



BCS Level 3 Software Development Technician Digital IT Apprenticeship End-point Assessment

Project C Holiday Chat Agent

**Version 1.0
July 2020**

Change History

Any changes made to the project shall be clearly documented with a change history log. This shall include the latest version number, date of the amendment and changes made. The purpose is to identify quickly what changes have been made.

Version Number	Changes Made
V1.0 July 2020	Document created.

Software Development Technician – Project C – Holiday Chat Agent

Project Overview and Objectives

Your customer, First Holiday Ltd, is a holiday business that sells package holidays.

First Holiday would like to create a chat agent that provides customers with a recommended set of holidays based on their responses to questions.

You have been selected to create a working prototype that will be demonstrated to shareholders that meets the requirements.

Subsequently, your documentation and code will be used by the technical team at First Holiday Ltd to create an enhanced customer version. The chat agent will be fully documented and follow industry standards.

This project tasks you with designing and building a Holiday Chat Agent prototype.

You will need to:

- 1. Design and build a Holiday Chat Agent that meets business requirements.**
- 2. Test the built Holiday Chat Agent meets requirements specified in the brief.**
- 3. Deliver the proof of concept solution within a maximum of 5 days.**
- 4. Provide appropriate documentation.**

Project Outputs and Deliverables

To demonstrate completion of the tasks you will be asked to provide a series of outputs, these should be submitted together with the synoptic project declaration.

Deliverable	Output	Suggested Evidence
Design	Create documentation to describe what the Holiday Chat Agent will do and how it will work. This is likely to include: <ul style="list-style-type: none">• Any assumptions made about the requirements.• Any changes or additions made to the requirements.• Textual and / or diagrammatic documentation of design elements, including use cases and / or sequence diagrams where appropriate.• A data model.• From the use case provided, design and implement your own prototype chat bot application.	Word document or PDF
Construction	Create application code and associated work products to implement the Holiday Chat Agent. Your code should be logically structured and follow good coding and architectural practices.	Files containing all the program code and associated work products including the data source.
Test	Create and execute a set of tests that demonstrate that the Chat Agent meets its requirements. For each test you should document its expected outcome and the actual result.	Use test template (Appendix) or any other appropriate format.
Document	Document the results of your work. <ul style="list-style-type: none">• Discuss any limitations of your design and / or implementation.• Propose future improvements.• Create a user guide.	Word or PDF document or similar. A video might be suitable for a user guide.

Project Information and Equipment

You will need to review all the information specified in the appendix. This will support you to deliver the key outputs and deliverables for this project detailed in the tasks.

- Background information.
- Chat agent specification.
- Holiday data.
- Test Template.

Your training provider and/or employer will provide you with all resources required to complete your project including:

- Laptop/PC.
- Internet access.
- An appropriate software development environment.
- Suitable document preparation software.

Apprenticeship Competencies Covered

Competency Standard
Logic: writes simple code for discrete software components following an appropriate logical approach to agreed standards (whether for web, mobile or desktop applications).
Data: makes simple connections between code and defined data sources as specified.
Test: functionally tests that the deliverables for that component have been met or not.
Analysis: follows basic analysis models such as use cases and process maps.
Quality: follows organisational and industry good coding practices (including those for naming, commenting etc.)
Communication: clearly articulates the role and function of software components to a variety of stakeholders (including end users, supervisors etc.)
User Interface: develops user interfaces as appropriate to the organisation's development standards and the type of component being developed.

On completion, please upload documentation relating to the project deliverables and a completed project declaration (provided separately) to the relevant folder location as specified by your training provider. Alternatively, please send to epateam@bcs.uk

Appendix

Background Information

First Holiday would like you to create a **Holiday Chat Agent** that provides customers with a recommended set of holidays based on their responses to questions:

- The component will be used as a functional prototype that will be used to demonstrate to shareholders and test, initially with a small number of customers.
- The component may run on any execution environment of your choice in a browser, or as an application on a desktop computer or a mobile computing device.
- The component should launch as a stand-alone application in that environment.
- The component should be designed and built to production standards.

You are advised to get a basic version of the Holiday Chat Agent working first, before adding richer features.

