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1 [LRS21, Zin15]. **12**
[BBSPK22, GES14, GYSH19, HAGM14,
HAG15b, JK20, OWK21, TM14].
2 [RSL22].
6 [IKWR22].
7th [SA20].
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[DSU20, KDV22, SSD09, SA20]. **Academia**
[NJK19]. **Academic** [KPM18]. **Academics**
[SDBJ19]. **Academies** [DLM11].

Accessibility
[CGZ+20, PLB+12, WCPF20].
Accomplishment [ZD15]. **according**
[MM12]. **Accreditation** [Blu22].
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[BCZ19, OPC17, RCS11]. **Case** [BBD⁺10, BAR14, BCC⁺19, BWE11, GND19, GM11, KMB⁺15, LSSM19, SSD09, VS22]. **Cash** [RMM21]. **Cash-free** [RMM21]. **Centered** [GMM17, LRS21, RSL22, RC13]. **Challenges** [ALHR17, BBG12, GES14, SGHS19, VGRM19]. **Change** [FPSS22, PS21]. **Characterizing** [YB19]. **Chatbot** [PD22]. **Child** [HHM19]. **Children** [DCW19, WDC15, WDCT20]. **China** [CJS⁺17]. **Chinese** [TB16]. **Choice** [ASG19, LRJ14, MHP20, RHSS20]. **Choices** [MDS16]. **Chutes** [LD19]. **Class** [BHHMG21, PCH09, YR15]. **Classes** [Xin15]. **Classifying** [SPC19]. **Classroom** [BWE11, GMM17, HB15, LSSM19, MRG17, SSSC18, Gri13]. **Classroom-Based** [SSSC18]. **Classrooms** [RPT⁺22, WW17, ZCJR20]. **cloud** [ZPB13]. **clouds** [RRKP13]. **Coaches** [IKWR22]. **Coaching** [MRG17]. **Code** [ABCD20, CJS⁺17, DJHGI19, ILRD20, VMFG17, HAA13, LC21, NJK19]. **Code.org** [MMFR20]. **CodePlus** [LBT20]. **Coding** [KO22b, LG21, TK16, TMSA22]. **Cognitive** [LRJ14, RJJ10, TAL17]. **Cohort** [BTF⁺19]. **Collaboration** [Bo122]. **Collaborative** [CDK⁺14, MBSBA09, VFFT16]. **College** [BJCS21, BSS20, CKSS21, EKSW11, GMM17, LR11, LD19, MDS16, RP19, WDK20]. **Colleges** [She13]. **Collusion** [KSCP22]. **Combining** [CDB⁺22]. **Comments** [VMFG17]. **Communication** [BBG12, KKNL21]. **Communications** [MAK12]. **Communities** [LC21]. **Community** [FKG17, LD19]. **Como** [Vog21]. **Comparing** [DSU20, ECF18, WW17]. **Comparison** [CJS⁺17]. **Competence** [TSK12]. **Competency** [Lai22]. **Compiler** [SSD09]. **Complexity** [EK17, KDV22]. **Complications** [TSV18]. **Comprehension** [KDV22]. **Compulsory** [DJHGI19, Hub12]. **Computational** [FKG17, FEC17, GBB⁺17, KLS⁺14, KKNL21, KO22b, Lai22, LIG22, RG19, SNOT21, TM11a, VMFG17, WDC15, WDCT20, WHS⁺17, WSP⁺11, YMZ⁺14, YR15]. **Computer** [AZK⁺20, Arm11, BVNN22, BBD⁺10, BB10, BDDGT14, BAR14, BHHMG21, BBG12, Blu22, BJCS21, BWE11, BBF⁺21, BSCH14, BCD10, BSS20, CKSS21, CMSP⁺19, CMSP20, CG19, CHP⁺18, DCW19, DJGIO20, DBR⁺20, EBC⁺21, FPSS22, GES14, GM14, GM11, GMM17, HB15, HM22, HHM19, Hub12, HAGM14, HAG15b, IIRY17, IKWR22, JMN⁺22, JK20, KWB20, KS14, KFME11, KMB⁺15, Lai22, LK19, LMGVS⁺16, LZRO21, LD19, MFM⁺16, MHP20, MRG17, MMFR20, MW18, PLF22, PGJS17, Pet19, PS21, PO20, RVAN15, RSPB17, RJJ10, RWK⁺15, RHSS20, RV09, RCS11, Ryo19, SNG⁺22, She13, SPR12, SA20, TK16, TB16, UR17, VFFT16, Wag16, WK10, WW17, WDK20, YB19, YVQ⁺10, ZNF⁺20, ZCJR20, ZJWF11, AGEL13, Gri13, LGP13, Zin15]. **Computer-Based** [Lai22]. **Computes** [GEME14]. **Computing** [AM21, Bar09, BH16, BMB⁺18, BBF⁺21, Bur11, CHA17, CAL15, CB19, CGZ⁺20, DBBR11, DLM11, EKSW11, EBC⁺21, ETN⁺21, ET12, ECF18, GND19, GHT⁺11, GGH⁺10, GYSH19, GK17, HSI⁺19, HCSAz22, HM22, HOC17, KLS⁺14, KG18, LRS21, LV11a, LV11b, LSTA22, LR11, LRH⁺22, LG21, MFR13, MHP20, MBE⁺16, MDS16, MCK17, MS11, O'G12, OWK21, OHR22, PM09, RB21, RLN⁺22, RHSS20, RP19, RvJP20, RMM21, RSL22, SH18a, SDBJ19, SNG⁺22, SSSC18, SH18b, TM09, TM10, TM11a, TM11b, TM14, TC19, WCPF20, YR15, AGEL13, HAA13, NCLN13]. **Concept** [GGH⁺10, IIRY17, PHP⁺22]. **Conceptions** [RvJP20, VS22, Xin15]. **Concepts** [AWW15, KLS⁺14, KA16, MS11, WBK⁺22, YZC19]. **Conceptual** [TPQE18]. **concurrency** [CHM13]. **concurrent** [BAGM13]. **Conditions** [RPT⁺22]. **Considerations**

