

Tutorial 2

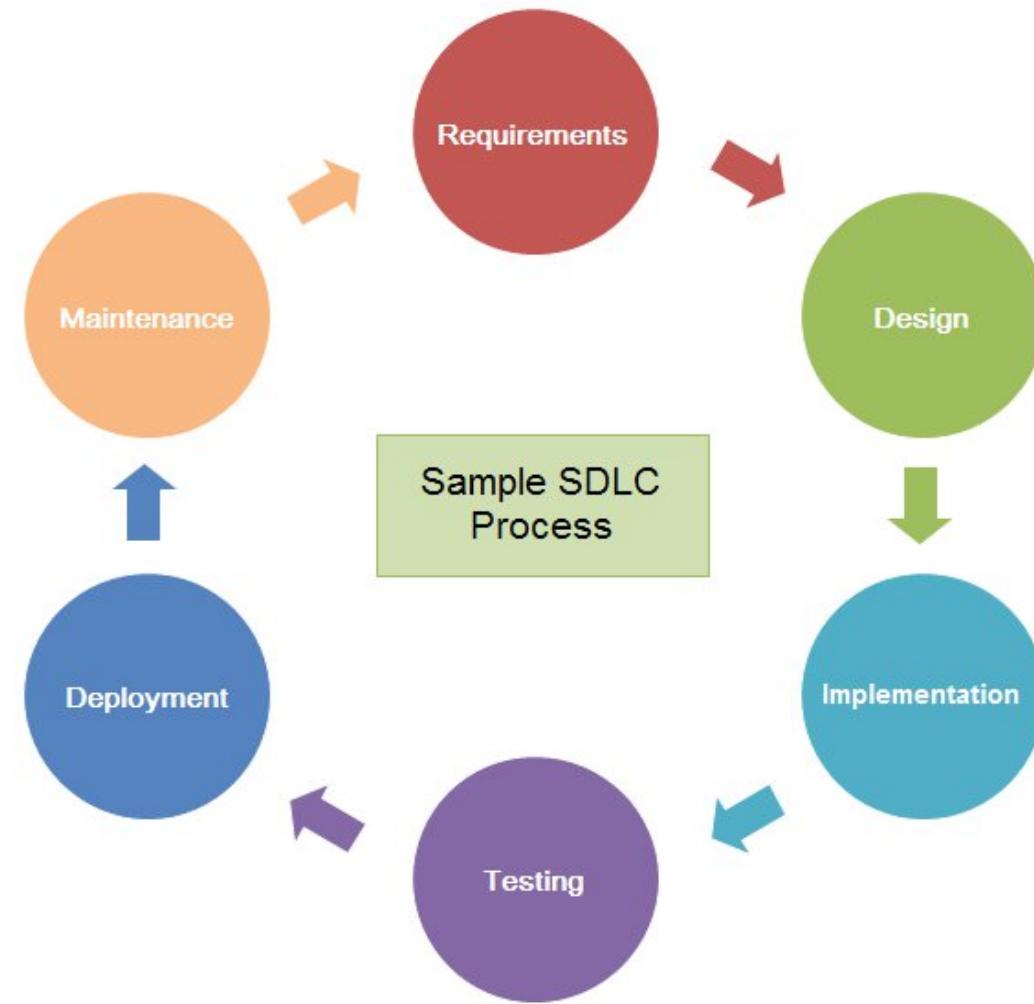
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Software Development Life Cycle (SDLC)

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- SDLC is the acronym of Software Development Life Cycle. It is also called as Software development process. The software development life cycle (SDLC) is a framework defining tasks performed at each step in the software development process.

