



FINAL EXAMINATION / PEPERIKSAAN AKHIR
SEMESTER I – SESSION 2020 / 2021 / SEMESTER I – SESI 2020 / 2021
PROGRAM KERJASAMA

COURSE CODE : DDWC2453
KOD KURSUS

COURSE NAME : SYSTEM ANALYSIS AND DESIGN METHOD
NAMA KURSUS : KAEDAH ANALISA DAN REKABENTUK SISTEM

YEAR / PROGRAMME : 2 DDWC / DDWZ
TAHUN / PROGRAM

DURATION : 3 HOURS (INCLUDING SUBMISSION HOUR)
TEMPOH : 3 JAM (TERMASUK MASA PENGHANTARAN)

DATE : NOVEMBER 2020
TARIKH : NOVEMBER 2020

INSTRUCTION / ARAHAN:

1. The question paper consists of **4 PARTS**: A, B, C and D.
Kertas soalan terdiri daripada 4 BAHAGIAN: A, B, C dan D.
2. Answer **ALL** questions and write your answers on the answer sheet.
Jawab SEMUA soalan dan tulis jawapan anda pada kertas jawapan.
3. Write your name, matric no., identity card no., course code, course name, section no. and lecturer's name on the first page (in the upper left corner) and every page thereafter on the answer sheet.
Tulis nama anda, no. matrik, no. kad pengenalan, kod kursus, nama kursus, no. seksyen dan nama pensyarah pada muka surat pertama (penjuru kiri atas) kertas jawapan dan pada setiap muka surat jawapan.
4. Each answer sheet must have a page number written at the bottom right corner.
Setiap helai kertas jawapan mesti ditulis nombor muka surat pada bahagian bawah penjuru kanan.
5. Answers should be handwritten, neat and clear.
Jawapan hendaklah ditulis tangan, kemas dan jelas menggunakan huruf cerai.

WARNING / AMARAN

Students caught copying / cheating during the examination will be liable for disciplinary actions and the faculty may recommend the student to be expelled from sitting for exam.
Pelajar yang ditangkap meniru / menipu semasa peperiksaan akan dikenakan tindakan disiplin dan pihak fakulti boleh mengesyorkan pelajar diusir dari menduduki peperiksaan.

ONLINE EXAMINATION RULES AND REGULATIONS
PERATURAN PEPERIKSAAN SECARA DALAM TALIAN

1. Student must carefully listen and follow instructions provided by invigilator.
Pelajar mesti mendengar dan mengikuti arahan yang diberikan oleh pengawas peperiksaan dengan teliti.
2. Student is allowed to start examination only after confirmation of invigilator if all needed conditions are implemented.
Pelajar dibenarkan memulakan peperiksaan hanya setelah pengesahan pengawas peperiksaan sekiranya semua syarat yang diperlukan telah dilaksanakan.
3. During all examination session student has to ensure, that he is alone in the room.
Semasa semua sesi peperiksaan pelajar harus memastikan bahawa dia bersendirian di dalam bilik.
4. During all examination session student is not allowed to use any other devices, applications except other sites permitted by course lecturer.
Sepanjang sesi peperiksaan pelajar tidak dibenarkan menggunakan peranti dan aplikasi lain kecuali yang dibenarkan oleh pensyarah kursus.
5. After completing the exam student must inform invigilator via the set communication platform (eg. WhatsApp etc.) about completion of exam and after invigilator's confirmation leave examination session.
Selepas peperiksaan selesai, pelajar mesti memaklumkan kepada pengawas peperiksaan melalui platform komunikasi yang ditetapkan (contoh: Whatsapp dan lain-lain) mengenai peperiksaan yang telah selesai dan meninggalkan sesi peperiksaan selepas mendapat pengesahan daripada pengawas peperiksaan.
6. Any technical issues in submitting answers online have to be informed to respective lecturer within the given 30 minutes. Request for re-examination or appeal will not be entertain if complains are not made by students to their lecturers within the given 30 minutes.
Sebarang masalah teknikal dalam menghantar jawapan secara dalam talian perlu dimaklumkan kepada pensyarah masing-masing dalam masa 30 minit yang diberikan. Permintaan untuk pemeriksaan semula atau rayuan tidak akan dilayan sekiranya aduan tidak dibuat oleh pelajar kepada pensyarah mereka dalam masa 30 minit yang diberikan.
7. During online examination, the integrity and honesty of the student is also tested. At any circumstances student is not allowed to cheat during examination session. If any kind of cheating behaviour is observed, UTM have a right to follow related terms and provisions stated in the respective Academic Regulations and apply needed measures.
Semasa peperiksaan dalam talian, integriti dan kejujuran pelajar juga diuji. Walau apa pun keadaan pelajar tidak dibenarkan menipu semasa sesi peperiksaan. Sekiranya terdapat sebarang salah laku, UTM berhak untuk mengikuti terma yang dinyatakan dalam Peraturan Akademik.

