

UNIVERSITY OF PUERTO RICO  
MAYAGUEZ CAMPUS  
ELECTRICAL AND COMPUTER ENGINEERING  
DEPARTMENT

Programming Languages Project Proposal  
**Voyage**

Felix González Garces  
Jonnattan Montes Ríos  
Joel Torres Rodríguez  
Osmar Milanés Hernández  
ICOM4036-036  
Prof. Wilson Rivera  
February 15, 2017

<b>Introduction</b>	<b>2</b>
<b>Language Features</b>	<b>3</b>
<b>Program Example</b>	<b>3</b>
<b>Implementation Requirements and Tools</b>	<b>4</b>
<b>Project Plan and Timeline</b>	<b>5</b>

# Introduction

The objective of this project is to create a programming language which facilitates the process of booking travel packages by a particular travel agency. The name of the language will be Voyage. What motivated the development of said language was that one of the members recently visited a travel agency and noticed the lack of this easy-to-use tool. Thinking as a programmer, he thought that if he was the person that had to book all the flights and the travel packages, it would be ideal to have a language that was specifically designed for this purpose. A language like this would be very helpful for any travel agency that would use it because it is an easy way to have all the possible packages easily accessible. The travel agent would be able to book stays, flights, guided tours, rental cars for different destinations and conveniently have all the information available to the customer. A numerous amount of people book flights at the last moment and with this language the travel agent would be able to present all the possible options to the customer right away so that he/she can make the most informed decision.

# Language Features

Voyage provides basic and useful features to make the travel process a simple one for both the user and client. Some of these features include:

- Create a travel package for the client
- Display available travel destinations
- Check flights available for a specific destination
- Make hotel and flight reservations
- Display client travel package information and cost

## Program Example

```
> createpackage Igor Buñuelo
> destinations
Orlando, FL
Las Vegas, NV
New York City, NY
Los Angeles, CA
Dallas, TX
Boston, MA

> flights NY 2/7/2017 5/7/2017
FlyEast $400
CloudUS $500
PlaneBlue $450
NorthEast $350

> fly NY PlaneBlue
> hotels NY
FlowerBay $150/night
HolidayExpress $100/night
ColumnNYC $190/night

> reserve ColumnNYC
```

```
> cars NY
Exitprize $50/day
Andbitz $60/day
Roam $55/day

> reserve Exitprize 4
> tours NY
CentralPark $40
MOMA $40
BronxZoo $30
StatueOfLiberty $60

> visit CentralPark MOMA
> book
Name: Igor Buñuelo
Destination: New York City, NY
Airline: Plane Blue
Hotel: Column NYC (3 Nights)
Rental Car: Exitprize (4 Days)
Tours:
    - Central Park
    - MOMA
Total Price: $1300
```

## Implementation Requirements and Tools

The tools needed to implement the proposed programming language are:

- **Python:** Voyage will be implemented using the Python programming language
- **PyCharm:** this Integrated Development Environment (IDE) will be used as our main programming platform
- **Python Lex-Yacc (PLY):** this implementation of lex and yacc parsing tools for Python will be used as an efficient way to implement the syntax and lexical analyzers

## Project Plan and Timeline

Task Name	Duration	Start	Finish
Design	3 days	2/21/2017	2/23/2017
Lexical Analyzer	10 days	2/27/2017	3/10/2017
Syntax Analyzer	10 days	3/13/2017	3/24/2017
Intermediate Code Implementation	9 days	3/27/2017	4/6/2017
Testing	5 days	4/7/2017	4/13/2017
Documentation	25 days	2/27/2017	4/13/2017
Final Report	6 days	4/18/2017	4/25/2017