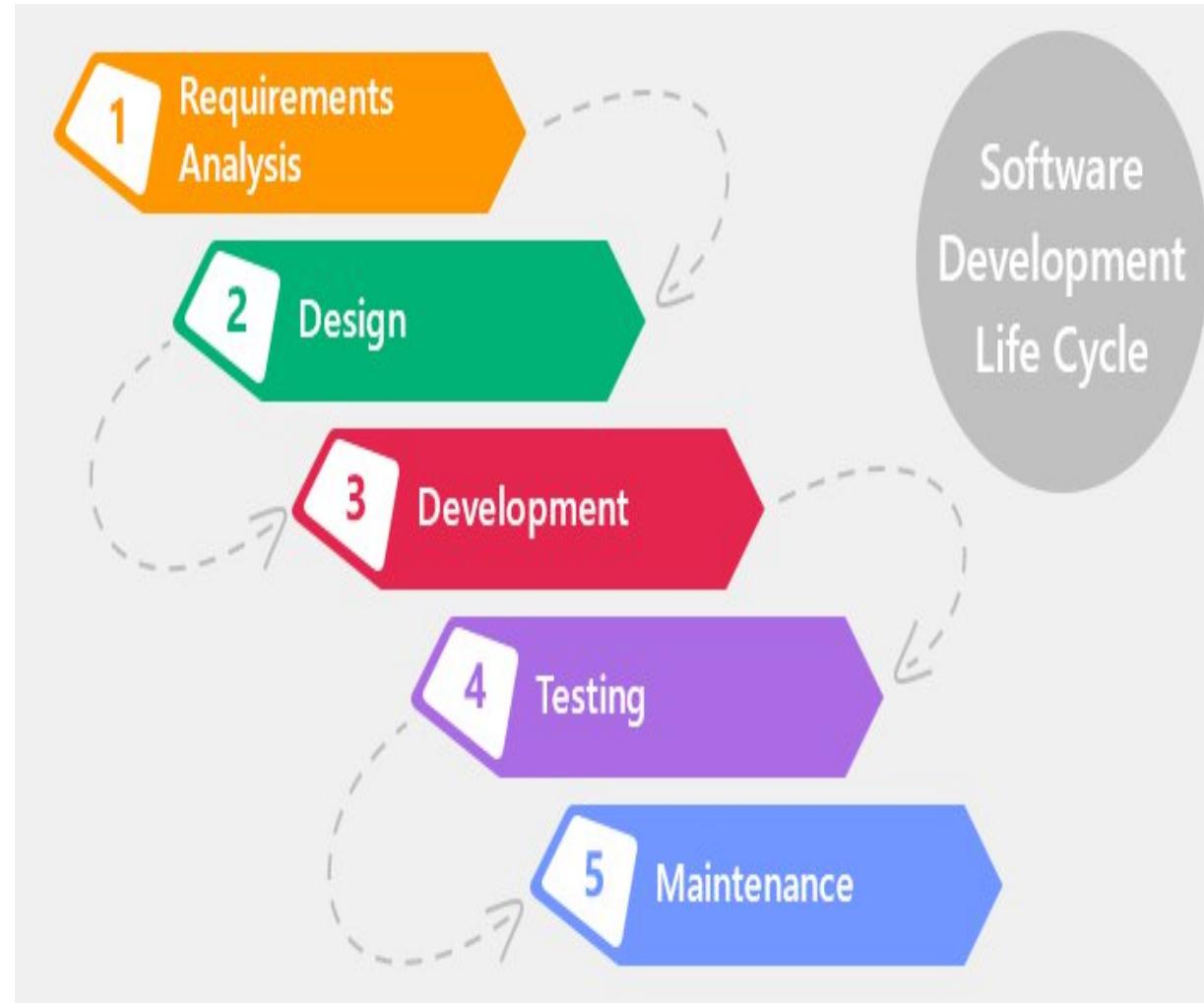
Software Development Life Cycle (SDLC)



Waterfall

- The waterfall model is a sequential design process, used in software development processes, in which progress is seen as flowing steadily downwards (like a waterfall) through the phases of conception, initiation, analysis, design, construction, testing, production/implementation and maintenance.