SECTION A: TRUE/FALSE [10 MARKS]

BAHAGIAN A: BENAR/SALAH [10 MARKAH]

Instruction: Write your answer statement in your answer script.

Arahan: Tulis pernyataan jawapan anda di kertas jawapan anda.

1. Business information system is developed by people who are mission oriented.
Sistem maklumat perniagaan dibangunkan oleh orang yang berorientasikan misi.
2. Transaction processing systems involve large amounts of information.
Sistem Proses Transaksi melibatkan jumlah maklumat yang besar.
3. Diagram A1 is an activity diagram.
Rajah A1 di bawah adalah rajah aktiviti.

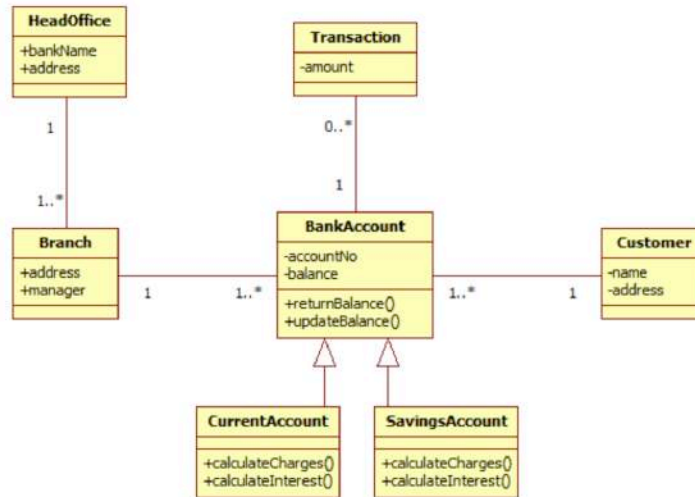


Diagram A1/Rajah A1

3. Main reasons for system projects is political factor.
Sebab utama projek sistem adalah berfaktorkan politik.
4. The first step in evaluating feasibility is to identify and weed out systems reports that are not feasible and you can use TOES during the process.
Langkah pertama di dalam menilai keboleksanaan adalah mengenalpasti dan mengeluarkan laporan sistem yang tidak boleh dilaksanakan, dan anda boleh menggunakan TOES semasa proses tersebut.

SECTION B: OBJECTIVE [10 MARKS]

BAHAGIAN B: OBJEKTIF [10 MARKAH]

Instruction: Write the correct answer in your answer script.

Arahan: Tuliskan jawapan yang paling tepat di kertas jawapan anda.

