

**Department of Computer Science and Engineering**  
**Sant Longowal Institute of Engineering and Technology, Longowal**

**Exercise in lieu of In-house Training**

<b>GCS-19</b>		
<b>Sr. No.</b>	<b>Exercise</b>	<b>Description</b>
1	Your idea of maintaining physical distance in a triple seated hostel.	Suggested Sources of Information: <a href="https://www.cdc.gov/coronavirus/2019-ncov/preventgetting-sick/social-distancing.html">https://www.cdc.gov/coronavirus/2019-ncov/preventgetting-sick/social-distancing.html</a> Identify touch points in room, corridor, mess, common places. Suggest methods to minimize the touch at least at five places.
2	Your idea of maintaining physical distancing in the library.	Identify the possible sources of infection in library. Suggest methods for proper handling of study material, books etc. in the library to reduce the risk, and a proper seating arrangement to ensure physical distancing, safety measures for the library staff.
3	Study of various data structures.	Study the structure of each of these data structures and how to perform different operations such as traversal, insertion, and deletion: a. Arrays b. Linked lists c. Stacks d. Queues
<b>GCS-18</b>		
<b>Sr. No.</b>	<b>Exercise</b>	<b>Description</b>
1	Study of how data science is being used to deal with COVID-19.	Suggested Sources of Information: <a href="https://analyticsindiamag.com/covid-19-a-data-scientists-contribution-in-maintaining-physical-health-and-well-being-explained/">https://analyticsindiamag.com/covid-19-a-data-scientists-contribution-in-maintaining-physical-health-and-well-being-explained/</a> , <a href="https://towardsdatascience.com/5-ways-data-scientists-can-help-respond-to-covid-19-and-5-actions-to-avoid-d2accab283d1">https://towardsdatascience.com/5-ways-data-scientists-can-help-respond-to-covid-19-and-5-actions-to-avoid-d2accab283d1</a>
2	Study of systems for automatic assessment of programming assignments.	Study of tools for automatic assessment of programming assignments, major features that these tools support, security issues, and the integration of these tools into a learning management system such as Moodle.
3	Your idea of maintaining physical distancing in the department.	Suggest methods for seating arrangement in classes, proper handling of lab equipment, conduct of examinations, safety measures for teachers, students, and staff.
<b>GCS-17</b>		
<b>Sr. No.</b>	<b>Exercise</b>	<b>Description</b>
1	What are the differences between AI, Strong AI, and Automation? What are their similarities? Which do you think would be more	Suggested Sources of Information: <a href="https://www.researchgate.net/publication/336085049_Artificial_Intelligence_in_Automation">https://www.researchgate.net/publication/336085049_Artificial_Intelligence_in_Automation</a> Report

	helpful to humanity, AI or Automation, and why? Justify your answer in view of COVID-19 situation.	
2	Study the daily routine of essential workers to find out probable risks of contracting the COVID-19 virus.	Study the probable risks of contracting the COVID-19 virus by the following: a. Doctors b. Nurses c. Police personnel d. Municipal workers e. Bank employees f. Shopkeepers Also list precautionary measures to reduce risk of contracting the virus for each of the following categories. Suggest some innovative technological interventions that can help the aforementioned essential workers.
3	Study of tools and platforms for online learning.	Identify the tools for handling each of these tasks related to online learning: a. Learning Management Tools b. Content Creation Tools c. Mind and Concept Maps d. Tools for conducting Live Classes e. Assessment and Grading Explain the usage and installation procedure of each tool. Also identify the various challenges in online learning.
4	Visualize the rise of COVID-19 cases globally using a data visualisation tool of your choice.	Data source: <a href="https://github.com/RamiKrispin/coronavirus">https://github.com/RamiKrispin/coronavirus</a> Project description at <a href="https://www.datacamp.com/projects/870">https://www.datacamp.com/projects/870</a> Project tasks include: 1. From epidemic to pandemic 2. Confirmed cases throughout the world 3. China compared to the rest of the world 4. Adding a trend line to China 5. Adding a trend line to the rest of the world 6. Adding a logarithmic scale 7. Which countries outside of China have been hit hardest? 8. Plotting hardest hit countries as of Mid-March 2020

### Guidelines for Report:

Front Page: Project Name, Student Name, Course, Registration No, Institute Logo, Department Name, Institute Name and Address

Second Page: Certificate

Third Page: Dedication/Acknowledgement

Followed by – contents, followed by – report on your topic (each section to start with a new page)

In the End: References and Appendix (if Required)

Format: Font-12pt Arial, 1.5 line spacing, both side printing, main Heading 14 bold, sub heading 12 bold