[TBP21]. **Considered** [DJGIO20]. **Considering** [CGZ+20]. **Consortium** [BCD10]. **construction** [NCLN13]. **Constructionist** [MSH10]. **Content** [BSS20, VMAG22, WCPF20, YB19]. **Context** [GEME14, LZRO21, ORS16]. **Contingency** [AHL17]. **Continues** [Hum17]. **Continuum** [CB19]. **Controlled** [Bol22, DSUP20, DSU20, MC19, WX18]. **Conversion** [HM21]. **Cooperative** [BC13]. **Copying** [DJHGI19]. **Core** [JNA18, ZPB13]. **Correctness** [DHH+15]. **Counter** [EBC+21]. **Counter-hegemonic** [EBC+21]. **Countries** [GES14]. **Course** [AHL17, BHHMG21, BTF+19, BCZ19, CKSS21, CDCLK17, EK17, IT17, KLL16, LLKH18, MTGM21, NGK11, PDF15, Rit09, She13, SH10, WX18, Wan11, d'A10]. **Courses** [ASG19, CHA17, CDK+14, Ip12, MFCLG19, Mit14, OHR22, Ric09, SSF+19, SNG+22, SBH+18, TBP21, TK16, UR17, VMAG22, HAA13, LGP13]. **Coverage** [ECF18]. **Crafts** [KLS+14]. **Crafts-Oriented** [KLS+14]. **Creating** [Rit09]. **Creation** [RWK+15]. **Creative** [Fie19]. **Creativity** [ALP12, Sha22]. **Creativity-Supporting** [ALP12]. **Critical** [GHT+11, HOC17]. **Cross** [TM14]. **Cross-National** [TM14]. **Crossing** [HM21]. **CS** [RVAN15, Blu22, FPSS22, HM21, KV15, LBT20, MSP21, PLB+12, RTE21, SWL+22, TABA12, TWH18, VTB+20, VS22]. **CS1** [BC13, ORS16, Sha22]. **CS2** [TPQE18]. **CS4HS** [RSPB17]. **CSF** [HBVTN21]. **CSLE** [ALP12]. **CSS** [PDF15]. **CSTutor** [BL14]. **CUDA** [DSU20]. **Current** [ALHR17, CAL15, RB21]. **Curricula** [AJNN20, BCD10, WCPF20]. **Curriculum** [Blu22, BMB+18, DTT16, McG12a, WHS+17, AGEL13]. **Cyber** [AJNN20, JNA18]. **Cyber-Defense** [JNA18]. **Cybersecurity** [JNA18, LRVW14, PHP+22]. **Cyprus** [CJS+17].

