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KOLEJ UNIVERSITI TUNKU ABDUL RAHMAN

FACULTY OF COMPUTING AND INFORMATION TECHNOLOGY

Assignment

**BACS1024 Introduction to Computer Systems**

202201 Semester

**Student's name :** (1) Cheok Jia Wei (2) Ong Tzi Min

**Student's ID :** (1) 21WMR12521 (2) 21WMR12541

# Programme & Group : RDS1S2G1

**Tutor's name\* :** Mr. Chong Jing Wen

# Date of Submission :

\* Select whichever appliable.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Student** | **Part 1** | | **Part 2** | | | | **Total / Grade** |
| **5** | **5** | **10** | **10** | **10** | **10** | **50 marks** |
| (1) |  |  |  |  |  |  |  |
| (2) |  |  |  |  |  |
| **Comment:** | | | | | | | |

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Plagiarism can take the form of reproduction without acknowledgement from published or unpublished works of others including materials downloaded from computer files on the Internet.

Student’s work submitted for assessment is accepted on understanding that it is the students’ own effort without falsification of any kind. Acknowledgement to the source must be made if students had relied on any sources for information with appropriate reference being made in their work.

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Students are required to sign a declaration statement that the work submitted such as course work assignment, essays and projects, etc is their own work and that they have not in any way knowingly allow another student to copy it. It will be assumed that all submitted work is that of the students’ own work.

Students are expected to familiarize themselves with or make use of method(s) of citing other people’s work in accordance with acceptable referencing.

Read, complete and sign this statement to be submitted with written work.

I / we confirm that I /we have read and shall comply with all the terms and conditions of TAR University College’s plagiarism policy.

I / we declare that this submitted work is free from all form of plagiarism and for all intents and purposes is my own properly derived work.

|  |  |  |
| --- | --- | --- |
| Student's Signature | (1) | (2) |
| Student's Name | (1) Cheok Jia Wei | (2) Ong Tzi Min |
| Student's ID number | (1) 21WMR12521 | (2) 21WMR12541 |
| Date | 21/11/2022 | 21/11/2022 |

# Assignment - Assessment Rubrics

|  |  |  |
| --- | --- | --- |
| **Student's Name** | **: (1) Cheok Jia Wei** |  |
| **Student's ID** | **: (1) 21WMR12521** |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **CLO3: Examine relevant techniques, algorithms, mathematical and logic operations to solve**  **programming problems. (C4, PLO6)** | | | | | |
| **Criteria** (Group basis) | Developing | Approaching | Ideal | **Remark** | **Score** |
| **0 - 1** | **2 - 3** | **4 - 5** |
| **Use of information: Sourcing / Processing / Storing of information (5 marks)**   * Highly relevant to the project. * Excellent application concept based on in- dept analysis. * Well formatted report. | Only 1 sub- criteria is met | Only 2 sub- criteria are met | All 3 sub- criteria are met |  | / 5 |
| **Use of digital technologies: Problem solving / communication / ethics (5 marks)**   * Able to provide sound justification. * Details and well-structured flow chart. * Stay focused on the project. | Only 1 sub- criteria is met | Only 2 sub- criteria are met | All 3 sub- criteria are met |  | / 5 |
| **CLO2: Produce practical solution related to computer systems by applying hardware, assembly**  **language programming and operating system commands and scripting skills. (P3, PLO3)** | | | | | |
| **Criteria** (Individual basis) | Developing | Approaching | Ideal | **Remark** | **Score** |
| **0 - 4** | **5 - 7** | **8 - 10** |
| **Data structure / program comment / Program control (10 marks)**   * Proper naming convention used. * Dynamic use of program code. * Sufficient program comment. | Only 1 sub- criteria is met | Only 2 sub- criteria are met | All 3 sub- criteria are met |  | / 10 |
| **I/O facilities (10 marks)**   * Appropriate I/O design. * Sufficient I/O validation. * Appropriate instructions. | Only 1 sub- criteria is met | Only 2 sub- criteria are met | All 3 sub- criteria are met |  | / 10 |
| **Run / debug program (10 marks)**   * No logical error. * No run time error. * Appropriate output. | Only 1 sub- criteria is met | Only 2 sub- criteria are met | All 3 sub- criteria are met |  | / 10 |
| **Advanced features (10 marks)**   * Fulfill basic required. * Include innovative idea. * Able to solve complex problem. | Only 1 sub- criteria is met | Only 2 sub- criteria are met | All 3 sub- criteria are met |  | / 10 |
| **Total:** | | | |  | **/ 50** |

