# User Scenarios for “IT Ski Resort”

# Introduction

The main goal of this document is to give the reader a big picture of the major functionalities of the system presenting the interactions between the different actors involved in the execution of its functionalities.

We will present three scenarios:

* *Access Scenario*: user wishes to access the structure and has to get a daily or a periodic access (more than one day). Immediately after the insertion of personal details and the activation, the reception gives him a RFID tag (can be of many shapes and materials, like plastic or silicon wristband, keyfob etc.) that is connected to a virtual credit account. This RFID tag can be then used to purchase goods/services inside the Ski resort area.
* *Services fruition Scenario*: user has obtained access to the structure and wishes to buy goods/services by RFID tag, or participating entertainment activities offered inside.
* *Exit Scenario*: user has spent his time inside the structure and wishes to leave it.
* *Admin Scenario*: Configuration procedures made by Administrator to complete and activate functionalities offered by the system.

For each scenario, a preview of actors, major functionalities and main interactions will be introduced.

# Scenarios

## Actors description

A table of actors is provided to describe accurately their roles and responsibilities. See document “Actors Table“ for further information.

## Access Scenarios

Next you’ll find the scenarios illustrating the access procedures needed to accomplish the check in of different kind of clients (daily or periodic customer). Gate trespassing procedure is regulated by turnstiles equipped with RFID readers. This is why each customer needs an RFID tag that will be provided by a box office outside the structure. This paragraph will then explore the other main functionalities hosted by the box office module.

### Actors involved

The next scenarios require the presence of these actors:

* Box Office Employee: Simon
* Box Office Desktop Module

### Major Functionalities offered

Arriving at the box office, the customer will have to choose between a daily access or a subscription for a longer period (possibly for a week, a month, etc). Following the decisions of the customer, the Box Office Employee can:

* Execute the check in for a **daily access**, providing the customer with the RFID tag, eventually giving him access to additional services (for example winter/ski equipment or sun bed rental). It has to be also possible to process customer groups in a single procedure.
* Execute the subscription for a **periodic access**, providing the customer with the RFID tag, eventually giving him access to additional services (for example winter/ski equipment or sun bed rental). The procedure should be executed singularly for each customer.
* Handle the periodic customer profile by:
  + Visualizing it;
  + Modifying it;
  + Deleting it;
  + Providing a new subscription formula (for example different kind of subscription, different period, etc);
  + Substituting the RFID tag (for example due to bad functioning).
* Handle the daily customer information by:
  + Visualizing them;
  + Modifying them;
  + Substituting the RFID tag (for example due to bad functioning).
* Execute the check out for daily customers, which requires the restitution to the box office employee of the RFID tag and the restitution to the customer of the bail given at check in and of the eventually remaining money amount on the virtual account.

**Scenarios:**

*Simon wishes to execute the check in for the* ***daily access*** *of a family (3 persons):*

* Simon accesses the Daily Access area.
* The Box Office Module present an interface making it possible to process a maximum of N clients;
* Simon:
  + adds three persons to the procedure;
  + inserts persons’ name and customer category (for example child, adult, student, etc)
  + assigns an RFID tag to each person;
  + eventually associates one or more additional services to them;
  + eventually associates an amount to the virtual account of one or more of the RFID tags.
  + Asks the family for the total amount;
* As the family pays the total amount, it gets:
  + three personal RFID tags;
  + a fiscal receipt for the entrance fee (if applicable) and for the additional services requested during the previous step;
  + a not fiscal receipt for three bails and eventually for the amount put on the virtual account.

*Simon wishes to execute the subscription for a* ***periodic access:***

* Simon accesses the Periodic Access area.
* The Box Office Module presents a subscription interface.
* Simon:
  + Indicates the subscription features (for example period, customer category, etc);
  + Inserts the customer’s personal data;
  + Assigns an RFID tag to the customer;
  + Eventually associates one or more additional services for the subscription period;
  + Eventually associates an amount to the virtual account of the RFID tag;
  + Asks the customer for the total amount;
* As the customer pays the total amount he gets:
  + A personal RFID tags;
  + A fiscal receipt for subscription made;
  + A not fiscal receipt for the bail and eventually for the amount put on the virtual account.

## Services fruition Scenarios

In these scenarios the main functionalities offered by the system once the customer has accessed the structure will be presented. This functionalities will be precisely described through a careful description of the interactions between different actors involved.