Darmstadt [RVAN15]. **Data** [AHL17, BA17, BL14, CHU+09, GBB+17, WZL+22, YR15]. **Data-Driven** [GBB+17, YR15]. **Database** [MTGM21]. **Debieron** [Vog21]. **Debugger** [BS10]. **Debugging** [ABCD20]. **Decade** [CHH+11, JK20]. **Decisions** [HM22]. **Defense** [AJNN20, JNA18]. **Degree** [AANK14, McG12a]. **Demo** [KDXB18]. **Demo-Oriented** [KDXB18]. **Demographics** [LZRO21]. **Derived** [AHL17]. **Describing** [HLKZ12]. **Descriptive** [Blu22]. **Design** [BC13, BC12, Bur11, CMSP+19, Coo10, DCW19, EKSW11, Ip12, Joh19, LSSM19, OWK21, PCH09, RWK+15, RG19, RLN+22, Shi16, TSK12, Xin15]. **Designing** [BBSPK22, NCLN13, OHR22, Ric09]. **Desk** [Hum17]. **Detection** [MM12, NJK19]. **Developing** [MHP20, TSK12, WHS+17]. **Development** [AWW15, BCZ19, BCC+19, BBF+21, CG19, HM19, Ip12, JMN+22, KO22b, Lar16, MC15, Mod21, PDF15, PHRC21, RSPB17, Rit09, VS22, VGRM19, ZD15]. **Devices** [RP19, TSK12]. **Diagnosing** [Kie09]. **did** [IT13]. **Didactical** [BDDGT14]. **Difference** [AM21]. **Differences** [Har21, SDBJ19]. **Different** [DSU20, KLM15, KA16, TAL17]. **Difficult** [EK17, YZC19]. **Difficulties** [HLKZ12, LBK11, MS19, QL17]. **Digital** [BC12, MW18, RG19]. **Dimensions** [TB16]. **Directed** [MBE+16]. **Directedness** [BBSPK22]. **direction** [IT13]. **Discipline** [MFR13, Pet19, TM10]. **Discipline-Based** [MFR13]. **Discovering** [VGRM19]. **Discrepancies** [DJGIO20]. **Discussion** [UCK+10]. **Disrupting** [RLN+22]. **Distributed** [BTF+19, BCZ19, BCC+19, ORKH09]. **District** [PS21]. **District-Wide** [PS21]. **Diversified** [SNG+22]. **Diversity** [BVNN22, BCC+19, GYSH19, RBSS11]. **division** [LGP13]. **Do** [BBG12, LRH+22,

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Game-Based [HHM19, TAL17]. **Games**[Ip12, WDC15, WDCT20]. **Gamification**[AZK⁺20, MFCLG19, MTGM21, RPT⁺22].**Gap** [LRVW14]. **Gaps** [GGT20, GVA22].**Gender** [BVNN22, CHP⁺18, Har21,

KFME11, KKNL21, RCS11, Wag16].

Generation[BLNC09, CHU⁺09, EBC⁺21, KJH19].**Generic** [SKM13]. **Genesis** [TC19].**Georgia** [GEME14]. **Germany** [KMB⁺15].**Get** [MS19]. **Getting** [OPC17]. **Girl**[OPC17]. **Girls** [ETN⁺21]. **Global**[BTF⁺19, CB19, FDW19, IDC⁺19,SGHZS19, VGRM19]. **Goals**[CHP⁺18, MS11, SPC19, Zin15]. **Google**[RSPB17]. **Governance** [GND19]. **GPU**[DSU20]. **Grade** [KKNL21, SA20, TWH18].**Grades** [Zin15]. **Grading** [AvdM21].**Graduates** [SWL⁺22]. **Graphics** [She13].**GRASP** [TSK12]. **Greedy** [VI13]. **Greek**[TAL17]. **Greenfoot** [Köl10, UCK⁺10].**Grounded** [HM22, RP19]. **Group**[AvdM21, Ric09]. **Groups** [RBSS11]. **GSD**[VGRM19]. **GSD-Aware** [VGRM19]. **GSE**[HM19]. **Guest** [BB10]. **Guide** [SH18a].**Guided** [NGK11].**H** [BMB⁺18]. **H/FOSS** [BMB⁺18].**Hackathons** [Har21]. **Happens** [RMM21].**Hard** [SPC19, WBK⁺22]. **Hardware**[BC12, LRVW14]. **hegemonic** [EBC⁺21].**help** [HS13]. **Helping** [RT15]. **Heuristic**[KM16]. **High** [BSS20, CKSS21, DLM11,KLS⁺14, MFM⁺16, MSH10, TPQE18,WW17, WDK20, ZNF⁺20, ZCJR20,ZJWF11, AGEL13]. **High-Level** [TPQE18].**high-performance** [AGEL13]. **Higher**[AMD22, CJS⁺17, ILRD20]. **Hiring**[SWL⁺22]. **Hispanic** [GHT⁺11].**Hispanic-Serving** [GHT⁺11]. **Hispanics**[GHT⁺11]. **Historical**[BDDGT14, LZRO21]. **History** [BCD10].**Holistic** [NGK11]. **Home** [BBF⁺21].**Hours** [PHRC21]. **HTML** [PDF15].**human** [RC13]. **human-centered** [RC13].**Hybrid** [LSSM19]. **Hypertext** [Kar09].**Hypertextbook** [RV09]. **Hypothesis**[GBB⁺17]. **Hypothesis-Driven** [GBB⁺17].**i*CATch** [NCLN13]. **ICT** [TSK12]. **IDE**[HOC17, OHR22]. **IDE-Based** [HOC17].**Ideas** [SNOT21]. **Ideation** [TBP21].**Identification** [RJJ10]. **Identify** [LRJ14].**Identifying**