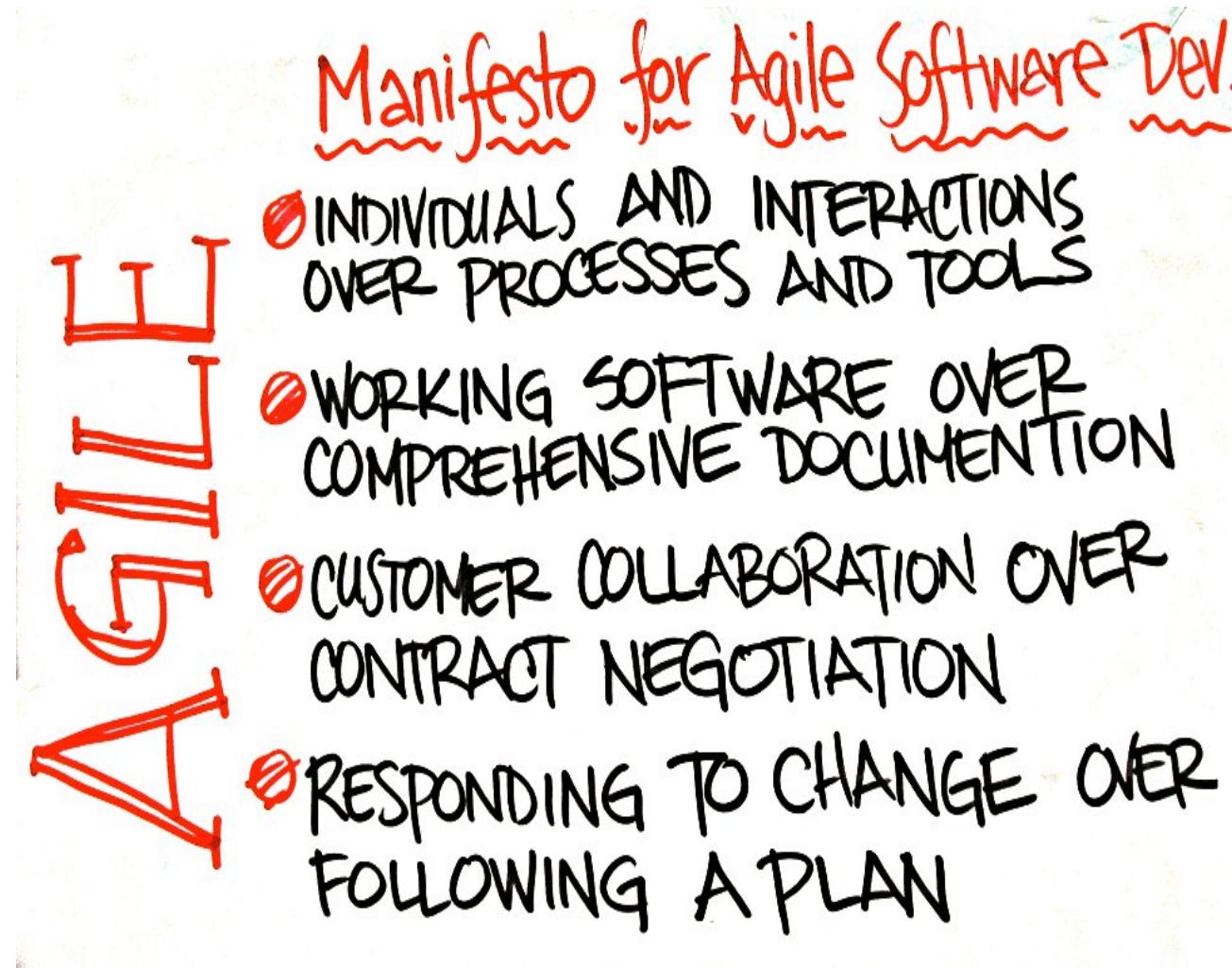
Waterfall



Agile

- Agile Software Development is an umbrella term for a set of methods and practices based on the values and principles expressed in the Agile Manifesto. Solutions evolve through collaboration between self-organizing, cross-functional teams utilizing the appropriate practices for their context.

