Middle East College

IN SEMESTER (INDIVIDUAL) ASSIGNMENT

Module Code: COMP 20014.1   **Module Name: Advanced Programming**

Level: 2   **Max. Marks: 100**

Instructions to Student
- **Answer *all* questions.**
- **Deadline of submission: 14/11/2021, 23:59**
- **The marks received on the assignment will be scaled down to the actual weightage of the assignment which is 35% marks**
- **Formative feedback on the complete assignment draft will be provided if the draft is submitted at least 10 days before the final submission date.**
- **Feedback after final evaluation will be provided by 02/12/2021**

Module Learning Outcomes
The student achieves the following LOs by completing the assignment successfully

1) Develop applications using GUI components
2) Demonstrate the file handling in object oriented applications

Assignment Objective
The main goal of this assignment is to enable students to develop advanced applications in Java using pre-built libraries. In this assignment, students will develop applications using GUI components and developing console application for writing a data onto sequential text file in object-oriented applications.

Assignment Tasks
Task 1. Work Proposal   (10 marks)

Submit a work proposal for this assignment on or before 27/10/2021 which must include:
- A general overview of proposed plan including initial understanding of all the tasks.
- A timeline for completion of the given tasks.
- References [4 resources should be there from MEC E-resources in APA 7th edition referencing style.]

The work proposal must be submitted in a word file through the link available in Moodle

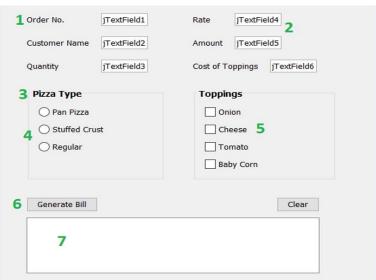Task 2: GUI Development & File handling (80 marks)

The Pizza Hut having more than 100 restaurants nationwide, with many new stores expected to open in the coming year in the Sultanate of Oman. Pizza Hut is switching to an automated billing system from its previous method of manually computing bills. The consumer must pick two items, such as the type of pizza and the choice of toppings, based on their preferences. The entire sum is computed and printed based on this. Although a pizza can have several toppings, it can only have one type of dough at a time. Below are the pricing details to create the application.

Pan Pizza	Stuffed	Regular	Onion	Cheese	Tomato	Baby Corn
10 OMR	7 OMR	8 OMR	5 OMR	3 OMR	4 OMR	6 OMR

You have been asked to develop a Java program using Java Swing (Graphical User Interface), Event handling and File handling. The specification of your program should be as follow.

Task 2.1. Using the above scenario, design and implement the windows based application described above using Java Swing and Event Handling. : 40 marks

Sample user interface

- Use appropriate components such as labels, panels, fields and buttons to represent the interface as per the given requirements
- You are expected to use your own design layout, style and color scheme
- Appropriate use of a layout manager for the different containers

- The company name should be in the frame header (the main container)
- Add trigger events for the different buttons to calculate the timesheet and pay slips for the employees
    - Calculate & generate bill – determine the total amount, display order details in text area with explanations of the method used.
    - Clear – remove all existing contents from the fields with explanations of the method used
    - Exit – close the application with explanations of the method used.

Task 2.2. Design and implement the graphical user interface using a JFileChooser class to display a dialog that enables the user to select files or directories. **(40 marks)**
- Define class FallJFileChooser – this class extends JFrame and contains private instance variables outputArea of JTextArea to display file contents with explanations of the method used.
    - FallJFileChooser() constructor – to set up graphical user interface and appropriate use of components such as JTextArea, JScrollPane to represent the interface with explanation of the method used.
    - analyizePath() method – to display information about file or directories user specifies with explanation of the method used.
    - getFileOrDirectoryPath() method – to allow user to specify file or directory name with explanations of the method used.
- Define class FallJFileChooseTest – this class should test the FallJFileChooser class and implement the main method with explanation of the method used.

