



BCS Digital Industries Apprenticeship Synoptic Project

Software Developer – Music Player

Version 1.2
November 2018

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 and Date	Changes Made
V1.0 August 2017	Document Created.
V1.1 July 2018	Submission email address amended
V1.2 November 2018	Declaration template removed. To be supplied in a separate document.

Project Overview and Objectives

You work for Rebmem Engineering that produces solutions for external clients. They wish to produce their own media player. They have the capability to produce the electronic hardware but need an interface to allow for the sale of the device as a portable music player.

Your manager would like you to take ownership of the initial concept.

You will need to:

1. Design, configure, test and install a Music player that meets business requirements.
2. Roll out within the agreed time frame of a maximum of 5 days.
3. Build an interface that allows for continuous improvement.

Project Outputs and Deliverables

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

Deliverable	Output	Evidence
Plan	<ul style="list-style-type: none">• Create a plan, diagram or sketch based on the business requirements• Create appropriate sequence diagrams	Word or PDF Document
Install / Configure	Create the following to install and configure your Music Player: <ul style="list-style-type: none">• Data Models• User interface design• Application code• Data structures	Screenshots, Photo or Video
Test	<ul style="list-style-type: none">• Develop and test software and user interfaces• Documenting your approach and results• Capture the test case and results	Use test template or similar Word / Excel / PDF
Implement	<ul style="list-style-type: none">• Provide documentation for further development, improvements and maintenance• Provide documentation of assumptions and limitations• Create a user guide document for the key users	Word or PDF Document

Project Information and Equipment

To complete this project, you will need to review all the information specified below which can be found in the appendices. This will enable you to deliver the key outputs and deliverables for this project detailed in the table above:

- background information;
- business requirements;
- test template.

In addition, you will be provided with access to a virtual platform or alternatively if a virtual platform is not available, your training provider and or employer will provide you with all resources required to complete your project including:

- computer equipment with access to the Internet;
- appropriate tools for creating designs.

Competencies and Knowledge Standards

Below is a list of competencies and knowledge standards covered by this project.

Knowledge Standards

- Understands and operates at all stages of the software development lifecycle.
- Understands and applies software design approaches and patterns and can interpret and implement a given design, compliant with security and maintainability requirements.
- Understands and applies the maths required to be a software developer (e.g. algorithms, logic and data structures).

Competency Standards

- Logic: writes good quality code (logic) with sound syntax in at least one language.
- User interface: can develop effective user interfaces for at least one channel.
- Data: can effectively link code to the database / data sets.
- Test: can test code and analyse results to correct errors found using either V-model manual testing and / or using unit testing.
- Design: can create simple data models and software designs to effectively communicate understanding of the program, following best practices and standards.

Appendix A – Background Information

The following additional information has been provided to support you with the completion of your project.

Background Information

- Rebmem Engineering has provided electronic goods for several years to third parties and are now looking to expand their offering to supply interactive goods.
- They produce portable storage devices and have worked on a new device that will allow the storage and playback of music.
- They would like a simple interface built to interact with the device to allow the continuation of development. (Interaction with the firmware will be discussed and implemented at phase two.)
- The client is a large organisation and if this goes well could mean a large contract.
- Your role will be to take on the development of the interface ensuring that you meet the first phase requirements; any additional elements you can include will help but the deadline is close.
- The hardware is still being tested so changes will be required as it is developed. Ensure that you fully document each step to allow us to carry out any changes later.

Appendix B - Business Requirements

Business Requirements

The Music player must:

- Allow music playback.
- Allow music playback when the device becomes idle. The device will automatically switch to idle mode to save power if no user interaction is recorded over a 30 second period.
- Have a random shuffle function.
- Have a search option for audio files within a media database.
- List display options by song track or album.
- Allow for a Creation of a song play list.
- Have user control over playback.

Appendix C - Test Template

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

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

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