### Actors involved

These scenarios require the presence of these actors:

* Generic Customer: Paul (encloses the periodic and daily customer ); this actor is involved in functionalities available for both periodic and daily customers.
* IT Kiosk
* Selling Point Employee: Carl
* PDA
* Mobile Employee: Mike

### Major Functionalities offered

Once he has subscribed, received his RFID tag (can be a wristband, keyfob or anything else), charged the related virtual account and accessed the Ski resort area , customer can :

* Buy goods from selling points;
* Buy additional services dealing with Mobile employee : examples of these services can be rental of winter/ski equipment, generic stuff for solarium area (sun-bed, etc.) etc. .
* Access the IT Kiosk, to consult and manage the status of his virtual credit account, password and subscription.
* Access the IT Kiosk to buy additional services (e.g. paying for an additional sun-bed for the solarium area, rent a snowboard etc.), or to subscribe to entertainment activities (e.g. snowboard or ski courses).
* Access the IT Kiosk to consult news inserted from the management personnel.

### IT Kiosk usage scenario

*Paul wishes to access the IT Kiosk :*

* He activates the access procedure from the available touch screen, after that IT Kiosk asks Paul to place his RFID wristband near the RFID reader.
* IT Kiosk reads the RFID tag and sends user the main screen, showing the different areas that he can access.

**N.B.**(note that IT Kiosk didn’t ask for a password at first access making the access to services/activities and news areas as quick and simple as possible. These areas don’t contain in fact private information. Instead, IT Kiosk will ask a password to complete the purchase procedure, for activities/services, or to access private areas like the account status one or the profile one)

Once accessed the IT Kiosk , Paul can: consult news related to events or activities of the Ski resort, manage his virtual credit account, buy additional services, subscribe to entertainment activities and, only if he is a periodic subscriber, he can manage his profile. In fact, the system can have personal details only of this category of clients, since the daily one is considered only a visitor and saving his personal information is not so important for marketing statistics.

*Consultation of News and Activities information*

* Paul wishes to know if there are interesting events or activities held this week in the structure and accesses the news area.
* IT kiosk shows a screen containing lists of news and events with their related descriptions.
* Paul can now consult news inserted by the direction.

*Services purchases and Activities Subscription*

* After a quick consultation of the news, he discovers that a snowboard course is going to be taken in the afternoon and decides to subscribe to this activity. In addition, he has to rent an helmet since it’s a necessary requirement to participate.
* Hence, he has to access the Services and Activities area to subscribe to this activity and to rent a new helmet.
* After the selection, IT Kiosk shows a screen listing available services and activities, a shopping cart to trace his purchases and a button to check out services and/or activities selected.
* Paul selects the afternoon snowboard course and the helmet rental service and proceeds to checkout.
* IT Kiosk starts the payment and , if he has enough money, it confirms the purchase/subscription and prints a receipt, that he will bring to the responsible of the course and the rents shop.
* He is ready to take the course.

*Charging RFID credit account*

* After the snowboard course, Paul wishes to have a break and refreshing at the bar area. But, he doesn’t remember if he has enough money on his account considering the last purchases.
* Hence, he has to check on IT Kiosk the status of his account. He repeats the access procedure (see before) and tries to access to the credit account area.
* Since it’s a private area containing personal information, IT Kiosk will ask to insert also his password to avoid that any other people can have access just using his wristband in the case he lose it.
* After the password insertion, IT Kiosk confirms (according to authentication checks) the access and shows a screen containing account details.
* He consults his status and discovers he has few money; hence , he decides to increase his credit selecting the related button.
* IT Kiosk asks for introducing money into the cash acceptor.
* Paul completes the introduction and confirms the charge.
* He can now go to the bar or to the solarium area to purchase goods and/or services. ( can continue the example flow from 2.3.4 scenario)

Managing personal details and renewing periodic subscription: Paul wishes to consult his personal details to check their correctness and eventually modify them, or wishes to modify his password since he thinks that the actual is not so safe. But, as mentioned in the N.B. note in the access procedure, Paul owns a personal details area only if he is a periodic subscripted customer. On the other hand both the daily and periodic customers own a password modifying area, since they have a virtual credit account.

Let’s assume that Paul is a periodic customer

* Paul wishes to consult his personal details and selects his private area.
* IT Kiosk shows a screen containing his personal details and the subscription details.
* Paul now checks his details and discovers that his address is wrong. He modifies it and confirms.
* IT Kiosk check the operation and confirm according to modification constraints.
* From the Subscription area, Paul sees a message notifying that his subscription is expiring in one week. So he decides to renew it selecting the related button.
* IT Kiosk starts the payment procedure asking to place his RFID tag over the RFID reader, to insert his password and confirm the operation. After the related checks, IT Kiosk confirms the renewing.

### Buying goods from a selling point scenario

This scenario is showing an instance of a transaction taking place in a selling point. For instance, let’s assume that the selling point is a bar.