Task 3. Prepare a report to present the work done from task 2. The report should consist of the following. **(10 marks)**

- A cover page to identify your work (Student ID, Student Name, Module Code, Module Name)
- Use a table of contents for your report
- Clear label and introduction of each task followed by the coding, output screen of that task. Include comments wherever possible to enhance the clarity of your coding
- Ensure proper formatting of your report

Rules & Regulations:
- All resources should be cited using APA 7th edition referencing style.
- The final assignment must have a Title page, Table of Contents, References/ bibliography using APA 7th edition referencing style and page numbers.
- Title Page must have Assignment Name, Module name, Session, your name, ID, and the name of the faculty.
- Softcopy in word format is to be submitted through Turnitin link on Moodle.
- Clear label and introduction of each task followed by the coding of that task. Include comments wherever possible to enhance the clarity of your coding.
- **Viva** will be conducted after the assignment submission as per the dates informed earlier.

Guidelines:

- Assignment must be computer typed.
  - Font - Times New Roman
  - Font – Style - Regular
  - Font - Size - 12
  - Heading should be with Font Size 14, Bold, Capital and Underline.

- Each student has to do the assignment individually
- Java code must be typed and Java code has image format not acceptable.
- Handwritten assignments will not be accepted
- You can refer books in eLibrary or use internet resource. But you should not cut and paste material from internet nor provide photocopied material from books. The assignment answers should be in your own words after understanding the matter from the above resources.

Important Policies to be followed

1. Student Academic Integrity Policy*:

- MEC upholds the spirit of academic integrity in all forms of academic work and any form of violation of academic integrity shall invite severe penalty. Any benefit obtained by indulging in the act of violation of academic integrity shall be cancelled.

- MEC also reserves the right to notify the appropriate law enforcement authorities of any unlawful activity and to cooperate thereafter in any investigation of such activity.

- Faculty can conduct a viva to investigate and ascertain that the work submitted is student's own work as per the guidelines for the same. **A student can be given a maximum of 2 chances to attend the viva in such cases. It is expected that the student attends the viva during the first chance itself unless due to extenuating circumstances. If the student does not attend the viva in spite of being given 2 chances and fails to submit valid reasons, he/she will be awarded a fail in the module and this shall be counted as a case of academic integrity violation.**

All cases of violation of academic integrity on the part of the student shall fall under any of the below mentioned categories:

1. Plagiarism

2. Malpractice

3. Ghost Writing

4. Collusion

5. Other cases

If the student fails a module and has a proven case of academic integrity violation in this module, the student is required to re-register the module. This is applicable to first and second offence of academic integrity violation of plagiarism type

a. First Offence of Academic Integrity Violation:

    i. Plagiarism

        a. If a student is caught first time in an act of academic integrity violation during his/her course of study in any assignment other than project work and if the type of violation is plagiarism, then the student will be allowed to re-submit the assignment once as per the period allowed for re submission However, a penalty of deduction of 25% of the marks obtained for the resubmitted work will be imposed.

        b. Period of re-submission: The student will have to re-submit the work within one week (5 working days) from the date he or she is advised to re-submit.

        c. Re-submission of the work beyond the allowed period of resubmission will not be accepted and the assessment will be awarded a zero mark.

        d. If the re-submitted work (within the allowed period of resubmission) is also found to be plagiarized, then that assessment component will be awarded a zero mark. It shall also contribute to the total count of academic integrity violation for that student.

        e. If plagiarism is detected in UG Project work (Project 1, Project Planning and Project Design and Implementation), the above clauses do not apply, and the work will be summarily rejected. In these cases the student will be awarded a fail (F) grade and is required to reregister the module.

    ii. Malpractice / Ghostwriting / Collusion

        If a student is caught first time in an act academic integrity violation during his/her course of study for an assessment component irrespective of coursework or end semester and if the type of violation is Malpractice/Ghostwriting/Collusion, then the student shall fail the module.

b. Second Offence of Academic Integrity Violation:

    i. Plagiarism

        a. If any student is caught second time in an act of academic integrity violation during his/her course of study and if the type of violation is plagiarism, then the student will not be allowed to resubmit the work, and s/he will directly be awarded zero for the work in which plagiarism is detected.

b.   The student shall also receive a warning of suspension in such cases.

ii.   **Malpractice/Ghostwriting/Collusion**

a.   If a student is caught a second time in an act academic integrity violation for an assessment component irrespective of coursework or end semester and if the type of violation is Malpractice/Ghostwriting/Collusion, then the student shall fail the module.

