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# Extended Abstract

International Innovation & Design in Library &  
Information Science Competition (InDeLib2022)

*Organized by*

Faculty of Information Management  
UiTM Kedah Branch



UNIVERSITI  
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MARA

**Editors**

Asmadi Mohammed Ghazali  
Abd Latif Abdul Rahman



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## CONTENTS

1. DETECTIVE LOOKING CHART: PLUTCHIK EMOTION GAMES FOR KIDS THROUGH VARK MODEL FOR ASD CHILDREN .....	1
2. E-VIEW: LOW VISION READER ASSISTANT .....	4
3. WHERE IS YUYU?: DETECTIVE THEME AUGMENTED REALITY (AR) CHILDREN'S BOOK .....	7
4. DEVELOPMENT OF BIODEGRADABLE PLASTIC USING <i>CAULERPA LENTILLIFERA</i> 'S EXTRACT FOR A SUSTAINABLE ENVIRONMENT .....	9
5. DEVELOPMENT OF BIODEGRADABLE PLASTIC USING <i>METAPENAEUS INTERMEDIUS</i> 'S SHELL EXTRACT TOWARDS A SUSTAINABLE FUTURE .....	11
6. LITTLE MATES BUSY BOOK .....	13
7. PHYTOPLANKTON MAP .....	15
8. SAMUDERAMAPS: WATER QUALITY MANAGEMENT LIBRARY FOR CONSERVATION AND SUSTAINABLE USE OF MARINE RESOURCES AND ECOSYSTEMS .....	17
9. VIRTUAL REFERENCE CONSULTATION SERVICES .....	19
10. ZOOPLANKTON MAP .....	21
11. CASUAL BOOK WRAPPER .....	23
12. FRAMEWORK: VISUAL-SPATIAL: A MEDIATOR EFFECTS ON THE AUTISM SPECTRUM DISORDERS (ASD) ACHIEVEMENT IN SPEECH UTTERANCE .....	26
13. Sec-CompFY: SECURE COMPARTMENT FOR YOU .....	28
14. SMART LeoBOT .....	31
15. SMART SEIRS .....	33
16. IMPROVISE THE INTERLIBRARY LOAN SYSTEM: DEVELOPMENT OF INTERLIBRARY LOAN ONLINE SYSTEM (iNTeLS) .....	35
17. REDISCOVERING WISDOM THROUGH ANIMATED DA'WAH SERIES FOR CHILDREN .....	37
18. BATEEQ PACKERS .....	40
19. BAMBOO RAINDROP DRAINAGE SYSTEM .....	42
20. MY BOOK .....	44
21. IDOL: INTERACTIVE DIGITAL OUTDOOR LIBRARY .....	46
22. THE SNOWMAN .....	49
23. UUM IN4SHARE AS INFORMATION SHARING PLATFORM .....	52
24. INFOADVISER .....	54

## **SAMUDERAMAPS: WATER QUALITY MANAGEMENT LIBRARY FOR CONSERVATION AND SUSTAINABLE USE OF MARINE RESOURCES AND ECOSYSTEMS**

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### **Abstract**

Major pollutants such as untreated sewage and chemical run-off can degrade the health and safety of humans, marine organisms, and ecosystems. Tackling marine water quality must start immediately, especially when marine resources are at high risk. There are few available water quality maps, especially in the Northern regions of Malaysia. SAMUDERAMAPS's aims to provide spatial-temporal information on water quality data for the conservation and sustainable use of marine resources and ecosystems. SAMUDERAMAPS was created by integrating the most recent data on physicochemical water parameters with Geographic Information System (GIS) technologies. SAMUDERAMAPS is a ready-made product containing water quality maps of physicochemical water parameters, including water nutrient parameters, for the Kedah regions such as Sungai Kilim, Pantai Kok, Pulau Dayang Bunting, Pulau Tuba, and Sungai Merbok. SAMUDERAMAPS provides a selection of paper and digital maps at a reasonable price. These maps are designed to meet the needs of a wide range of customers, including social and economic players, thus for local communities as well. SAMUDERAMAPS can assist environmentalists in monitoring water quality parameters, resources and ecosystems in difficult-to-reach or highly biodiverse areas. SAMUDERAMAPS also assists with site selection and hotspot analyses to promote the long-term sustainable development of mariculture regions, coastal tourism destinations, marine transportation activities, and fishing operations. SAMUDERAMAPS is consistent with the Sustainable Development Goals established by the United Nations SDG 14: "Life below water," SDG 2: "Zero hunger," SDG 3: "Good health and well-being," and SDG 13: "Climate action".