Agile Manifesto



Agile Testing Methods

Agile Testing Methods:

- **Scrum**
- **eXtreme Programming (XP)**
- **Kanban**

eXtreme Programming (XP)

- Extreme programming (XP) is a software development methodology which is intended to improve software quality and responsiveness to changing customer requirements

- Scrum does not contain practices specifically for programming, whereas XP does:
 - Sit Together
 - Stories
 - Weekly Cycle
 - Pair Programming
 - Continuous Integration
 - Test-First Programming
 - Incremental Design

Kanban

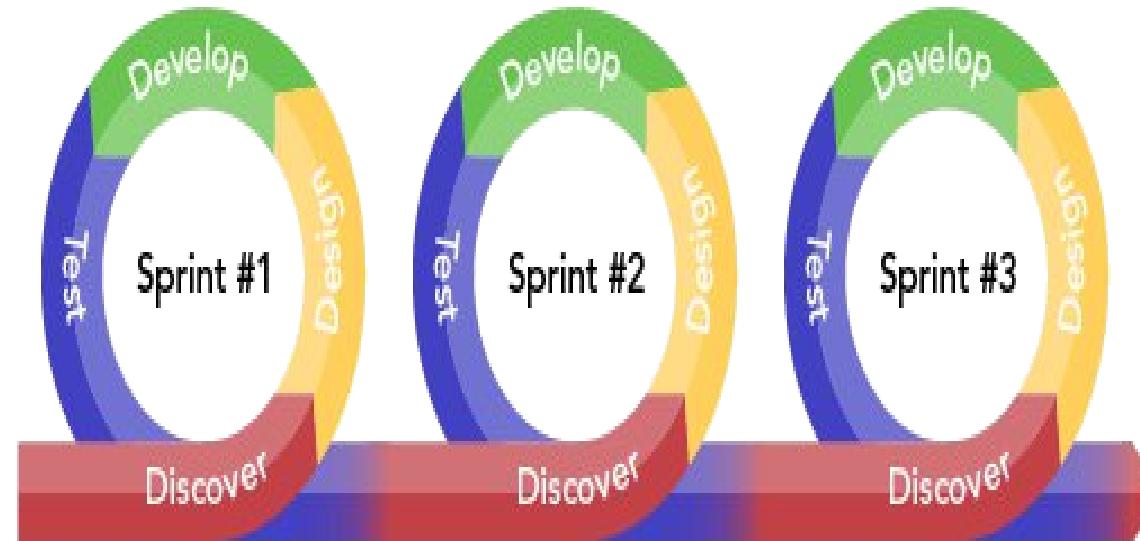
- Similar to scrum, except continuous.
- Better suited for teams that have a lot of unplanned work coming up or have fast changing requirements

Scrum

- Sprint: Normally a 2 week focused effort moving the team toward fixed goals.
- Product Backlog: a constantly prioritized to-do list
- Sprint Backlog: a list of the highest prioritized items from the product backlog.
- Scrum Master: the coach for the product management team and works to ensure the realization of the goals of the sprint.
- Product Owner: represents the customer and is responsible for prioritizing the backlog.
- Scrum Team: The Scrum Team includes three roles: the product owner, the Scrum Master, and the members of the development team. This is a group of 5-9 people who self-organize and have joint responsibility for the completed tasks.

Sprint

- The scrum term for iteration. Scrum teams use inspection throughout an agile project to ensure that the team meets the goals of each part of the process.

