

Federation University Australia at IIBIT (Sydney)

School of IT
Sydney Campus

Assignment Cover Page: Individual Work

COURSE NUMBER:

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STUDENT'S LAST (FAMILY) NAME: Jaiswal

STUDENT'S GIVEN NAMES: Bishal kumar

STUDENT NUMBER: 30358366

FED UNI: IIBIT Sydney

COURSE NAME: Comparative Programming Language

PROGRAM OF STUDY: Master of Technology (software Engineering)

TUTORIAL GROUP (if applicable): _____

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LECTURER: Jisha Sunny Manjaly

TUTOR (if applicable): Shahzad Asif

TITLE OF ASSIGNMENT: Parallel Implementation

WORD LENGTH: _____

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Bishal Jaiswal

Signature of Student

Note: It is necessary to sign the above declaration. A lecturer/tutor or an examiner reserves the right not to mark this assignment/work if the declaration has not been duly signed.

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Introduction

According to the given assignment 3 of the Subject code ITECH 5403, regarding comparative programming on the three different language such as java, Python and Lisp for the Hotel Room Booking. The parallel implementation of three different program is to give us an idea to choose the best programming language to build a specific application or system. In this assignment we are given three programming language that are Python, Java and Lisp to build the hotel booking application. Moreover, for the compilation of the source code I have used the most efficient software application which required to develop the HOTEL ROOM BOOKING application, however there are many other applications to compile these source code but as a memory requirement I choose the following software:

Java: Eclipse application.

Python: Spyder application.

LISP: LispIDE application.

Java implementation

The java is a separate platform which allows you to operate software published in Windows on the Mac operating system. Code reusability are the other features in Java, we can use the same software in a different class again and again. Java has a different feature that automatically cleans storage, also called instant waste collection, which can be specified. We don't have to remove the data from the memory, which saves programmer time and effort, which is one of Java's functions.

The request must allow the customer to add the guest, take the guest and the guest ID when transferring the guest. The request must also include the hotel reservation application. The program must allow rooms and rooms to be added, the number of the room and the room capacity must be added. The other features of the application are to book a bed, first request the customer ID, room number, guest card, monthly checkout, day of check-out, month of check-out and day of check-out. Additional features include viewing the reservation, whether it is via Guest ID or Room Number, and the ultimate escape feature is to bring us home to the panel and begin a new reservation.

The functions for developing the hotel room booking are:

- public Guest getGuest()
- public Room getRoom()
- public String getNumberOfGuests()
- public int getCheckinDay()
- public int getCheckoutDay()
- private void addGuest()
- public Guest (String name, Integer id)
- public Integer getRoomNumber()
- public Integer getRoomCapacity()

Python Implementation

Python is the language of programming understood, object-oriented, high-level and general. With its remarkable whitespace, Python stresses the readability of the software. The language of Python is a vibrant set of waste which implies that it can sustain several paradigms for programming. Python language has numerous standard libraries and is therefore referred to as batteries.

The hotel reservation request must be specific, it must be possible to connect the customer, take the guest's name and guest ID and add the guest to the application. The program shall allow beds to be added and beds added, allowing room number and space capability to be added. The other features of the application are that you can reserve the table and ask for a customer ID, room number, guest code and monthly check-in, log in day, monthly check-out and day of check-out. Other features are to view the reservation, either with a guest ID or by seat amount and the ultimate escape feature takes us directly to the panel and can begin a reservation.

The functions for developing the hotel room booking are:

- `def add_guest():`
- `def add_room():`
- `def add_bookings():`
- `def view_bookings():`

- `def option_switcher(value):`
- `def main():`

Lisp Implementation

Lisp programmers, by controlling the source code as the data structure, promote the macro scheme.

The program Lisp promotes Artificial Intelligence through its automated storage management concepts, tree data structures, higher order features, dynamic typing, recursion, compiler self-hosting and looping. It is a high level language, commonly distributed throughout the globe.

In the lisp specification program used the scheme based on expression to fix the design issue. I also used data structures like the grid to temporarily hold information on the scheme. Operations such as adding values, search values are performed to ensure the program complies with the given specifications. Various features are developed for modularizing and debugging the scheme.

The functions for developing the hotel room booking are:

- `(defun option_switcher(selected))`
- `(defun add_guest())`
- `(defun add_room())`
- `(defun add_bookings())`
- `(defun view_bookings())`
- `(defun main())`

Above are the few functions listed that I have created to develop booking application. The applications can add the guest, room and booking also it can allow user to view the booking and exit from the

Comparative Ease of Implementation

This assignment is parallel implementation of three different programming language the one is Java, and other two are Python and LISP. Talking about the Java language it is general purpose language which is class based and object oriented. The compiled java code can run anywhere in any platform that support the java language. The source code is compiled to bytecode then executed by the interpreter. Python is high-level, interpreted and general-purpose language. It is object-oriented approach to provide programmer helps to write clear and logical code. Python is garbage collection and it can support procedural, object-oriented and functional programming.

Lisp is the second largest high-level programming language. It was created for mathematical notation for computer programs. Lisp became the favored programming language for Artificial intelligence because lisp provide knowledge about computer science that includes data structures, automatic storage, dynamic typing, recursions, self-hosting compiler, loop, conditionals and functions and return to the menu.

Conclusion

To the nutshell, the principal motivation for this task is for teaching us to select the program's finest programming language. Of three languages, I found that the easiest word to write the code is python as I am familiar with Python and Java is also the good language to create company applications like the hotel reservation implementation. But Lisp isn't the right language to construct the business implementation like hotel reservation application in my view. Python is the brief and simple syntax language that makes coding the device like a reservation card very easy for all programmers. In Python, we do not have to use any types of data, so python assigns the data type automatically as required by the program.