# Assessment Task 3: Build an

intermediate OOP application

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| Course code  and title | **ICT50220 Diploma of Information Technology** |
| Unit code and  title | **ICTPRG549 Apply intermediate object-oriented language skills** |
| Due date | 28/05/2024 |
| Resources required | Computer Access with Microphone & Video (optional) & Internet Melbourne Polytechnic lab PC that connected to the internet |
| Decision making rules | To achieve an overall satisfactory result for this assessment task:   * Learners must achieve a satisfactory result for each item in the Observation and/or Assessment Checklist/s |
| Learner instructions | You are required to create and intermediate object-oriented application. There are 2 parts to this task:  **Part A** – respond to a series of questions to create your application.  **Part B** - demonstrate the functionality of your application to your Assessor.  For this task you will:   * Complete it individually. * Write answers to all questions. * Demonstrate your application to your Assessor. * Complete it in class as indicated by your Assessor and submit it by the due date. * Have time to read and review the assessment task in class. * Submit your answers electronically via Moodle, (or in hard copy to your assessor, including the signed cover sheet and   Learner declaration)   * You must answer electronically and save the document as Assessment Task 3 StudentID.docx * You must agree (by clicking on the ‘I confirm radio button) with the assessment submission terms and conditions in Melbourne Polytechnic Moodle prior to the submission   If you have any questions about the task or concerns about your ability to complete the task, please discuss this with your Assessor. |

## Task details

Scenario

Melbourne Polytechnic (MP), formerly NMIT, is a [vocational education](https://en.wikipedia.org/wiki/Vocational_education) ([TAFE)](https://en.wikipedia.org/wiki/TAFE) and [higher](https://en.wikipedia.org/wiki/Higher_education) [education](https://en.wikipedia.org/wiki/Higher_education) institute located in [Melbourne.](https://en.wikipedia.org/wiki/Melbourne) It is predominantly in the northern suburbs with 7 campuses and 4 training sites across Victoria.

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| **Campuses**  Preston Collingwood Epping Heidelberg Prahran  Greensborough | **Training Sites**  Broadmeadows Eden Park  Yan Yean Ararat |

MP needs to build an intermediate student car park application to activate a student’s parking session through one computer, to be deployed in all parking areas.

System requirement.

* Easy and interactive GUI
* Data required: student name, student ID and car registration number
* Database required at this stage
* Functions should be used
* Sorting by student ID
* Search by student ID
* Contract duration: 3 weeks
* Final project should be run as EXE file.

[YOU SHOULD USE YOUR INITIALS AT THE BEGINNING OF EACH VARIABLE](https://www.google.com/search?rlz=1C1CHBD_en-GBAU856AU856&sxsrf=ALeKk00q5GW_WoRCZ26o5t94Dls_ARuSxg%3A1621762887516&q=%E2%80%A2%2BYOU%2BSHOULD%2BUSE%2BYOUR%2BINITIALS%2BAT%2BTHE%2BBEGINNING%2BOF%2BEACH%2BVARIABLE&spell=1&sa=X&ved=2ahUKEwidvMfGwd_wAhVozDgGHV3lAdsQkeECKAB6BAgBEDE)

i.e. my name is Hatim Mansor, so variables should be: HM\_FirstName

HM\_LastName HM\_Counter HM\_i

### Part A - Development

Answer the following questions and develop the application to the specifications provided in the scenario.

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| **1** | **Design a database structure that will address all requirements from the scenario and provide a screenshot of the database design.** | | |
|  | SCREENSHOT |  SATISFACTORY |  NOT SATISFACTORY |
| 说明：请将根据自己数据库脚本绘制的ER图，放置在这里，ER图的绘制方式参考如下图所示 | | | |

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| **2** | **Create a text file to create a data base table/file that includes all the required fields as specified in the scenario.**  **Provide a screenshot of the text file.** | | |
|  | SCREENSHOT |  SATISFACTORY |  NOT SATISFACTORY |
| 说明：将参考资源生成的“db.sql”中的数据库脚本 截图放这里 | | | |

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| **3** | **In your program, write the required code to connect to the database server.**  **Provide a screenshot of the code.** | | |
|  | SCREENSHOT |  SATISFACTORY |  NOT SATISFACTORY |
| 说明：在生成的“main.py”代码中，搜索“# main”，截图数据库连接的一段代码，放在这里 | | | |

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| **4** | **Design and implement at least one function that will use Python facilities to handle the database sorting.**  **Provide a screenshot.** | | |
|  | SCREENSHOT |  SATISFACTORY |  NOT SATISFACTORY |
| 说明：在生成的“main.py”代码中，搜索“def sort”，截图根据学生ID排序的代码，放在这里 | | | |

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| **5** | **Provide a screenshot for your main interactive GUI user interface** | | |
|  | SCREENSHOT |  SATISFACTORY |  NOT SATISFACTORY |
| 说明：执行“main.py”, 将图形化界面截图放这里 | | | |

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| **6** | **Design and implement a test scenario to test name, age and registration number.**  **Provide a screenshot of the test table below.** | | | | | | |
|  | ANSWER |  |  |  SATISFACTORY | |  NOT SATISFACTORY | |
| **Priority** | | **Requirement** | **Module** | **Submodule** | **Contents** | | **Expected**  **Results** |
| A | | R87 | MP Student Car Parking Management System | Register a Car | 分步描述运行程序以后如何添加学生的车辆信息 | | 分布描述添加过程中，每一步操作预计得到的结果 |
| 放注册过程步骤的截图，直到注册成功 | | | | | | | |