Chat Agent Specification

The Chat Agent must:

- Ask the user a minimum of two questions to identify possible holiday destinations based on the holiday data set.
- Provide user feedback to questions the Chat Agent cannot process the response to.
- Provide a recommended set of holidays to the user based on their responses.

Data

- The holiday data is to be loaded from a local file into the application. You can import your data as .csv or you may convert the data into another format for your program to load. You may consider basing your format on XML, JSON or any other format you wish. You may use online converters to automate this process.
- The holiday dataset has been provided in a file. A screenshot of the data can be seen in the appendix. You are free to expand the dataset if you wish.
- Responses to questions need to be stored temporarily in order to provide holiday recommendations.

User Interface:

- A simple GUI interface must be created for the Chat Agent.
(A command line interface is not permitted)
- The GUI interface should show a trail of the chat conversation for the session.

Submission

Your submitted work should contain all deliverables including: analysis and design, your code for review, test artefacts, user guide and a retrospective on how the endpoint is satisfied and meets the requirements.

Other considerations

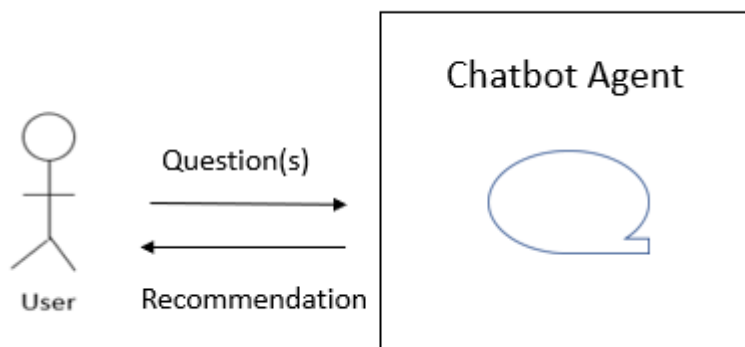
In addition to the functional requirements you should consider non-functional requirements. Even if the time constraints of the project do not allow for you to address these in the code, you should add some notes to explain the relevance and how you would improve the design and code to address these non-functional requirements.

Additional Information

If you choose to use external services, please read the Terms and Conditions. Some are free to use and some require you to enter payment details although often not chargeable for low volumes or development use. You are advised to read each thoroughly when carrying out your research before deciding if you wish to use any. It is not expected to use any external services to meet the specification.

Use Case Model

The UML Use Case model below shows the interactions that a user may have with the chat agent.



Data

A full set of holiday data is provided in .csv format **HolidayData.csv**. Below is a partial snapshot of the dataset. You are free to expand upon this dataset.

HolidayReference	HotelName	City	Continent	Country	Category	Star Rating	TempRating	Location	Price Per Per Night
8	The Cape	Cape Town	Africa	South Africa	Active	4	Mild	City, Coast	78
4	Twilight	Marrakech	Africa	Morocco	Relax	5	Hot	Desert, City	50
6	Castaway		Africa	The Maldives	Relax	3	Mild	Island, Remote	120
20	IceHotel	Base Marambio	Antarctica	Antartica	Active	5	Cold	Remote, Ice	270
1	Uptown	Bali	Asia	Indonesia	Active	3	Mild	Jungle, Remote	120
9	Desert Dreams	Dubai	Asia	U.A.E	Active	4	Hot	Desert, City	67
15	WearyTraveller	Paro Valley	Asia	Bhutan	Active	5	Mild	Jungle, Mountain	54
19	TechCity	Tokyo	Asia	Japan	Active	3	Mild	City, Coast	71
16	HotTimes	Jaipur	Asia	India	Relax	4	Hot	City, Desert	67
10	SeaViews	Bora Bora	Australia	French Polynesia	Active	3	Mild	Island, Coast, Remote	54

Additional Features

You are advised to get a basic version of the Holiday Chat Agent working first, before adding richer features.

Examples of additional features could include:

- Personalise the chat conversation by capturing the users name.
- Add further Chat agent questions beyond two that would facilitate a user to confirm a hotel booking.
- The user can ask their own questions and the chat agent will process and give a response.
- Store chat conversations to a local file.

Test Template

Test Number	Test Description	Test Tools	Expected Outcome	Results of Test	Pass / Fail