monitors system.
URS-27: The patient can select food name from the database.
Requirement

> SRS-125: The system shall provide select options list of food name.
> SRS-126: The system shall provide "select" button.
> SRS-127: The system shall display food that selected to the user.

URS-28: The patient can check the list of medicine.
Requirement

    SRS-128: The system shall provide a checkbox to check the list of medicine.

URS-29: The patient can get analyze of nutrition behavior in each day.
Requirement

    SRS-129: The system shall provide the colors to display risk result include green, yellow, and red.

    SRS-130: The system shall display analyze result green color, when the user gets glycemic index value less than 120 and check all list of medicine.

    SRS-131: The system shall display analyze result yellow color, when the user gets glycemic index value more than 120 and check all list of medicine or get glycemic index value less than 120 and not check all list of medicine.

    SRS-132: The system shall display analyze result red color, when the user gets glycemic index value more than 120 and not check all list of medicine.

URS-30: The patient can view the daily graph of the glycemic level.
Requirement

    SRS-133: The system shall get data after finish URS-27.

    SRS-134: The system shall calculate the total glycemic index of food.

    SRS-135: The system shall display the total of glycemic value on line graph.