1. Diagram B1 below is called as:

Rajah B1 di bawah dipanggil sebagai:

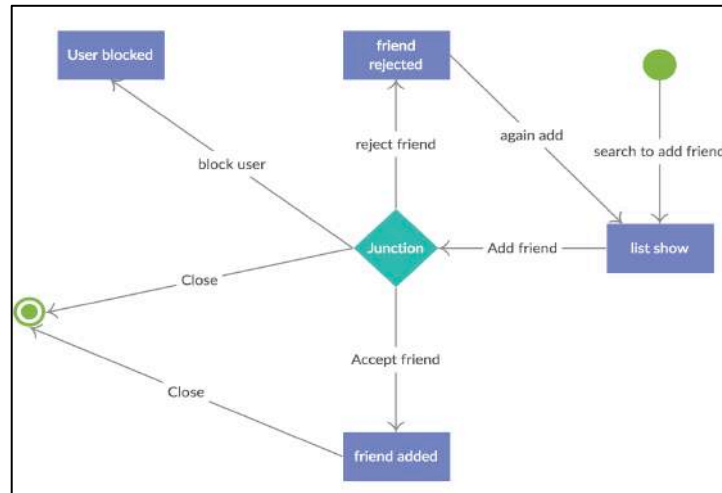


Diagram B1/Rajah B1

- A) Sequence Diagram/
Rajah Berurutan.
- B) State Transition Diagram/
Rajah Penyata Transaksi.
- C) Activity Diagram/
Rajah Aktiviti.
- D) Class Diagram/
Rajah Kelas.

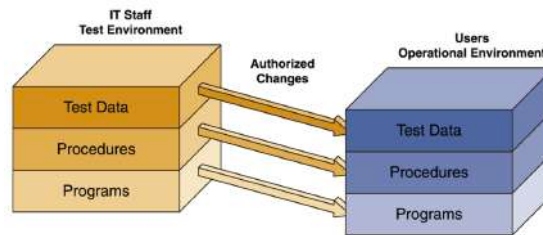
2. Which is statement below about structured analysis is **NOT TRUE**?

*Manakah ayat di bawah yang **TIDAK BENAR** mengenai analisa berstruktur?*

- A) Predictive approach/
Pendekatan ramalan
- B) Uses a set of process models to describe a system graphically/
Menggunakan set model process untuk menerangkan sesebuah sistem secara bergrafik
- C) A study of complementary of technology involving people and organization to distribute data/
Sebuah pengkajian pelengkap bagi teknologi yang melibatkan manusia dan organisasi dalam menyebarkan data.
- D) Process-centered technique/
Teknik proses berpusat

3. From the Test Environment diagram below, what does it mean with authorized changes?

Berdasarkan diagram Ujian Persekitaran di bawah, apakah yang dimaksudkan dengan perubahan pemberian kuasa?



- A) Change of Control in IT Environment / *Perubahan Kawalan di dalam Persekitaran IT*
- B) IT Staff test the system and transfer to users/
Staff IT membuat ujian sistem dan berpindah ke pengguna.
- C) Modification to data / *Pengubahsuaian data*
- D) Operational study / *Pengkajian kebolehlaksanaan*

4. Key part of preliminary investigation is a _____.

Kunci utama di dalam penyiasatan awalan adalah _____.

- A) Feasibility study / *Pengkajian kebolehlaksanaan*
- B) System analysis / *Analisa sistem*
- C) System requirements / *Keperluan sistem*
- D) System planning / *Merangka pelan sistem*

5. From the diagram Students Registration System Form below, which control features is not following the EIGHT (8) basic interface design guidelines?

Berdasarkan Borang Sistem Pendaftaran Pelajar di bawah, ciri-ciri yang manakah tidak mematuhi LAPAN (8) panduan asas rekabentuk antaramuka?

The screenshot shows a Microsoft Access form titled 'STUDENT REGISTRATION SYSTEM'. The form is displayed in 'Form View'. It contains several input fields for student information, including 'Semester', 'Academic Year', 'SSN', 'Last Name', 'First Name', 'MI', 'Street', 'City', 'ST', 'Zip', 'Home Phone', and 'Work Phone'. There are also checkboxes for 'Advisor Assigned', 'Transcript OK', 'Full Time', and 'Part Time'. A table titled 'Courses' is displayed with columns for 'Prefix', 'Number', 'Section', and 'Grade'. The table contains three rows of data: MAT 111 2, CIS 110 3, and BUS 285 1. There are buttons for 'Find Student', 'Print Record', and 'HELP'. A message box on the right says 'Please remind students that tuition and fees are due by the first day of class.' The form is titled 'STUDENT REGISTRATION SYSTEM' and includes a contact number for IT help: 'Contact IT Help at Ext. 2236 for user support'.