Paul has entered the bar area and wishes to buy a drink, specifically a coke.

* Paul goes to the bar, and asks the barman a coke.
* The barman gives him a coke in a glass.
* Paul drinks his coke. And notifies the barman that he wants to pay.
* The barman says he’s got 2 possibilities:
  + He can pay with money.
  + He can use his RFID tag to pay.
* Since he’s got money on his RFID credit account, he decides to pay with the RFID tag.
* The barman activates then a procedure to let the customer pay with the RFID tag. A window is presented to the customer, asking him to put his RFID tag near in order to allow the system to read the ID associated to it.
* Paul puts his RFID tag near to the reader that is over the table.
* In the previous window, the system asks now to put a password associated with the customer’s account.
* Paul puts his password.
* At this point, the transaction went fine, and the payment is completed. A receipt is printed and Paul can now leave the bar and continue to have fun inside the ski resort area.

### Buying a service dealing with a Mobile Employee (solarium area)

Paul has bought the sun bed service from the IT Kiosk and, after demonstrated (with his receipt) to the access responsible of the solarium area that he has the right to use this service, he receives his sun bed and sits.

He’s now sitting in the sun bed, sunbathing. After sometime he’s enjoying the sun, his daughter, Mary, arrives from school in the Ski resort, so Paul needs another sun bed for his daughter.

* Paul calls Mike, the Mobile Employee, to notify him he wants to buy a new service.
* Mike, through his PDA, gets a list of all the service available and asks Paul what kind of service does he want to buy.
* Paul tells Mike he wants a sun bed for Mary, his daughter.
* Mike selects the functionality in his PDA that is used to buy services, and select one sun bed.
* The system asks the customer to put his RFID tag near to the reader in the PDA, and to insert a password to confirm his identity.
* Paul puts his RFID tag near to the PDA and after he get a message of correct identification of the RFID tag, he inserts the password.
  + The system at this point shows a message to inform about the correct transaction. A receipt is printed with a portable printer, and Mike goes to take the sun bed for Mary.

## Marketing support Scenarios and functionalities

In these scenarios the main functionalities offered by the system for supporting marketing activities will be presented. The system will help the management getting a big number of information about customer’s activity and behavior in order to use them as a base for marketing strategical decisions.

In the following sections, we start to present information sources and the related functionalities based-on.

### Entities involved

Following descriptions require the presence of these entities:

* Periodic Customer
* IT Kiosk
* Generic Screen

### Information sources

As mentioned above, the system will help the management by supporting marketing activities, but, since the goal of these activities is to offer a better service to the customer and increase company’s revenues, is necessary to gather a large quantity of information on customers.

In the following sections let’s analyze what kind of information are needed and how to gather them.

**Customer’s preferences**

At the instant of a subscription, customer receives a form to complete. He fills it with his personal details (name, surname, address etc.) and his preferences in terms of putting a thick on some of the pre-defined preferences boxes indicated on the form. These information are taken by the employee that will put them into the system. An example of the preferences is a list as below:

* Sport
* Fashion
* Technology
* Music
* Entertainment
* Nature
* Shopping
* Others…

Customer’s preferences gathering is considered a simple way to collect as more as possible precise information on customer since it involves him directly. Collecting general preferences seems a simple procedure to accomplish but it hides some problems. Management has to decide properly what kind of categories to put on the form since they will influence considerably the efficiency of marketing support activities. In addition, some customers are not so available in helping this procedure, because they think it’s only a loss of time. Management has to resolve these problems operating a depth research on customer preferences, even asking to marketing experts, and involving as more as possible customer in accomplishing this activities, for example communicating them that this procedure could increase the quality of service.

**Customer’s trends**

Purchases

Every purchase category will be traced together with the preferences of the customer who has done it. Registering different preferences profiles for every category of purchase, can give the system the possibility of discovering unknown strict relationships among preferences. The system will now be able to suggest a service or an activity to customer, not only considering his profile but also similar profiles of people that have already done a purchase.

This is the simplest way to gather information because it does not require a direct involving of the customer, but its efficiency increases exponentially as the dimension of the DB increases.

Attendance

The system can trace the number of customers’ accesses to the structure in order to help management to understand what periods and time slots result more crowded or almost empty. This will be very useful to understand how to allocate human resources during different period or time slots.

The gate device (e.g. turnstile with a RFID reader) can trace accurately accesses. An accesses log will be produced.

**Customer’s opinion**

Through the IT Kiosk, the system can ask customer to give an opinion about services consumed or activities attended by him. This will help the management to trace the quality of the services and activities offered in order to improve them continuously.

### Functionalities

This paragraph will describe how data (see information sources) are collected and used by the system.

