Personal Information Manager

A User's Manual

Group 6

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Contents

1 Personal Information Records

In the Personal Information Manager (PIM), you can create your Personal Information Record (PIR) to store the information. There are four types of PIRs you can create: Note, Task, Schedule, and Contact. Every PIR has an unique identifier.

1.1 Note

You can create Note PIRs to take quick notes. An example output of a Note PIR:

```
Note: note1
Text: This is note1.
```

1.2 Task

You can create Task PIRs to manage your tasks. A Task PIR has a text description and a deadline. An example output of a Task PIR:

```
Task: task1
Description: This is task1.
Deadline: 2023-11-23,19:00
```

1.3 Schedule

You can create Schedule PIR to manage your schedules. A Schedule PIR has a text description, a starting time and a alarm time. The starting time should be after the current time. The alarm time should be between the current time and the staring time. An alarm message will be printed out at the alarm time. An example output of a Schedule PIR:

```
Schedule: schedule1
Description: This is schdule1.
Starting time: 2023-11-30,19:00
Alarm time: 2023-11-25,19:00
```

An example output of an alarm message:

```
Alarm!
Schedule: schedule1
Description: This is schdule1.
Starting time: 2023-11-30,19:00
```

1.4 Contact

You can create Contact PIR to mange your contacts. A Contact PIR has a name, an address, and a mobile number. An example output of a Contact PIR:

```
Contact: contact1
Name: Someone
Address: 15 Some Street
Mobile number: 9090 9090
```

2 Syntax Format

In PIM, different types of values should be in a certain format. There are four types of values: keywords, strings, date-times, and identifiers.

2.1 Keywords

In PIM, there are 19 keywords. They are used to represent commands, PIR types, and operators. Table 1 shows the command keywords. Table 2 shows the data type keywords. At last, table 3 shows the keywords used for operators.

create	modify
search	load
save	delete
print	exit

Table 1: Commands

Note	Task
Schedule	Contact

Table 2: PIR types

<	>
=	&&
||	!
*	

Table 3: Operators

2.2 String

A string value in PIM should be surrounded by quotation marks. An example string input is:

```
"This is an example string."
```

2.3 Date-time

The date-time value in the PIM should be in a format like "yyyy-MM-dd,HH:mm". For example, 7 pm on September 23, 2023, should be like this:

```
2023-09-23,19:00
```

2.4 Identifier

A unique identifier is assigned to a particular PIR. An identifier should start with a letter or "_", and it cannot be any of the keywords. Here are two example identifiers:

```
_mynote
MyTask
```

3 Commands

In the PIM, there are 8 commands. These commands can interact with the PIM and manipulate PIRs.

3.1 Creating a PIR

To create a PIR, run the create command.

```
create <PIR Type> <Identifier>
```

Here is an example command to create a Note PIR. This PIR has an identifier *myNote*. After inputting this command, the PIM will ask you to input your text.

```
create Note myNote
```

3.2 Modifying a PIR

To modify a specific PIR, run the modify command. You need to provide the identifier of the PIR.

```
modify <Identifier>
```

Here is an example command to modify a Task PIR which has an identifier as *task1*.

```
modify task1
```

After inputting this identifier, you will enter the modify modify mode. The modify mode of a Task PIR is like this:

```
1. Identifier
2. Description
3. Deadline
0. Exit modify
Choice:
```

Choose the fields you wish to modify by inputting the number according to the text prompt. Input 0 to exit modify mode.

3.3 Deleting a PIR

To delete a PIR, run the delete command. You need to specify the identifier of the PIR you want to delete.

```
delete <Identifier>
```

3.4 Searching for PIRs

To search for PIRs, run the search command.

```
search <Criteria>
```

You need to specify a search criteria. A criteria can be a PIR type, a date-time, an identifier, or a piece of text. You can also connect search criteria with logic operators: And operators (&&) and Or operators (||). You can use multiple operators to connect your search criteria.

Logic Operators: Let A and B be two search criteria. Criteria A && B will output the results of $A \cap B$. Criteria A || B will output the results of $A \cup B$.

Date-time: The PIM uses =, <, > to denote equal, before, and after a given time. For example, a search criteria that represents before 7 pm on September 23, 2023, is <2023-09-23,19:00.