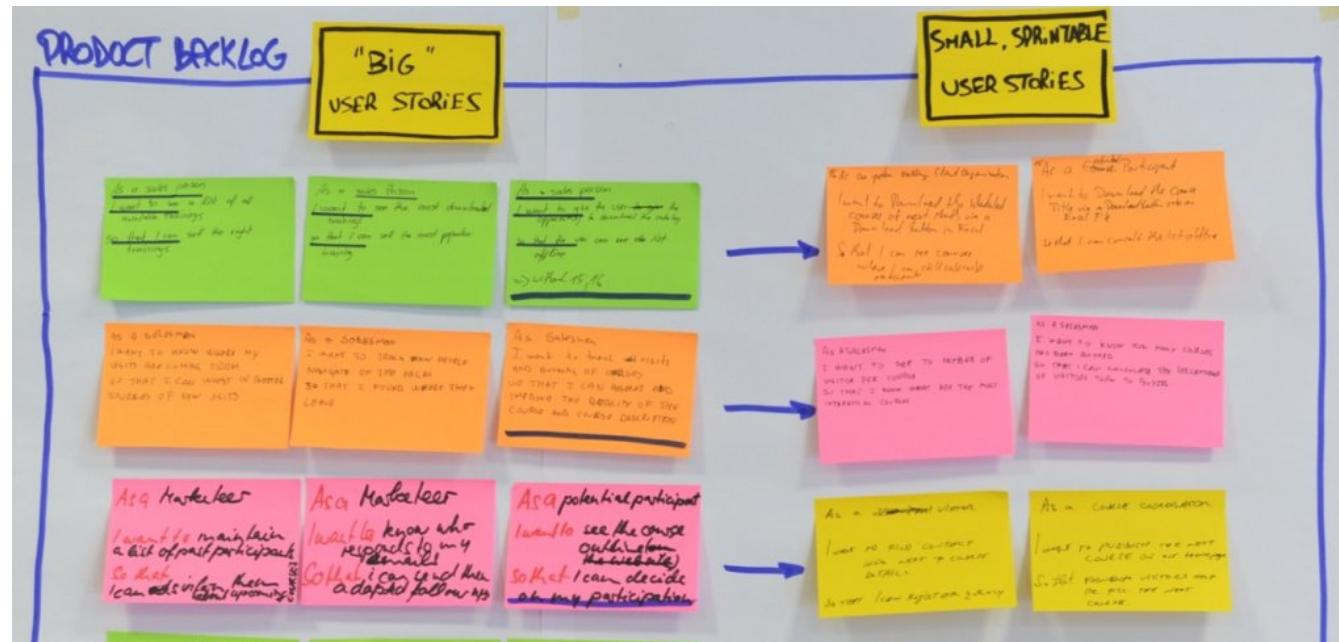


Agile Method

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Product Backlog

- The agile product backlog in Scrum is a prioritized features list, containing short descriptions of all functionality desired in the product. When applying Scrum, it's not necessary to start a project with a lengthy, upfront effort to document all requirements.



Product Backlog



Scrum Master



Owns the process

Protects team

Not the boss

Facilitator

Product Owner



Voice of the customer

Owns value

Gathers feedback

Makes decisions

Scrum Team



Commits to the work

Swarm on high value tasks

Has skills to deliver

Aims to be cross-functional

Product Backlog

Project Requirements are mainly divided into user stories (smaller pieces)

Product Backlog contains list of prioritized **user stories (simple , short & descriptive)**

All user stories are sorted in product backlog according to its priority (important)

Any user story has id , description , **priority (which user story to start with)** , estimated time (**time needed to complete user story**) and status (**New , In Progress , Completed**)

The user stories with highest priorities are shown at the top

The user stories with lowest priorities are shown at the bottom

Prioritized Product Backlog				
ID	User Stories	Estimated (working days)	priority	Status
1	As a user I want to search for restaurant name or to filter restaurants based on ratings	4	High	New
3	As a user I would like to view all restaurants	2	High	New
5	As a user I would like to view each restaurant profile	4	High	New
7	As an admin I can add new restaurant to website	2	High	New
9	As a user I want to create an account on website	6	High	New
10	As a user I want access my account on website	6	High	New
2	As a user I want to add a review on any restaurant	2	Medium	New
4	As a user I want to add a rating on any restaurant	4	Medium	New
6	As an admin I can delete a restaurant from website	2	Medium	New
8	As an admin I can edit any restaurant profile	4	Low	New

The user story with ID 1 is top priority to start with

The user story with ID 2 is least priority to start with

Product Backlog

Exercise 2-1

Businessman would like to build a restaurant website where customer can view all restaurants inside website. Also, he can add review to any restaurant. In addition, he can search for any restaurant name. Also, low rating restaurants must be removed from website.

Team of two software Engineering decided to build the restaurant website.

Note that each member works 8 hours daily for only five days per week.

1. Design the product backlog and sprint backlog

Do not forget to mention the estimated working days and priority of each user story.