b.   The student shall also receive a warning of suspension in such cases.

c.   **Third Offence of Academic Integrity Violation:**

a.   If a student is caught a third time in an act of academic integrity violation for an assessment component irrespective of coursework or end semester then the student shall fail the module and also shall be suspended for one semester from the College, once the academic integrity violation case is confirmed by Institutional Assessment Review Committee.

b.   The student shall be suspended for the immediate subsequent semester and can register for modules only after having served the suspension period fully. This is also applicable for semesters offered in block mode.

c.   During the suspension period, the student shall have to mandatorily complete a course on academic integrity/writing before s/he can register for any modules.

d.   During the period of suspension, the student shall be allowed to attempt supplementary examinations if s/he is eligible for the same. S/he shall also be allowed access to all college facilities permitted for a regular student except for registering the modules.

d.   **Fourth Offence of Academic Integrity Violation:**

a.   If a student is caught a fourth time in an act of academic integrity violation for an assessment component irrespective of coursework or end semester, the student shall fail the module and also shall be expelled from the College, once the case is confirmed by Institutional Assessment Review Committee.

b.   The student shall be expelled from the college and all access to the college facilities and premises shall cease to exist. The documents shall be released only after getting the NOC (No Objection Certificate) from Registration Office.

c.   `On termination, the student shall not be refunded any fees paid for the academic semester in which academic integrity violation was observed.

e.   **Other cases**

If a student commits an act of academic integrity violation as per the definition of "other cases" mentioned in the previous section or of a different nature, student's case shall be forwarded to an Institutional Assessment Review Committee, Chaired by the Associate Dean, Academic Affairs. The committee shall investigate the case by means of a viva and/or a hearing of the parties concerned if required and shall take appropriate decision. The penalty that can be granted to a proven case of academic integrity violation which falls in

this category of "other cases" can be a warning/component zero/ module fail/suspension/expulsion depending on the nature and gravity of the offence.

f. **Types/Variations of cases of Plagiarism and associated actions**

Type 1: In case plagiarism is detected in any component or part submission (submitted at different times) of one assessment (assignment), the deduction in marks will be applicable for the whole assessment (assignment), even if only the component or part submission alone needs to be resubmitted.

Type 2: In case plagiarism is detected in a group assessment, all students of the group will be considered as having committed an act of plagiarism irrespective of whether plagiarism is on account of the act of all or a few or only one member. The policy will then be applied to all students.

If some students in the group are eligible to re-submit (first offence) and others are not eligible, only eligible students will be allowed to re-submit within a period of one week and the penalty will be applied as per the policy for each student according to his / her history of violations.

Type 3: Combination of Type 1 and Type 2: In case plagiarism is detected in any component or part submission (submitted at different times) of a group assessment (assignment), the deduction in marks will be applicable for the whole assessment (assignment), even if only the component or part submission alone needs to be resubmitted. All students of the group would be considered as having committed an act of plagiarism irrespective of whether plagiarism is on account of the act of all or a few or only one member. The policy will then be applied to all the students of the group.

If some students in the group are eligible to re-submit (first offence) and others are not eligible, only eligible students will be allowed to re-submit within a period of one week and the penalty will be applied as per the policy for each student according to his / her history of violation.

Type 4: Variation of Type 1 and Type 2: In cases where the assessment consists of components or part submissions that could be a group assessment component (e.g. group assignment) and an individual assessment component (e.g. individual reflection), the following will be applicable:

a. If plagiarism is detected in the group assessment component, all students of the group will be considered as having committed an act of plagiarism, irrespective of whether plagiarism is on account of the act of all or a few or only one member. The policy will then be applied to all students of the group. In such cases the group assessment component will be resubmitted.

If some students in the group are eligible to re-submit (first offence) and others are not eligible, only eligible students will be allowed to re-submit within a period of one week and the penalty will be applied for each student according to his / her history of violation.

b. If plagiarism is detected in the individual assessment component, the individual assessment component will be resubmitted - if the student is eligible for resubmission-. The policy will then be applied to that student alone.

c. In both cases (a) and/or (b), the deduction in marks will be applicable for the whole assessment (assignment).

g. **Types/Variation of Cases of Multiple Offences**

If student is caught with multiple violations of same or different nature in different modules of the same semester, they will be considered as one offence and student will be penalized for each violation according to the type of the offence.