# Assignment - Assessment Rubrics

|  |  |  |
| --- | --- | --- |
| **Student's Name** | **:** | **(2) Ong Tzi Min** |
| **Student's ID** | **:** | **(2) 21WMR12541** |

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| **No** | **Title** | **Page** |
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**PART I**

1. **Proposal**
2. **Member’s name and ID**

**Member 1:** **Member 2:**

**NAME** : Cheok Jia Wei **NAME**  : Ong Tzi Min

**STUDENT ID** :21WMR12521 **STUDEND ID** : 21WMR12541

1. **Proposed System Title / Name**

**System Title :** Train Ticket System

**System Name :** KTM M’sia

1. **System synopsis (Introduction / WH Questions)**

**Introduction**

Due to the increasing case of animal extinction and ozone layer depleting, people in this era are taking care of environment better than ever. Everyone is taking precautions and thinking about the environment before travelling, littering and much more. Therefore, in the 21st century, we can see that there is an increasing amount of people using public transport such as train, MRT, KTM, bus and many more.

Consequently, it is important to improve the public transport system so that it is convenient and further increase the amount of user using public transport which is why our team came up with the idea of creating the ticketing system for KTM which revolves around booking, buying and planning tickets for KTM and we are focusing on making the system user-friendly so that it can be used for all ages. With this system created by us, we hope that it can further improve the overall experience of people using public transport

**WH Questions**

This computer system is developed for the KTM system in Malaysia. This ticket system allows the user to choose where they would like to go and purchase tickets with the price based on the number of stations. We wish to attract more of our targeted customers such as teenagers, adults, and senior citizens to use our ticket system. Since it is very convenient to travel from state to state by using trains, more people are willing to use train instead of travelling by car.

There are many benefits travelling with train such as environment friendly, saves costs and many more. This system basically allows user to login or register to our system, allows the users to choose their destination, their starting point and time, validation, calculation for ticket price and many more. The main purpose of this system is to let our users to purchase ticket at kiosk. This can make people lives easier and allow them to plan their tour or ride more conveniently.

1. **System Functions/ Features**

* Welcome Page
* Login Page
* Register page
* View Map Page
* Show Price Page
* Payment Page
* Top up Page
* Receipt Page

1. **Mathematical Formula(s) Used**

* **Addition**
* To calculate the top up amount

Formula = Original credit + Top up credit

* To convert Decimals to Hexadecimals to satisfy the requirement of ASCII table

Formula = DEC + 30H

* **Subtraction**
* To calculate the differences between the amount paid and actual amount

Formula = Amount\_paid – Total\_amount

* To calculate if the user paid enough money

Remainder = Total\_amount – Amount\_paid

* To calculate the amount of credit used

Formula = Total credit – Amount\_paid

* To convert Hexadecimals to Decimals to satisfy the requirements of ASCII table

Formula = HEX – 30H

* **Multiplication**
* To calculate the amount of ticket

Formula = Ticket \* amount

* To calculate discount for members
* Formula = Total price \* discount
* Get value of thousand

Formula = Amount \* 1000

* Get value of hundreds

Formula = Amount \* 100

* Get value of tens

Formula = Amount \* 10

* **Division**
* To obtain the respective value of thousand digits, hundreds, tens and ones

For example:

* 1234/100 = 12.34; AH (Quotient) = 12, AL (Remainder) = 34
* 12/10 = 1.2; AH (Quotient) = 1 [Thousands], AL (Remainder) = 2 [Hundreds]
* 34/10 = 3.4; AH (Quotient) = 3 [Tens], AL (Remainder) = 4 [Ones]

1. **Business/ Process Rule/ Limits**

* Only accept Ringgit Malaysia
* Discounts for children and elderly
* Seats provided for people with incapability
* No refund policy
* RM10 for each ticket
* Only member can pay by top up credits

1. **Flowchart**

**Diagram

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**Diagram

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