Product Backlog

Ex 2.1 Solution

Prioritized Product Backlog					
ID	User Stories	Estimated (working days)	priority	Status	
1	As a user I want to search for restaurant name or to filter restaurants based on ratings	4	High	New	
3	As a user I would like to view all restaurants	2	High	New	
5	As a user I would like to view each restaurant profile	4	High	New	
7	As an admin I can add new restaurant to website	2	High	New	
9	As a user I want to create an account on website	6	High	New	
10	As a user I want access my account on website	6	High	New	
2	As a user I want to add a review on any restaurant	2	Medium	New	
4	As a user I want to add a rating on any restaurant	4	Medium	New	
6	As an admin I can delete a restaurant from website	2	Medium	New	
8	As an admin I can edit any restaurant profile	4	Low	New	

Sprint Backlog

The default duration of software sprint is mainly two weeks.

The user stories of product backlog are going to be divided across sprints

The total time of sprint is mainly based on team size and their available working hours

The following product backlog was designed by two software engineering experts.

ID	User Stories	Estimated (working hours)	priority	Status
1	As a user I want to search for restaurant name or to filter restaurants based on ratings	8	High	New
2	As a user I want to add a review on any restaurant	10	Low	New
3	As a user I would like to view all restaurants	6	High	New
4	As a user I would like to view each restaurant profile	6	Medium	New
5	As a user I want to create an account on website	20	High	New
6	As a user I want access my account on website	20	High	New
7	As an admin I can delete a restaurant from website	8	Medium	New
8	As an admin I can add new restaurant to website	8	High	New
9	As an admin I can give authorization to restaurant owner user to create or edit his restaurant profile	4	Medium	New
10	As a owner Restaurant user I can edit my restaurant profile	15	Low	New
11	As a owner Restaurant user I can create my restaurant profile	15	Medium	New

The two software engineering experts decided to build website.

Each team member works for 20 hours per week.

**Based on the Example on the left side
The sprint has duration of 2 weeks**

**We have team of 2 experts
Each team member works for 20 hours
Total time of sprint = $2 * 2 * 20 = 80$ hours**

**Total time to finish project is 120 hours
Thus you will need two sprints**

**It is a good practice to leave between
10% and 20% of sprint capacity as a
buffer**

**Sprint capacity is 80 hours
The buffer is between 8 and 16 hours**

Sprint Backlog

Exercise 2-2

The following product backlog was designed by two software engineering experts.

ID	User Stories	Estimated (working hours)	priority	Status
1	As a user I want to search for restaurant name or to filter restaurants based on ratings	8	High	New
2	As a user I want to add a review on any restaurant	10	Low	New
3	As a user I would like to view all restaurants	6	High	New
4	As a user I would like to view each restaurant profile	6	Medium	New
5	As a user I want to create an account on website	20	High	New
6	As a user I want access my account on website	20	High	New
7	As an admin I can delete a restaurant from website	8	Medium	New
8	As an admin I can add new restaurant to website	8	High	New
9	As an admin I can give authorization to restaurant owner user to create or edit his restaurant profile	4	Medium	New
10	As a owner Restaurant user I can edit my restaurant profile	15	Low	New
11	As a owner Restaurant user I can create my restaurant profile	15	Medium	New

The two software engineering experts decided to build website.

Each team member works for 20 hours per week.

1. Design the sprint backlog
2. Will the team be able to deliver project within a month ? Justify your answer

Sprint Backlog

Ex 2.2 Solution

1. Design the sprint backlog

Sprint 1				
ID	User Stories	Estimated (working hours)	priority	Status
1	As a user I want to search for restaurant name or to filter restaurants based on ratings	8	High	New
3	As a user I would like to view all restaurants	6	High	New
5	As a user I want to create an account on website	20	High	New
6	As a user I want access my account on website	20	High	New
8	As an admin I can add new restaurant to website	8	High	New
9	As an admin I can give authorization to restaurant owner user to create or edit his restaurant profile	4	Medium	New

Sprint 2				
ID	User Stories	Estimated (working hours)	priority	Status
4	As a user I would like to view each restaurant profile	6	Medium	New
7	As an admin I can delete a restaurant from website	8	Medium	New
9	As an admin I can give authorization to restaurant owner user to create or edit his restaurant profile	4	Medium	New
11	As a owner Restaurant user I can create my restaurant profile	15	Medium	New
2	As a user I want to add a review on any restaurant	10	Low	New
10	As a owner Restaurant user I can edit my restaurant profile	15	Low	New