*Getting access: insertion of preferences*

While subscribing a periodic access, customer fills a form with personal details and preferences, that will be then inserted by the box office employee into the system. Preferences can now be used as base for:

* + Services selling procedures
  + Activities subscription procedures
  + Advertisements showing procedures
  + Quality improvements for services and activities

*Services selling procedures*

After accessed the structure, customer can buy additional services through IT Kiosk or services assistant provided with PDA. Let’s consider the case of buying trough IT Kiosk that could result more useful for explaining the complete functionalities because it involves customer directly.

After he accesses the IT Kiosk and the services area, customer can buy an additional service. Instead of presenting a simple list, the system can consider the information about his preferences and purchases history to suggest more appropriate activities (a suggested area can also be implemented to present services to him appropriately). Customer can decide of course to buy suggested services or not.

System can also implement a short-time advertisement visualization between frames. It represents a good way to promote goods, events, activities, services considering again his profile.

*Activities subscription procedures*

After he accesses the structure, customer can subscribe to entertainment activities through IT Kiosk. Since there are some activities that are more appropriate for certain profiles, an efficient suggestion by the system could increase the number of subscribers and also the quality of the service.

After he accesses the IT Kiosk and the activities area, customer can subscribe to activities. Instead of presenting a simple list, the system can consider the information about his preferences and subscription history to suggest more appropriate activities (a suggested area can also be implemented to present activities to him appropriately) . Customer can decide of course to subscribe to suggested activities or not.

System can also implement a short-time advertisement visualization between frames. It represents a good way to promote goods, events, activities and services considering again his profile.

*Advertisements showing procedures*

Goods, services, events and activities promotion, usually results a strategic way to increase own revenues; to take advantage from this , a company can spread LCD screen all around the structure showing advertisement. Having customers preferences obtained through the normal subscription procedures, system can propose a particular visualization based on algorithms that consider in the best possible way preferences of every customer that is inside in some intervals. This result in an optimization of the advertisement showing procedure in order to maximize revenues.

## Exit Scenario

### Actors involved

These scenarios require the presence of these actors:

* Daily Customer: Jim
* Box Office Employee: Simon
* Box Office Desktop Module

### Major Functionalities offered

The only procedure necessary at the exit is related to the Daily Customer. When he has to leave, he needs to reach the box office outside the structure again. This is because he may want to get back the bail given for the use of the RFID tag and eventually the credit left unspent. The Periodic Customer, in fact, has his own RFID tag and will have to keep it for all the period subscribed. A procedure similar to the one presented below for the Daily Customer will exist for the Periodic Customer whose subscription period has expired.

*Simon wishes to execute the check out for Jim, a daily customer:*

* Jim reaches the box office outside the structure and notifies to Simon his intention to leave.
* Simon asks Jim for his personal RFID tag.
* Once Simon has Jim’s personal tag, he accesses the Customer Handling area indicating that he wants to access the information associated with a tag.
* The Box Office Module asks Simon to place the tag near the reader. Once Simon has done that, if the tag is read correctly, the Module presents the information related to the tag.
* Now Simon can indicate that Jim wants to leave, and by doing so he starts the check out procedure that will control if there’s still some credit on the virtual account (since the box office has to return the money left unspent).
* At the end of the procedure Jim can leave the box office eventually with the cash money that resulted unspent.

## Admin Scenario

In order to conclude this overview of the functionalities of the system, we’ll now have a quick look at the functionalities that the administrator should exploit in order to make the system work properly. In our idea, the Administrator should be able to work from a remote location: the system must have a module that allows to connect remotely to the central DB in order to modify the useful information.

* As we mentioned in the scenarios showed above, the Administrator should be able to manage first of all Customers. He must be able to create or to modify different subscription types, in order to satisfy the customer’s needs. He can decide for example to create a 3 days subscription because from a marketing research he notices that many people are coming for the whole weekend, so the daily access is not enough and the weekly subscription is too much.
* Types of client are a very important feature for the marketing and client satisfaction handling. Different kind of clients can be created, and different attributes can be given to each of them: just to give an example, children who’re less than 5 years old can be allowed to get in for free in the structure, or people who’ve get in more than 10 times can reach the status of “golden customer” and get some discount in buying the services inside the resort.
* Administrator can manage also services that are sold inside the structures. He should be able to insert new services as they’re introduced, or to modify them in case something changes, for example, price or quantity available.
* Another feature is the possibility to add, remove or modify news. As we mentioned above, both in the IT Kiosks and in the commercial screens around the resort, there are news showed in order to call the attention of the customers. The administrator can then decide to add news, specifying some attributes such as date and category, and to modify or delete them if something changes.