**INFORMATION REGARDING THE PROJECT WORK OF ICD-17**

S.No.	Title	Students	REMARKS BY COORDINATOR/ Status
01	<b>MOTOR driving school system</b>	Nithilesh Kumar Avinash Kumar	Discussed the problem, title of the project is reallocated. File work shall be completed in next 5 days. All issues resolved. (Resource: Internet)
02	<b>Microcontroller based digital meter</b>	Anchal Singh Navrose Kaur Archi Kumari	Discussed the problem, title of the project is reallocated. File work shall be completed in next 5 days. All issues resolved. (Resource: Internet)
03	<b>Note making application</b>	Kabita Kumari Sapna Kumari	Discussed the problem, title of the project is reallocated. File work shall be completed in next 5 days. All issues resolved. (Resource: Internet)

## Exercise in lieu of Industrial Training ICD DCS-CDE 18 Second Year Students (CSE)

Sr, No.	Exercise	How to write
1. A.	<p>Identify the suitable opportunities for ICD (Computer Science and Engineering) in</p> <p>i. Employment (Industry/service sector)</p> <p>ii. Self-Employment (Start-up/business opportunity/ setting up of small plant)</p> <p>iii. Higher studies</p>	<p><b>Suggested Sources of Information-</b></p> <ol style="list-style-type: none"> <li><a href="https://www.investindia.gov.in/team-india-blogs/service-sector-india-paradigm-shift">https://www.investindia.gov.in/team-india-blogs/service-sector-india-paradigm-shift</a></li> <li><a href="https://en.wikipedia.org/wiki/Self-employment">https://en.wikipedia.org/wiki/Self-employment</a></li> <li><a href="https://www.investopedia.com/terms/s/self-employed.asp">https://www.investopedia.com/terms/s/self-employed.asp</a></li> <li><a href="https://en.wikipedia.org/wiki/Higher_education">https://en.wikipedia.org/wiki/Higher_education</a></li> </ol> <p>Additional Related sources from the Internet, books, Magazine etc. can be used.</p> <p><b>Report Writing –</b> Give names of industries along with application of computer engineering, Self-employment opportunities, Options for Higher studies</p>
B.	<p>Write a report on any one of Following topics-</p> <ol style="list-style-type: none"> <li>Internet of Things</li> <li>Cloud Computing</li> <li>Software Engineering</li> <li>Web Designing</li> <li>Networking</li> <li>Data Analytics</li> <li>Programming</li> <li>Uses of Internet</li> <li>PC Management</li> <li>COVID-19</li> </ol>	<p><b>Suggested Sources of Information-</b></p> <ol style="list-style-type: none"> <li><a href="https://www.internetsociety.org/resources/doc/2015/iot-overview?gclid=Cj0KCQjwzN71BRCOARIsAF8pjfjiH5cRtQQ43QPFztccx15coc716xHJPapFdQYYyOTA5TnLuns7DW0aAqzfEALw_wcB">https://www.internetsociety.org/resources/doc/2015/iot-overview?gclid=Cj0KCQjwzN71BRCOARIsAF8pjfjiH5cRtQQ43QPFztccx15coc716xHJPapFdQYYyOTA5TnLuns7DW0aAqzfEALw_wcB</a></li> <li><a href="https://en.wikipedia.org/wiki/Internet_of_things">https://en.wikipedia.org/wiki/Internet_of_things</a></li> <li><a href="https://www.zdnet.com/article/what-is-cloud-computing-everything-you-need-to-know-from-public-and-private-cloud-to-software-as-a/">https://www.zdnet.com/article/what-is-cloud-computing-everything-you-need-to-know-from-public-and-private-cloud-to-software-as-a/</a></li> <li><a href="https://en.wikipedia.org/wiki/Cloud_computing">https://en.wikipedia.org/wiki/Cloud_computing</a></li> <li><a href="https://www.javatpoint.com/software-engineering-tutorial">https://www.javatpoint.com/software-engineering-tutorial</a></li> <li><a href="https://www.googleadservices.com/pagead/aclk?sa=L&amp;ai=DChcSEwjanaS9yKnpAhXKVWAKHfUrBQsYABACGgJ0bQ&amp;ohost=www.google.com&amp;cid=CAESQeD2zqA0Z2BQKHH2qLIICEoAKJyuliPq75zb_EoJ_a-HiJARKji4YK0AsUD2vGIIHUhe8JYI0ma3bp7MOX8CUpYj&amp;sig=AOD64_0I5QovhKE4LEKvMv4aO0cFyQ2mvgg&amp;q=&amp;ved=2ahUKEwjxqpq9yKnpAhXKzTgGHdxKCAAQ0Qx6BAGWEAE&amp;adurl=">https://www.googleadservices.com/pagead/aclk?sa=L&amp;ai=DChcSEwjanaS9yKnpAhXKVWAKHfUrBQsYABACGgJ0bQ&amp;ohost=www.google.com&amp;cid=CAESQeD2zqA0Z2BQKHH2qLIICEoAKJyuliPq75zb_EoJ_a-HiJARKji4YK0AsUD2vGIIHUhe8JYI0ma3bp7MOX8CUpYj&amp;sig=AOD64_0I5QovhKE4LEKvMv4aO0cFyQ2mvgg&amp;q=&amp;ved=2ahUKEwjxqpq9yKnpAhXKzTgGHdxKCAAQ0Qx6BAGWEAE&amp;adurl=</a></li> <li><a href="https://www.googleadservices.com/pagead/aclk?sa=L&amp;ai=DChcSEwjanaS9yKnpAhXKVWAKHfUrBQsYABADGgJ0bQ&amp;ohost=www.google.com&amp;cid=CAESQeD2zqA0Z2BQKHH2qLIICEoAKJyuliPq75zb_EoJ_a-HiJARKji4YK0AsUD2vGIIHUhe8JYI0ma3bp7MOX8CUpYj&amp;sig=AOD64_2D6x9sUGzMVzLGO_cCu1ZxXhGTQ&amp;q=&amp;ved=2ahUKEwjxqpq9yKnpAhXKzTgGHdxKCAAQ0Qx6BAGXEAE&amp;adurl=">https://www.googleadservices.com/pagead/aclk?sa=L&amp;ai=DChcSEwjanaS9yKnpAhXKVWAKHfUrBQsYABADGgJ0bQ&amp;ohost=www.google.com&amp;cid=CAESQeD2zqA0Z2BQKHH2qLIICEoAKJyuliPq75zb_EoJ_a-HiJARKji4YK0AsUD2vGIIHUhe8JYI0ma3bp7MOX8CUpYj&amp;sig=AOD64_2D6x9sUGzMVzLGO_cCu1ZxXhGTQ&amp;q=&amp;ved=2ahUKEwjxqpq9yKnpAhXKzTgGHdxKCAAQ0Qx6BAGXEAE&amp;adurl=</a></li> </ol> <p>Additional Related source from the Internet, books, Magazine etc. can be used</p> <p><b>Report Writing –</b> Detail explanation of the concerned topic along with Computer Science and engineering related examples</p>