If student is caught with multiple violations of same or different nature in the same module of the same semester, then they will be considered as different offences and each will contribute to the overall count of AIV. The student then shall be penalized for each violation according to the count and type of each offence.

* For further details Refer to MEC Student Academic Integrity Policy in Student Handbook.

2. **Late Submission Regulations:**

It is the students' responsibility to check all relevant timelines related to assessments.

As per the Assessment Policy at MEC, late submissions are allowed for one week (5 working days) for all UG modules with a penalty. In such cases, a deduction of 5% of the marks obtained for the submitted work shall be imposed for each working day following the last date of submission till the date of actual submission. Assessment documents submitted beyond a period of one week (5 working days) after the last date of submission will not be accepted and will be awarded a zero for that assessment. In cases where the submission has been delayed due to extenuating circumstances, the student may be permitted to submit the work without imposing the late submission policy stated above. The extended period of submission will be one week from the original last date of submission. In such cases, the student is expected to submit the supporting certificates on or before the original last date of submission of the assessment and the decision of extension rests with faculty responsible for the assessment .The late submission policy shall be applied if the student fails to submit the work within one week of the original last date of submission.

Students may contact their teachers for clarification on specific details of the submission time if required.

3. Research Ethics and Biosafety Policy

To protect and respect the rights, dignity, health, safety, and privacy of research subjects involved including the welfare of animals and the integrity of environment, all student projects are expected to be undertaken as per the MEC Research Ethics and Biosafety Policy. Accordingly the following shall apply.

- Research and other enterprise activities shall be conducted by maintaining the high ethical standards consistent with national and international standards and conventions.

- Any research at MEC that is categorized as high-risk research shall be subject to review and approval by the Research Ethics and Biosafety Committee.

- Research activities involving collection of human or animal tissues and manipulation of microbial, animal or plant cells shall be subject to review and approval by the Research Ethics and Biosafety Committee.

- Participants involved in research must be informed about the purpose of research and intended uses of research findings. Written consent must be obtained from people involved prior to the commencement of research.

- Data obtained from participants must be treated with high confidence and should be used only for the intended purpose of research.

4. Viva Regulations:

- Faculty can conduct a viva as per the institutional guidelines to investigate and ascertain that the work submitted is student's own work.
- It is expected that the student attends the viva during the first chance itself unless due to extenuating circumstances.
- If the student is not able to attend the first call for viva as per the date and time notified by faculty, s/he shall be given one more chance to attempt the viva within a week from the first call.
- If the student does not attend the viva in spite of being given two chances and fails to submit valid reasons for the absence in viva within three working days from the last call for the viva, he/she will be awarded a fail in the module. This shall also be counted as a case of academic integrity violation.
- If the student fails a module and has a proven case of academic integrity violation in the module, the student is required to re-register the module. This is also applicable in case the student fails and has a first or second offence of academic integrity violation of plagiarism type. The fee for the failed module for the semester in which academic integrity violation was observed shall not be re-funded.

Assessment Evaluation Criteria

Classification And % Range		Knowledge and Understanding / Application of Theory / Evidence of Reading	Technical / Practical Skills	Reflection and critical analysis	General / Transferable skills*
First Class	Outstanding 94 -100	• Outstanding knowledge and depth of understanding of principles and concepts. • Outstanding ability to apply the theoretical concepts by considering of information systematically. • Evidence of reading a wide range of educational literature/research and where applicable workplace strategies, policies and procedures.	• Tasks completed with very high accuracy. • Outstanding skills in interpretation of results / and accomplishing practical tasks. • Demonstrates high degree of autonomy in completing tasks	• Outstanding skills for critical analysis, evaluation and synthesizing. • Outstanding reflective practices, demonstrating outstanding personal learning and growth, insight into required professional values and principles and professional development planning. • Original Findings presented with conviction and justified very well	• Outstanding ability to use learning resources • Outstanding presentation, logically structured, using accurate grammar and spelling. • Mostly correct cross-referencing and links to supporting evidence • Outstanding ability to communicate the information verbally and in writing. • Outstanding ability to work in groups and to manage teams. • Outstanding ability to learn autonomously. • Very accurate referencing and bibliography using appropriate referencing style • Outstanding problem solving skills and outstanding decision-making skills.
	Excellent 84 – 93.99	• Excellent knowledge and depth of understanding of principles and concepts. • Excellent ability to apply the theoretical concepts by considering of information systematically. • Evidence of beyond the minimum expected range of of educational literature/research and where applicable	• Tasks completed with high accuracy. • Excellent skills in interpretation of results / and accomplishing practical tasks.	• Excellent skills for critical analysis, evaluation and synthesizing. • Excellent reflective practices, demonstrating excellent personal learning and growth, insight into required professional values and principles and professional development planning.	• Excellent ability to use learning resources • Excellent presentation, logically structured, using accurate grammar and spelling. • Mostly correct cross-referencing and links to supporting evidence • Excellent ability to communicate the information verbally and in writing.