[AANK14, GVA22, LK19, WBK⁺22].

Identity [JMN⁺22, LRH⁺22, MHP20, RTE21]. **IEEE** [DTT16]. **Impact** [AZK⁺20, BCZ19, BJCS21, CDCLK17, KA16, LK19, LY21, MDS16, PS21, PLB⁺12]. **Impairments** [LR11]. **Implement** [HAG15b]. **Implementation** [LMGVS⁺16, BC13]. **Implementing** [AGEL13, MMFR20]. **Implications** [Bur11, UR17, HM22]. **Importance** [ECF18]. **Improved** [OHR22, TWH18]. **Improving** [IT17]. **In-Classroom** [MRG17]. **In-Code** [VMFG17]. **Incarceration** [SAyC⁺21]. **Including** [PLB⁺12]. **Inclusion** [IKWR22]. **Incorporating** [SDBJ19]. **Increase** [CMSP⁺19]. **Increases** [RKM20]. **Incremental** [RKM20]. **Incubators** [LC21]. **Indian** [RVAN15]. **Industry** [Ip12, MAK12, MSP21]. **Ineffective** [RJJ10]. **Influence** [DJGIO20]. **Influences** [McG12b]. **Informal** [CMSP⁺19, GEME14, LC21, SAyC⁺21]. **Informatics** [BLM⁺14, KS14]. **Information** [CHH⁺11, KKNL21, KPM18, MHP20, MAK12, RCS11]. **Informatively** [WBK⁺22]. **Informed** [CMSP⁺19]. **Inheritance** [LBK11]. **Initial** [FU10b]. **Initiatives** [PS21]. **Injections** [TK16]. **Insights** [SPC19, TAL17]. **INSPIRED** [DLM11]. **Institutional** [BMB⁺18, LD19]. **Institutions** [CJS⁺17, GHT⁺11]. **Instruction** [LIG22, MW18, Shi16, LGP13]. **Instructional** [IKWR22, BC13]. **Instructor** [AWW15, SPC19]. **Insufficient** [KV15]. **Integrated** [RG19]. **Integrating** [CDK⁺14, HAA13, SSF⁺19, TK16]. **Integration** [BSY⁺10, KPM18]. **Intelligence** [AMD22, LGGS22]. **Intention** [ZD15]. **Intentions** [DBR⁺20, SNG⁺22, TABA12]. **Interaction** [CHU⁺09, OHR22]. **Interactions** [MC19]. **Interactive** [BSY⁺10, HEE⁺19, JK20, TSK12].