- A) The form title's is not displayed / *Tajuk borang tidak dipaparkan*
- B) Button display is not grouped properly / *Paparan butang tidak terkumpul dengan elok*
- C) Display messages is not available / *Paparan mesej tiada*
- D) No access for data input / *Tiada kemasukan untuk input data*

SECTION C: STRUCTURE [40 MARKS]

BAHAGIAN C: STRUKTUR [40 MARKAH]

Instruction: Write your answers in your answer script.

Arahan: Tuliskan jawapan di kertas jawapan anda.

QUESTION 1 / SOALAN 1

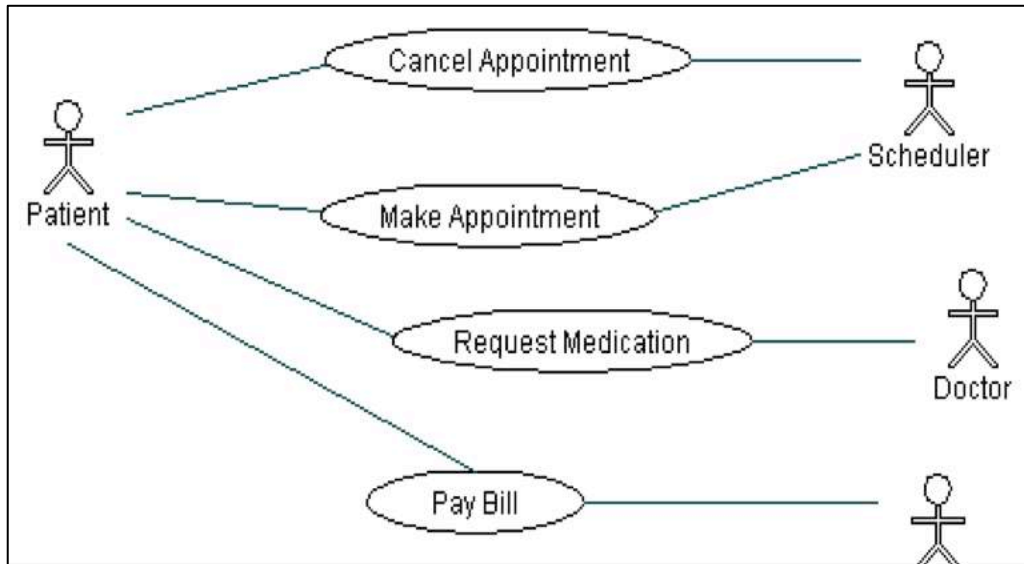


Diagram A / Rajah A

a) Based on the diagram A above, answer the following questions:

Berdasarkan diagram A di atas, jawab soalan-soalan berikut:

- i. What is the suitable name for the diagram above? **[2M]**
Apakah nama yang sesuai untuk rajah di atas?
- ii. How many actors involve in the diagram? **[2M]**
Berapa aktor yang terlibat di dalam rajah tersebut?
- iii. Briefly describes the process in the diagram **[4M]**
Terangkan secara ringkas proses di dalam rajah tersebut

b) Based on the diagram A above, answer the following questions:

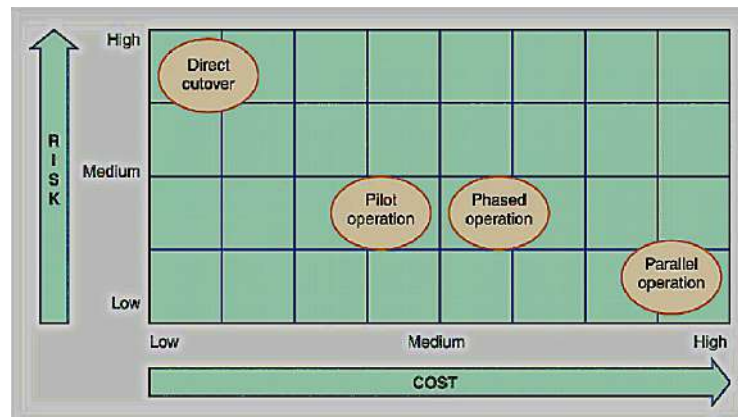
Berdasarkan diagram A di atas, jawab soalan-soalan berikut:

- i. Draw the context diagram using techniques: Gane and Sarson technique. **[5M]**
Lukiskan diagram konteks menggunakan Teknik Gane and Sarson.
- ii. Draw the context diagram using techniques: Yourdon technique. **[5M]**
Lukiskan diagram konteks menggunakan Teknik Yourdon.

QUESTION 2 / SOALAN 2

- a) Based on diagram B, explain details how the relationships of **RISK** and **COST** in the diagram below affected in all four types of system changeover.

Rujuk rajah B, terangkan dengan terperinci bagaimana bagaimana hubungan **RISIKO** dan **KOS** di dalam rajah di bawah memberi kesan di dalam kesemua empat jenis system 'changeover'. [12M]



QUESTION 3 / SOALAN 3

- a) From the decision table below, create a decision tree.

[10M]

Daripada jadual keputusan di bawah, binakan pokok keputusan.

Condition and Action/ <i>Kondisi dan perbuatan</i>	Rule 1	Rule 2	Rule 3	Rule 4	Rule 5
Customer is a Lili Book Store Member / <i>Pelanggan merupakan Ahli Kedai Buku Lili</i>	Y	Y	N	N	N
Purchase between 1 to 3 books / <i>Pembelian diantara 1 hingga 3 buku</i>	Y	N	Y	Y	N
Purchase 10 or more books / <i>Pembelian adalah 10 atau lebih buku</i>	-	-	Y	N	-
Allow 25% discount / <i>Benarkan diskaun 25%</i>	X				
Allow 10% discount / <i>Benarkan diskaun 10%</i>			X		
Allow 5% discount / <i>Benarkan diskaun 5%</i>				X	
No discount allowed / <i>Tiada diskaun dibenarkan</i>		X			X

SECTION D: 2 QUESTIONS [40 MARKS]

BAHAGIAN D: 2 SOALAN [40 MARKAH]

QUESTION 1 / SOALAN 1

Refer to the table Work Break Down Structure (WBS) below, identify the start date and end date in the Table. Assume the Develop Plan Task start at **1st March 2020** (Please refer to the Calendar at the Appendix – Page 10). Assume there's **NO** Public Holiday occurred in the year of 2020 and **weekend (Saturday and Sunday) is NOT A WORKING** days.

Rujuk Jadual 1 Jadual Struktur Pecahan Kerja (WBS) di bawah, kenalpasti tarikh mula dan tarikh akhir dalam jadual. Anggapkan Tugas Pelan Pembangunan bermula pada **1hb Mac 2020** (Sila rujuk Kalendar 2020 di Apendiks – Mukasurat 10). Anggap **TIADA** Cuti Umum berlaku pada tahun 2020 dan **hujung minggu (Sabtu dan Ahad)** adalah hari **TIDAK BEKERJA**.

- Identify start date and end date (Arrange the answer as in the Table 1 below) **[8M]**
Kenal pasti tarikh mula dan tamat tarikh (Susunkan jawapan seperti Jadual 1 di bawah)
- Explain the definition of Critical Path (CP) and what formula need to calculate the critical path **[4M]**
Jelaskan apakah maksud Laluan Kritikal dan apakah formula untuk mengira laluan kritikal.