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| **7** | **Produce a code to satisfy all of MP’s requirements. Make sure you have tested the code thoroughly to comply with MP specifications.**  **Copy and paste your code below** | | |
|  | ANSWER |  SATISFACTORY |  NOT SATISFACTORY |
| 说明：将所有“main.py”代码中的中文用自己话描述，翻译成英文后的所有代码复制粘贴到这 | | | |

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| **8** | **Generate the final binary executable file.**  **Take a screenshot** | | |
|  | SCREENSHOT |  SATISFACTORY |  NOT SATISFACTORY |
| 参考步骤：  步骤一：安装pyinstaller  推荐使用国内镜像源安装，否则很可能会失败。  在cmd或者powershell或者cmder命令行中输入, 如果装环境时修改了镜像，可以不用带-i和后面的参数  ***pip install pyinstaller -i https://pypi.douban.com/simple***  步骤二：  在cmd或者powershell或者cmder命令行中输入下列命令 切换到“main.py”所在文件夹：  *cd main.py所在文件夹路径*  **注意：main.py所在文件夹路径可以通过找到文件后文件夹上面的地址栏直接获取**  继续输入下列命令制作 exe文件： -w的用处是不出现黑色控制台窗口。  *pyinstaller -F -w main.py*  步骤三：  在“main.py”所在文件夹中找到“dist”文件夹中的“main.exe”可执行程序，修改名字成  “你的拼音名字.exe”，然后截图，放在这里，完成后请删除所有提示信息 | | | |

### Part B – Demonstration

You must now explain and demonstrate your application to your Assessor. Use your answers to the questions in Part A to assist you.

You will be assessed on the items in the observation checklist. Ensure to:

* explain the database structure and table you have designed.
* demonstrate the code to connect to the database structure.
* demonstrate the Python facility for sorting.
* display the GUI with relevant fields.
* demonstrate the test scenario.
* display the final code and binary file.

## Observation Checklist: Build an intermediate OOP application

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| **Learner name** | |  | **Student ID** | |  | |
| **Assessor name** | | Mr. YU | **Date** | | 28/05/2023 | |
| OBSERVATION CHECKLIST  ASSESSOR TO COMPLETE THE FOLLOWING | | | | | | |
| **THE LEARNER:** | | | | **SATISFACTORY** | | **NOT SATISFACTORY** |
| 1 | Correctly explained the database structure they have designed and structure meets MP specifications. | | | ☑ | | ☐ |
| 2 | Correctly explained the database table they have designed. | | | ☑ | | ☐ |
| 3 | Demonstrated the code to connect to the database server. | | | ☑ | | ☐ |
| 4 | Demonstrated use of Python facility to manage sorting of data. | | | ☑ | | ☐ |
| 5 | Displayed the GUI with name, registration and student ID. | | | ☑ | | ☐ |
| 6 | Demonstrated the test scenario. | | | ☑ | | ☐ |
| 7 | Displayed correct code and demonstrated application functions to MP specifications. | | | ☑ | | ☐ |
| 8 | Correctly generated a binary executable file. | | | ☑ | | ☐ |
| **Feedback -** Assessor must include feedback. | | | | | | |
| The candidate has completed all aspect as required above, and basically meet the requirements. | | | | | | |

## Assessment Checklist: Task 3 - Build an intermediate OOP application.

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| **Learner name** | |  | **Learner ID** | |  | |
| **Assessor name** | | Mr. YU | **Date** | | 28/05/2023 | |
| ASSESSMENT CHECKLIST  ASSESSOR TO COMPLETE THE FOLLOWING  THE LEARNER: | | | | | | |
|  | | | | **SATISFACTORY** | | **NOT SATISFACTORY** |
| 1 | Correctly completed all questions in Part A. | | | ☑ | | ☐ |
| 2 | Explained and demonstrated all items in Observation  Checklist. | | | ☑ | | ☐ |
| **Feedback -** Assessor must include feedback about the observed performance. | | | | | | |
| The candidate has complete all questions in Part A and has demonstrated all items in the observation checklist. | | | | | | |

## Assessment Task Summary: Task 3 - Build an intermediate OOP application.

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| TRAINER/ASSESSOR TO COMPLETE THE FOLLOWING:  **THE LEARNER:** | | | | | | YES | NO |
| 1. | Satisfactorily completed all the questions | | | | | ☐ | ☐ |
| 2 | Satisfactorily completed all items in Observation Checklist | | | | | ☐ | ☐ |
| FEEDBACK **-** Assessor must include feedback | | | | | | | |
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| OVERALL TASK RESULT | | | | | | | |
| * Satisfactory * Not Satisfactory (resubmission required) – Due date: | | | | | | | |
| DATE ASSESSMENT RETURNED | | |  | | | | |
| TRAINER/ASSESSOR NAME | | |  | | | | |
| TRAINER/ASSESSOR SIGNATURE | | | X | | | | |
| **LEARNER DECLARATION**: Please read, tick and sign below | | | | | | | |
| * I, have been advised of the outcome of this assessment task.   PRINT NAME | | | | | | | |
| LEARNER SIGNATURE | | X | | DATE |  | | |