		workplace strategies, policies and procedures.		• Findings presented with conviction and justified well	• Excellent ability to work in groups and to manage teams. • Excellent ability to learn autonomously. • Accurate referencing and bibliography using appropriate referencing style • Excellent problem solving skills for decision-making skills.
Second Class, Upper Division	Very Good 77 – 83.99	• Very good knowledge and depth of understanding of principles and concepts. • Very good ability to apply the theoretical concepts by considering of information systematically. • Evidence of reading a very good number of educational literature/research and where applicable workplace strategies, policies and procedures.	• Tasks completed with very good accuracy. • Very good skills in interpretation of results / and accomplishing practical tasks.	• Very good skills for critical analysis, evaluation and synthesizing. • Very good reflective practices, demonstrating very Good personal learning and growth, insight into required professional values and principles and professional development planning. • Findings presented with conviction with very good justification	• Very good ability to use learning resources • Very good presentation, logically structured, using accurate grammar and spelling. • Mostly correct cross-referencing and links to supporting evidence • Very good ability to communicate the information verbally and in writing. • Very good ability to work in groups and to manage teams. • Very good ability to learn autonomously. • Precise referencing and bibliography using appropriate referencing style • Very good problem solving skills decision-making skills.

Second Class, Lower Division	Good 70 – 76.99	• Good knowledge and depth of understanding of principles and concepts. • Good ability to apply the theoretical concepts by considering of information systematically. • Evidence of reading a good number of educational literature/research and where applicable workplace strategies, policies and procedures.	• Tasks completed with good accuracy. • Good skills in interpretation of results / and accomplishing practical tasks.	• Good skills for critical analysis, evaluation and synthesizing. • Good reflective practices, demonstrating good personal learning and growth, insight into required professional values and principles and professional development planning. • Findings presented with conviction and good justification.	• Good ability to use learning resources • Good presentation, logically structured, using accurate grammar and spelling. • correct cross-referencing and links to supporting evidence • Good ability to communicate the information verbally and in writing. • Good ability to work in groups and to manage teams. • Good ability to learn autonomously. • Good referencing and bibliography using appropriate referencing style • Good problem solving skills and decision-making skills.
Third Class	Satisfactory 60 – 69.99	• Satisfactory knowledge and depth of understanding of principles and concepts. • Fair application of the theoretical concepts by considering of information systematically. • Evidence of reading a fair number of educational literature/research and where applicable workplace strategies, policies and procedures.	• Tasks completed with satisfactory accuracy. • Satisfactory skills in interpretation of results / and accomplishing practical tasks.	• Satisfactory skills for critical analysis, evaluation and synthesizing. • Satisfactory reflective practices, demonstrating fair personal learning and growth, insight into required professional values and principles and professional development planning. • Findings presented with conviction and satisfactory justification.	• Satisfactory presentation, logically structured, using accurate grammar and spelling. • Satisfactory cross-referencing and links to supporting evidence • Satisfactory ability to communicate the information verbally and in writing. • Satisfactory ability to work in groups and to manage teams. • Satisfactory ability to learn autonomously. • Satisfactory referencing and bibliography using appropriate referencing style • Satisfactory problem solving skills and

