**Subject:Produce a software artefact that implements the required data structures for a given scenario.**

**Outcomes Assessed:**

Appraise and implement a software design that incorporates data structures.

For this assessment you will work individually.

You will need to hand in a report, develop the proposed solution and demonstrate your work in class.

**Description (choose one problem only):**

**Problem 1:** In a town there is a list of Points of Interest representing customers that are waiting for parcel deliveries. Each point has three attributes (latitude and longitude and number of parcel). An employee of a courier service needs to pass by as many POIs possible withing his/her working hours (daily working hours).

Design and implement a solution that will address this problem. Sample POIs will be given in a txt file.

**Problem 2:** Find and/or Edit file names in a directory hierarchy. If no starting point is specified, `root' is assumed.

Design and implement a solution that will address this problem. You approach should minimises the expected number of queries.

**Deliverables:**

1. Report (900 words +-10%)
2. Python Code

**The Report should include:**

* Student’s information, Your full name, program title and user identification (e.g. zz009), word count
* Table of contents
* Introduction
* Definition of terms
* Presentation of the case study / problem addressed
* Identification of needed data structures for the scenario and rationale
* Presentation of Solution
* References

Bear in mind that in the report you must discuss your selection of data structures within a short report outlining alternative approaches and providing justification for the path taken

**References and citation**

Written work should be referenced using the standard Harvard referencing style

It is expected that the Reference List will contain between **five and ten sources**. As a MINIMUM the Reference List should include **one refereed academic journals and two academic books**

**Assessment Criteria**

Relevance 15%

Knowledge 20%

Argument/Analysis 20%

Structure 10 %

Presentation 15%

Written English 10%

Research/Referencing 10%