Task No.	Description	Durations (Days)	Predecessor Tasks	Start Date	End Date
1	Review system request	5	-		
2	Review documentation	5	1		
3	Review Internet access delays	10	1		
4	Contact Managers for Interview	5	2		
5	Plan the interview schedule	7	3		
6	Prepare preliminary investigation report	40	4		
7	Deliver presentation	2	5		
8	Plan interview questions	4	5		
9	Contact interviewees	3	6		
10	Conduct interviews	5	7, 8		
11	Send questionnaire and obtain results	35	9, 10		
12	Tabulate all results	35	11		

Table 1: Work Break Down Structure Schedule / Jadual 1: Jadual Struktur Pecahan Kerja

QUESTION 2 / SOALAN 2

Refer to the case study below and answer the following questions:

Rujuk kepada kes di bawah dan jawab soalan-soalan berikut:

Dr. Thomas Waggoner, an information systems professor at the local university, is at the Will Call window at the Medallion Theatre, trying to pick up tickets he had reserved. However, due to an oversight which turns out to be rather frequent, his tickets were sold to another patron. Fortunately for Dr. Waggoner and his wife, who are celebrating their wedding anniversary, the box office manager finds two box seats which had not been claimed. In talking with the box office manager, Dr. Waggoner starts thinking that he could perhaps help the theatre avoid this type of problem in the future. His students could design and build a system to help keep track of ticket sales, and hopefully help the theatre become more efficient.

Dr. Thomas Waggoner, seorang professor sistem maklumat di sebuah universiti local, sedang berada di kaunter Teater Medallion, cuba mengambil tiket beliau yang telah di tempah. Namun, terdapat kesilapan yang telah terjadi beberapa kali, tiket beliau telah dijual kepada pelanggan lain. Namun Dr. Waggoner dan isteri beliau yang sedang menyambut ulang tahun perkahwinan mereka sangat bertuah, selepas pengurus 'box office' mendapati terdapat dua kekotak kerusi yang masih belum dituntut. Semasa berbual dengan pengurus 'box office', Dr. Waggoner mula berfikir dan kemungkinan beliau boleh menolong teater tersebut menghindari daripada berlaku masalah yang sama pada masa hadapan. Pelajar-pelajar beliau boleh merekabentuk dan membangunkan sistem yang dapat mengesan tiket yang terjual dan kemungkinan membantu teater tersebut menjadi lebih efisien/berkesan.

- a) Propose a system and identify a suitable title for the above case study. [3M]
Cadangkan sebuah sistem dan kenalpasti tajuk yang bersesuaian untuk kes di atas.

- b) Identify the system requirements by create the Input Process Output (IPO) table based on the requirements [5M]
Kenalpasti keperluan sistem tersebut dan binakan kekotak "Input Process Output (IPO)" berdasarkan keperluan tersebut.

- c) Create the context diagram for the propose system. Use Gane and Sarson Technique. [6M]
Binakan diagram konteks bagi sistem cadangan tersebut. Gunakan Teknik Gane dan Sarson.

- d) Create the use case diagram for the propose system. [5M]
Binakan diagram use case bagi sistem cadangan tersebut.

- e) Design the suitable user interface for the propose system. [6M]
Rekabentuk antara muka yang bersesuaian untuk sistem cadangan di atas.

- f) Explain what is the possible changeover method suitable to be applied on the propose system? [3M]
Jelaskan apakah metod changeover yang berkemungkinan sesuai untuk diaplikasikan ke atas sistem cadangan tersebut.

2020

JANUARY

Sun	Mon	Tue	Wed	Thu	Fri	Sat
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5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
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FEBRUARY

Sun	Mon	Tue	Wed	Thu	Fri	Sat
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MARCH

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APRIL

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MAY

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31						

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JULY

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SEPTEMBER

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OCTOBER

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NOVEMBER

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29	30					

DECEMBER

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