Text: To search for PIRs that contains a piece of text, use the string criteria. The text should be inputted as a string value, which means that it should be between a pair of quotation marks. For example “abc” is a search criteria that contains the text abc.

An example search command is shown as follows. This command is searching for PIRs that is of Task type, contains a piece of text abc, and has a date-time value that is after 7pm, September 23, 2023.

```
search Task && "abc" && >2023-09-23,19:00
```

3.5 Printing PIRs

To print a specific PIR, run the print command. You need to specify the identifier of the PIR you want to print.

```
print <Identifier>
```

To print out all the PIRs, use the * operator.

```
print *
```

3.6 Save a PIM File

All the PIRs you created in a session can be saved within a single file with the extension .pim. To save your PIRs, run save command.

```
save
```

After inputting the save command, the PIM will ask you to input the filepath. An example filepath is `C:\Users\somebody\demo` where demo is your file name.

3.7 Load a PIM File

You can load a saved PIM files to recover all the PIRs you created, including alarms. Loading a PIM file will clear all the existing PIRs. You should save your working PIRs before loading a PIM file. Note that the alarm text will print out immediately after loading a PIM file if the current time is after the alarm time. To load a PIM file, run the load command.

```
load
```

After inputting the command, the PIM will ask you to input the filepath. An example filepath is `C:\Users\somebody\demo.pim`. Note that you need to input the extension of the file.

3.8 Exiting the PIM

To exit the PIM, run the exit command.

```
exit
```

4 Exception Handling

The PIM can handle your invalid input. When your input is invalid, the PIM will tell you the error and the session will be resumed.

4.1 Unexpected Character

If your input command contains any unexpected characters, the PIM will print out a message to notify you. Here is an example.

```
PIM> print {
Unexptected Character
```

4.2 Invalid Command Keyword

If your input command is wrong, the PIM will print out a list of valid commands and their descriptions.

```
PIM> CReate
Commands: create - Create a PIR.
          modify - Modify a specific PIR.
          delete - Delete a specific PIR.
          print  - Print a specific PIR or all the PIRs.
          search - Search for PIRs based on criteria.
          save   - Save all the PIRs to a single .pim file.
          load   - Load a .pim file.
          exit   - Exit the program.
```

4.3 Missing Parameters

The PIM will notify you when your input command is missing parameter. For example, a create a command can be missing a PIR type parameter or an Identifier parameter.

```
PIM> create
create <PIR type> <Identifier>
PIR types: Note, Task, Schedule, Contact
```

4.4 Invalid Date-time

When your input date-time value is not in the correct format, the PIM will notify you. An example search command with wrong date-time format is shown as follows.

```
PIM> search =2020-10-10 19:00
Invalid datetime format. (yyyy-MM-dd,HH:mm)
```

4.5 Invalid Alarm time

An alarm time for the Schedule PIR should be after the current time and before the starting time. An example to create a Schedule PIR with invalid alarm time is shown as follows.

```
PIM> create Schedule s1
Description: This is s1.
Start time: 2023-12-20,19:00
Alarm time: 2023-12-22,19:00
Alarm time cannot be after start time.
```

4.6 Unterminated String

An input string value should be in between a pair of quotation marks. When your input is missing a ending quatation mark, the PIM will notify you. An example is below.

```
PIM> search "abc
Unterminated string.
```

4.7 Duplicated Identifiers

When you are trying to create a PIR with an identifier that is already existed, the PIM will notify you. An example is as follows.

```
PIM> create Note note1
PIR with identifier "note1" already exists.
```

4.8 No Matching Result

When you are trying to search, modify, delete or print a PIR that is not existed. The PIM will print out a message to notify you. Here is an example.

```
PIM> print abc
PIR "abc" does not exist.
```

4.9 Exceptions During Creation and Modification

If there are exceptions when you are creating or modifying a PIR, then no changes will be applied. The following example tries to modify the identifier of a PIR to an invalid identifier.

```
PIM> modify note1
1. Identifier
2. Text
0. Exit modify
Choice: 1
Identifier: 0909
Invalid identifier.
Choice: 0
PIM> print note1
Note:note1
as
```