

Assessment Brief



| | |
|------------------------------------|---|
| Class Group: | CA |
| Assessor: | Joan Shalvey |
| Component Title & Code: | Programming and Design Principles, 5N2927 |
| Assessment Technique: | Skills Demo |
| Weighting: | 25% |
| Title: | Skills Demo #2 |
| Issue Date: | 3 rd March 2023 |
| Submission Date: | 22 nd March 2023 |
| Learning Outcomes Assessed: | 2, 4, 6, 7, 9, 10, and 11 |

Guidelines: You are required to design, code, and test a solution to the problem detailed on the next page. Submission details are given at the end of the narrative.

| Assessment Criteria | Available Marks | Marks Achieved |
|--|-----------------|----------------|
| Algorithm | 4 | |
| Accurate Programming | 14 | |
| Appropriate Testing | 4 | |
| Accepted Industry Standards for Coding | 3 | |

Learner Name:

I confirm that:

1. I have been provided with information about Cork ETB's assessment and appeals procedures and my responsibilities with regard to assessment.
2. The assessment work produced by me is all my own original work.

Learner Signature:

Date:

Note to Learners:

- Plagiarism is the presentation of someone else's ideas, arguments, concepts or work as your own by failing to reference or acknowledge it properly. All such work must be acknowledged. Any learner, who presents another's work as their own, will be investigated in line with Cork ETB Assessment Malpractice procedures and may be awarded a zero grade.
- Learners should keep copies of all assessment submitted, where applicable.

MTS Healthcare policies are priced as follows:

- The annual cost of basic healthcare for one person is €436. This includes insurance as an outpatient, for one person, aged between 18 and 50 (inclusive). People under 18 cannot buy a policy directly but can be a dependant on a policy. A person who is over 50 will be subject to an additional charge of €90.
- Insurance for dependants on the same policy costs as follows:
 - 1st dependant: €270
 - 2nd dependant: €160
 - 3rd dependant: €100
 - 4th dependant: €50

Additional dependants are free, up to a maximum of 6 dependants in total.

Each dependant's name and age must be on the policy and each dependant must be under 18 years of age.

- Inpatient insurance costs an additional €200. This includes insurance for a semi-private room. Insurance for a private room costs €100 extra. Inpatient insurance does not extend to any dependants listed on the policy.
- VAT of 21% is charged on the healthcare policy.

You are required to design, code and test a program that will read in the details of a prospective insurer, calculate the cost of their health insurance, and output a quotation in the format shown below. The program is to run until there are no further quotations to be made.

| MTS Healthcare Policy | | |
|-------------------------------|---|--------------------------|
| Name: | <The name of the policy holder> | |
| Number of dependents: | <Number of dependents> | |
| | <i>List the name, age and cost of each dependent (if any) here.</i> | |
| Basic cost (outpatient care): | | <Basic Cost> |
| Inpatient cost: | <Yes or No> | <Inpatient cost> |
| Room type: | <NA or Private or Semi-Private> | <Room cost> |
| Total before VAT: | | <Total before VAT> |
| VAT: | | <VAT> |
| Total: | | <Total before VAT + VAT> |

Notes:

- User input is to be checked to ensure that it is correct (e.g. ensure that the number of dependents is between 0 and 6 inclusive, make sure that choices e.g. inpatient care or not, are valid etc.)
- The border for the policy quotation is for illustration only and need not be drawn.
- Basic cost is €436 or €436 + €90 as outlined in the first paragraph of the narrative.
- For inpatient cost, output "Yes" if the person is buying inpatient insurance, output "No" if the person is not buying inpatient insurance.

- For room type, output “NA” if the person is not buying inpatient insurance (with a cost of €0), otherwise output “Private” or “Semi-Private” as appropriate and with the relevant cost.
- All monetary values are to be suitably formatted.

Submit

1. Documentation

- An algorithm for your program.
- Comments within your program.
- A data dictionary

2. The testing of your program

You must include at least 4 items of test data. This data should include a **suitable** mix of data that **robustly** tests your program code.

- For each test, indicate **what you are testing** e.g. testing that calculations are correct, testing that the program loops until a valid number of dependants is read in etc.
- Include the **expected results** of your test data.
- Include **screenshots** of your test data and results.

3. Your work uploaded to Moodle

You will upload two files to Moodle.

- Skills Demo # 2 – PDF.** A **single** PDF document containing:
 - a. Algorithm
 - b. Data dictionary
 - c. Source code (keep the formatting that is in Eclipse when you paste the code).
 - d. Test data with your expected results.
 - e. Test data with the actual results.
- Skills Demo 2 – Java source code**
Upload your .java code located in the src folder.

Marks will be allocated as follows:

| | |
|---|---|
| Programming & Design Principles 5N2927 | Learner Marking Sheet 2 Skills Demonstration 2 (Practical) 25% |
|---|---|

Learner's Name: _____

Learner's PPSN: _____

| Assessment Criteria | Maximum Mark | Learner Mark |
|---|--------------------------------------|---------------------|
| <u>Skills Demonstration 2</u> | | |
| <ul style="list-style-type: none"> • Algorithm <ul style="list-style-type: none"> ○ Pseudocode or flowchart detailing all tasks to be completed. ○ Complete data dictionary compiled. • Accurate programming <ul style="list-style-type: none"> ○ Program compiles. ○ Program solves the given problem. ○ Program uses iteration effectively. • Appropriate testing <ul style="list-style-type: none"> ○ Suitable test data compiled. ○ All computation on test data shown. ○ Correct results shown for each piece of test data. ○ Screen shots included that show results of compiled test data used on coded solution. • Accepted industry standards for coding <ul style="list-style-type: none"> ○ Logical sequence to program. ○ Code suitably commented. ○ Indenting conforms to industry standard. ○ Clear and consistent input prompts given to user. ○ Clear and consistent output from the program, suitably displayed. | <p>4</p> <p>14</p> <p>4</p> <p>3</p> | |
| Total Mark | 25 | |