### **Keywords**

Conservation, Marine, Resources, Sustainable, Water Quality.

### **Product Description**

Clients can use the collection of water quality maps that SAMUDERAMAPS offers. Water physiochemical parameters (such as dissolved oxygen, pH, temperature, salinity, total dissolved solids, etc.) and water nutrients parameters (chlorophyll-a, nitrate, phosphate, etc.) are accessible in SAMUDERAMAPS packages. Currently, only a few regions are covered by our company: Pulau Dayang Bunting, Pulau Tuba, Sungai Kok, Sungai Kilim, and Sungai Merbok. Kedah. Soon, Perlis and Pulau Pinang are anticipated to be covered.

The development of SAMUDERAMAPS is based on integrating water quality data and spatial technology. The interpolation method was used for the development of models of water quality. Figure 1 shows the sample of maps from SAMUDERAMAPS.

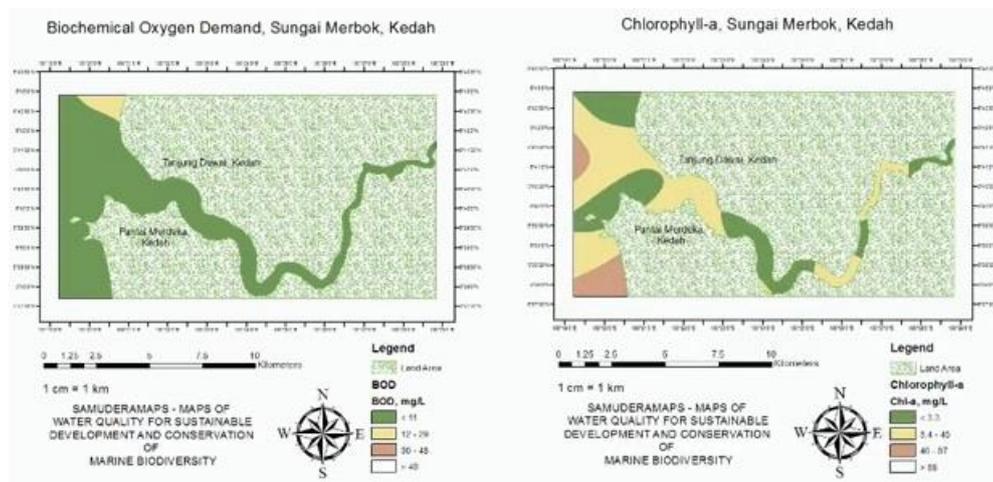


Figure 1: Maps from SAMUDERAMAPS (sample)

### Novelty and Uniqueness

For Malaysia's Northern areas, SAMUDERMAPS is the first set of spatial water quality maps to be created. Current information on water quality was combined with cutting-edge spatial technology tools to develop the created maps. Clients can ask for various visual map presentations to suit their needs and intended applications.

### Benefit to Mankind

Our company offers SAMUDERAMAPS in the form of paper or digital maps. Customers from various industries, including business owners, tourism industry participants, marine culture operators, private sector organisations, and governmental agencies, can buy SAMUDERAMAPS. Thus, SAMUDERAMAPS can be used for site-selection analysis to discover the optimum area to start a marine-based business (local population) and monitor water pollution that could impact the coastal and marine ecosystems.

### Potential Commercialization

With a wide range of clients anticipated, SAMUDERAMAPS has a promising future. Our organisation has determined that SAMUDERAMAPS differs from other spatial map products using lens.org (used for searching, analysing, and maintaining scholarly and patent data). SAMUDERAMAPS has also triumphed in several innovation contests and has demonstrated that it is an effective tool for the scientific study and monitoring of marine ecosystems. As a result, SAMUDERAMAPS has a bright potential for global commercialization.

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