				exceptionally competent for decision-making.
Acceptable / Pass 50 – 59.9	• Basic knowledge and depth of understanding of principles and concepts. • Basic ability to apply the theoretical concepts by considering of information systematically. • Evidence of reading a few number of educational literature/research and where applicable workplace strategies, policies and procedures.	• Tasks completed with minimum acceptable accuracy. • Acceptable skills in interpretation of results / and accomplishing practical tasks.	• Basic skills for critical analysis, evaluation and synthesizing. • Basic reflective practices, demonstrating some personal learning and growth, insight into required professional values and principles and professional development planning. • Findings presented with conviction and acceptable justification.	• Acceptable presentation, logically structured, using accurate grammar and spelling. • Acceptable cross-referencing and links to supporting evidence • Basic ability to communicate the information verbally and in writing. • Basic ability to work in groups and to manage teams. • Basic ability to learn autonomously. • Basic referencing and bibliography using appropriate referencing style • Basic problem solving skills and decision-making skills.
Fail / Poor <50	• Inadequate knowledge and understanding of principles and concepts. • Poor application of the theoretical concepts • No evidence of reading educational literature/research and where applicable workplace strategies, policies and procedures.	• Tasks not completed • Poor skills in interpretation of results / and accomplishing practical tasks.	• Poor skills for critical analysis, evaluation and synthesizing. • Poor reflective practices, demonstrating some personal learning and growth, insight into required professional values and principles and professional development planning. • Findings presented unconvincingly with improper justification.	• Poor presentation, logically structured, using accurate grammar and spelling. • Inadequate cross-referencing and links to supporting evidence • Poor ability to communicate the information verbally and in writing. • Poor ability to work in groups and to manage teams. • Poor ability to learn autonomously. • Inadequate referencing and bibliography using appropriate referencing style

				• Poor problem solving skills and decision-making skills.

Assessment Sheet – Basic Assignment Analysis:
Advanced Programming (COMP 20014)
Fall 2021

Student ID: _____ Student Name: _____

Deliverables	0-1	2-3	4-5	6-8	9-10	Marks
Work Proposal	No or Poor Submission	Poor explanation of tasks and timelines given. Few Resources identified.	Average explanation of tasks and timelines given. Few Resources identified.	Good explanation of tasks and timelines given. Few Resources identified.	Proper explanation of tasks and timelines given. Resources identified.	

Deliverables	0-5	6-10	11-16	16-18	19-20	Marks
GUI Development	Poor implementation or no attempt	Attempted development but have errors on swing components with poor explanation	Attempted development but have errors on swing components with average explanation	Attempted development but few errors on swing components with good explanation	All of the swing components implemented well and explained clearly	
	0-5	6-10	11-16	16-18	19-20	
	Poor implementation or no attempt	Attempted development but have errors from total amount, Pizza type conditions , Pizza toppings conditions , rate, input field validation with poor explanation	Attempted development but have errors from total amount, Pizza type conditions , Pizza toppings conditions , rate, input field validation with poor explanation	Attempted development but few errors from total amount, Pizza type conditions , Pizza toppings conditions , rate, input field validation with poor explanation	All of the functionalities are properly implemented with clear explanation	

Deliverables	0-1	2-3	4-5	6-8	9-10	Marks
File handling	Poor implementation or no attempt	Attempted development but have errors import statement, class, main and sub method with poor explanation	Attempted development but have errors from import statement, class, main and sub method with average explanation	Attempted development but few errors from import statement, class, main and sub method good explanation	All of the functionalities are properly implemented with clear explanation	
	0-5	6-15	16-20	21-26	27-30	
	Poor implementation or no attempt	Attempted development but have errors from analyze method code, getFileDirectory	Attempted development but have errors from analyze method code, getFileDirectory	Attempted development but few errors from analyze method code, getFileDirectory	All of the functionalities are properly implemented with clear explanation	

		code poor explanation	code average explanation	code good explanation		
Deliverables	**0-5**			**6-8**	**9-10**	
Task 3- Report/docum entation	Report layout is not well formatted, consist only of the coding while the table of content and referencing and comments and explanation of code are missing			Report layout is well formatted with the coding but either the table of content or referencing or comments are missing or explanation are missing	Report layout is well formatted with the coding, the table of content, referencing comments included with detail explanation	

<u>**Signature of Evaluator:**</u>

Total Marks	
Penalty	
Final Marks	