C.	If you were asked to automate an existing manual procedure from our daily lives for COVID-19 situation, what would you choose to automate? Give reasons for choosing the particular procedure. How would you do it?	<b>Suggested Sources of Information-</b> <a href="https://nevonprojects.com/motion-based-automatic-door-opener-project/">https://nevonprojects.com/motion-based-automatic-door-opener-project/</a> <b>Report Writing –</b> Name the process to be automated, Reason for choosing the process, Explain how to automate
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**Second Page:** Certificate,

**Third Page :** Dedication/Acknowledgement, followed by – Contents, Followed BY –Report on 1A, B & C as suggested above, each section to start with New page,

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## Exercise in lieu of In-house Training

### DCS-CDE first year Students

Sr. No.	Exercise	How to write
1. A.	Data Analysis in Microsoft Excel Using following operations: I. Sort II. Filter III. Conditional formatting IV. Charts	<b>Suggested sources of Information:</b> <ol style="list-style-type: none"> <li><a href="https://www.excel-easy.com/data-analysis.html">https://www.excel-easy.com/data-analysis.html</a></li> <li><a href="https://www.youtube.com/playlist?list=PL_onPhFckVQjC-NEfb7NXLskfFlzln7b">https://www.youtube.com/playlist?list=PL_onPhFckVQjC-NEfb7NXLskfFlzln7b</a></li> <li><a href="https://www.tutorialspoint.com/excel_data_analysis/index.htm">https://www.tutorialspoint.com/excel_data_analysis/index.htm</a></li> <li>Textbooks</li> </ol> <b>Report Writing –</b> Step-wise description, keyboard shortcuts
B.	Identification of various components of motherboard.	<b>Suggested sources of Information:</b> <ol style="list-style-type: none"> <li><a href="https://en.wikipedia.org/wiki/Motherboard">https://en.wikipedia.org/wiki/Motherboard</a></li> <li><a href="https://www.youtube.com/watch?v=b2pd3Y6aBag">https://www.youtube.com/watch?v=b2pd3Y6aBag</a></li> <li><a href="https://www.kencorner.com/computer-motherboard-components/">https://www.kencorner.com/computer-motherboard-components/</a></li> <li>Textbooks</li> </ol> <b>Report Writing –</b> Introduction, Different types, various components and their uses, installing components of motherboard
C.	Your idea of maintaining physical distance in a triple seated Hostel.	<b>Suggested Sources of Information:</b> <ol style="list-style-type: none"> <li><a href="https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/social-distancing.html">https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/social-distancing.html</a></li> </ol> <b>Report Writing –</b> Identify touch points in room, corridor, Mess, Common Places Suggest methods to minimize the touch at least at five places
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