Intercultural [AM21]. **Interest** [BJCS21, CMSP⁺19, DBR⁺20, OPC17, Zin15]. **Interface** [CG19]. **Internships** [MSP21]. **Intersection** [RHSS20]. **Intersectionality** [LZRO21]. **Intersections** [Vog21]. **Intervening** [EK17]. **Intervention** [GEME14, RKM20]. **Interventions** [LK19, LY21, OHR22]. **Interviews** [AJNN20, JNA18]. **Intro** [MMFR20]. **Introducing** [CG19, KLS⁺14, MFR13, TM09]. **Introduction** [BB10, BAR14, BAGM13, GM14, Gri13, Hub12, LRS21, LV11a, MC15, RB21, RSL22, SF19]. **Introductory** [BBG12, BNP11, CKSS21, GGH⁺10, KLM15, KA16, LY21, QL17, SKM13, TK16, WX18, Sor13]. **Inventories** [GGH⁺10]. **Inventory** [PHP⁺22]. **Investigating** [MS19, ZD15]. **Investigation** [HSI⁺19, MFCLG19, SS13, Xin15]. **Investigations** [LGGS22]. **Involvement** [BBF⁺21]. **Involving** [SBH⁺18]. **Israel** [GES14]. **Issue** [CB19, FU10b, KG18, LV11a, LV11b, MC15, RB21, RSL22, BAGM13, Gri13]. **Issues** [CAL15, KKNL21]. **Italian** [BLM⁺14]. **Iteratively** [EK17].

Java [BNP11, BA17]. **Job** [ECF18]. **Justice** [AM21, ETN⁺21, LRS21, RSL22]. **Justice-Centered** [LRS21, RSL22].

K-12 [BBSPK22, GYSH19]. **Keep** [PD22]. **Keeping** [Hum16]. **Kingdom** [McG12a]. **kit** [NCLN13]. **Know** [SDBJ19]. **Know-how** [SDBJ19]. **Knowledge** [AJNN20, DTT16, ECF18, GGT20, JNA18, TCK21, YB19]. **Korea** [CAL15].

Ladders [LD19]. **Language** [MRR⁺10, SPR12, SS13, Vog21]. **Languages** [KA16]. **Large** [BVNN22, BTF⁺19, BA17, SH18b].

Large-Scale [BA17]. **Latina** [ETN⁺21]. **Latino** [ZJWF11]. **Launching** [SF19]. **Leadership** [PS21]. **Learn** [GVA22, JNA18, LC21, MBE⁺16, PHRC21, RT15, TB16, ZD15, HS13]. **Learn-to-code** [LC21]. **Learned** [SWL⁺22]. **Learner** [Kie09]. **Learning** [AZK⁺20, AANK14, ALP12, BBG12, BS10, Bol22, BSY⁺10, CDK⁺14, CDB⁺22, CHP⁺18, DTT16, DJHGI19, Fie19, FU10b, GYSH19, GBB⁺17, GK17, HEE⁺19, HHM19, HOC17, IDC⁺19, Kie09, KG18, KA16, LLKH18, LMGVS⁺16, LZT⁺19, LBK11, LIG22, MRG17, MBE⁺16, McG12b, MAK12, MS11, MS19, MBSBA09, O'G12, PCH09, PHRC21, RT15, RG19, RPT⁺22, RvJP20, RMM21, SSF⁺19, SSSC18, SF19, SPC19, TMSA22, TAL17, TB16, TPQE18, VI13, VFFT16, WDC15, BC13]. **lecture** [Gri13]. **Led** [RLN⁺22]. **Left** [PLB⁺12]. **LEGO** [SGHZS19]. **Lens** [Arm11]. **Lessons** [OPC17, RSPB17]. **Level** [TPQE18]. **Levels** [Lar16]. **Liberal** [BBD⁺10, BB10, BCD10, WK10]. **Libraries** [RLN⁺22]. **Life** [BBG12]. **Limited** [Rit09]. **Lines** [ALHR17]. **Linking** [OPC17]. **Literacy** [KKNL21, MW18]. **Literal** [MS19]. **Literature** [HCSAz22, KJH19, LSTA22, PO20, QL17, Sha22]. **Local** [BTF⁺19]. **Logic** [HLKZ12]. **Long** [LK19]. **Long-Term** [LK19]. **Longitudinal** [BCC⁺19, OPC17, Pet19]. **Look** [MK19, OPC17, RS14, TM15]. **Looking** [Arm11, TM15]. **Low** [LZT⁺19]. **Low-performing** [LZT⁺19]. **Lower** [IIRY17].

