King Saud University

College of Computer and Information Sciences
Computer Science Department

Course Code:	CSC 215
Course Title:	Procedural Programming with C
Semester:	Spring 2019
Exercises Cover Sheet:	**Mid 1 Exam**

Student Name:	
Student ID:	
Student Section No.	

Tick the Relevant	Computer Science B.Sc. Program ABET Student Outcomes	Question No. Relevant Is Hyperlinked	Covering %
√	**a) Apply knowledge of computing and mathematics appropriate to the discipline;**	**1**	**33**
√	**b) Analyze a problem, and identify and define the computing requirements appropriate to its solution**	**2**	**40**
√	**c) Design, implement and evaluate a computer-based system, process, component, or program to meet desired needs;**	**3**	**27**
	d) Function effectively on teams to accomplish a common goal;		
	e) Understanding of professional, ethical, legal, security, and social issues and responsibilities;		
	f) Communicate effectively with a range of audiences;		
	g) Analyze the local and global impact of computing on individuals, organizations and society;		
	h) Recognition of the need for, and an ability to engage in, continuing professional development;		
√	**i) Use current techniques, skills, and tools necessary for computing practices.**		
	j) Apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems in a way that demonstrates comprehension of the tradeoffs involved in design choices;		
	k) Apply design and development principles in the construction of software systems of varying complexity;		

Question 1 (5 marks)

What is the output of the following code :

code	Output result

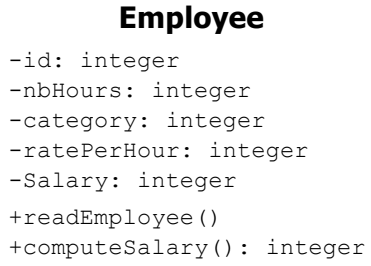
`#include <stdio.h>`
`int fun(int n) {`
`  int i, j, sum = 0;`
`  for(i = 1;i<=n;i++)`
`  for(j=i;j<=i;j++)`
`  sum=sum+j;`
`  return(sum);`
`}`
 	
`int main() {`
`  printf("%d", fun(4));`
`  return 0;`
`}`	

`#include <stdio.h>`
 	
`int main() {`
`  int a = 50, b = 60, c;`
`  c = a /* Will this comment work? */ + b;`
`  printf("%d /* And this? */ \n", third);`
`  return 0;`
`}`	

`int main() {`
`  int a[10];`
`  printf("%d",*a+1-*a+3);`
`  return 0;`
`}`	

Question 2 (6 marks)

We define an Employee as shown in the following UML class diagram.



We want to implement the Employee struct with the following constraints:

- The employee belong ONLY to *category* 1 or 2.
- *ratePerHour* is 250 for category 1 and 300 for category 2.
- *nbHours* that an employee should work per month is either 30 or 32.

1. Write the Employee structure.
2. Write the procedure *readEmployee* that reads the four first fields of an employee,
3. Write the function *computeSalary* that computes the salary of an employee. Note that the function *computeSalary* should be called inside the procedure *readEmployee*. *readEmployee* accepts only **valid data**.

Answer:

Question 3 (4 marks)

- Write a procedure ***findMinMax*** that gives the location of the min value and the max value in an array of integer. The array has MAXSIZE cells and only nb cells were filled.

Answer:

Result					
Question No.	**Relevant Student Outcome**	**SO is Covered by %**	**Full Mark**	**Student Mark**	**Assessor's Feedback**
1	a	33	5		
2	b	40	6		
3	b	27	4		
Totals		100%	15		

I certify that the work contained within this assignment is all my own work and referenced where required. **Student Signature:** **Date:**		**Feedback Received:** **Student Signature:** **Date:**