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man [RMM21]. **Managing** [BCC⁺19]. **Many** [HAG15b, ZPB13]. **many-core** [ZPB13]. **Mapping** [LMH21, TS20]. **MapReduce** [RRKP13]. **Mathematical** [DHH⁺15]. **Matters** [TM10]. **Measurement** [DSUP20, KKNL21, WDCT20, RRKP13]. **Measures** [CHA17]. **Measuring** [GBB⁺17, Lar16, LBT20, WDC15]. **Medium** [She13]. **Medium-sized** [She13]. **Memoriam** [HAG15a]. **Mentoring** [MSH10]. **Merging** [Kar09]. **Meta** [DCW19, UR17]. **Meta-Analysis** [UR17]. **Meta-Synthesis** [DCW19]. **Method** [AHL17, VI13, VFFT16]. **Methodology** [MSH10, SH18a]. **Methods** [FEC17, LLKH18, PO20, BC13]. **Middle** [DBR⁺20, FEC17, KO22b, OPC17, TABA12, WSP⁺11]. **Middle-School** [TABA12]. **Milestones** [SNOT21]. **Mindset** [RKM20]. **Mindsets** [FPSS22]. **Minecraft** [KO22b]. **Mirror** [LGGS22]. **Misconceptions** [QL17]. **Mistakes** [BA17]. **Mittermeir** [HAG15a]. **MLeXAI** [RMNC10]. **Model** [BBF⁺21, BCD10, HOC17, LMGVS⁺16, RVAN15, RMNC10, Shi16, WDCT20, CHM13]. **model-driven** [CHM13]. **Modeling** [Bol22, LRJ14, Mit14]. **Models** [Blu22, CHA17]. **Moderator** [RPT⁺22]. **MOOC** [CHP⁺18, KV15]. **Most** [EK17]. **Motivate** [BHHMG21]. **Motivated** [ASG19]. **Motivation** [MBE⁺16, McG12b, NGK11]. **Motivations** [CGZ⁺20]. **Move** [RS14]. **Multi** [BMB⁺18]. **Multi-Institutional** [BMB⁺18]. **Multilingual** [JMN⁺22, Vog21]. **Multimodal** [RG19]. **Multiple** [ASG19, CHU⁺09]. **Multiple-Choice** [ASG19]. **multipurpose** [NCLN13]. **Musicians** [Fie19]. **Myself** [MRG17].

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[PLB⁺12]. **Non**
 [DJHGI19, GVA22, Har21, LBT20, SPC19].
Non-Compulsory [DJHGI19].
Non-Formal [LBT20]. **Non-Majors**
 [SPC19]. **Non-Technical** [GVA22].
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 [RC13]. **Normative** [Blu22]. **Norms**
 [HCSAz22]. **North** [KMB⁺15].
North-Rhine [KMB⁺15]. **Notional** [Sor13].
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 [BAR14].

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 d'A10, AGEL13]. **Other** [Fie19, QL17].
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 [AZK⁺20, OHR22, WX18]. **Outreach**
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 [ORKH09]. **Participating** [FKG17].
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 DBBR11, ETN⁺21, FKG17, KWB20, LV11a,
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PatternCoder [PCH09]. **Patterns**
 [Bol22, PCH09]. **Pedagogical**
 [TSK12, YB19, HAA13]. **Pedagogy**
 [BSS20, Ryo19, Zin15]. **Peer**
 [ILRD20, TPQE18, LGP13]. **Peers**
 [BBSPK22]. **Pensarse** [Vog21]. **People**
 [SNOT21]. **Perceived** [ZD15]. **Perception**
 [AAGH14]. **Perceptions**
 [AvdM21, Bar09, BJCS21, CMSP⁺19,
 ECF18, MDS16, ZCJR20]. **Perceptual**
 [CJS⁺17]. **Perfect** [MS11]. **Performance**
 [DSUP20, DJHGI19, KWB20, LY21,
 MTGM21, RKM20, Wag16, WZL⁺22, YB19,
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 [McG12b]. **Personalization** [BSY⁺10].
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Perspectives [BDDGT14, HAGM14,
 IKWR22, KLS⁺14, YZC19]. **Phase** [Shi16].
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POGIL [HS13]. **Point** [MS19, TWH18].
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 [Hun16, Hun17]. **Potential** [GK17]. **Power**
 [RTE21, Vog21]. **Powerful** [RvJP20].
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 [CB19, MS11, UR17]. **Practices**
 [ALHR17, KLS⁺14, KFME11].
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 [EKSW11, LR11, MDS16, RP19].
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 [EKSW11, LR11, MDS16, RP19]. **Predict**
 [CHP⁺18, LZT⁺19, LRH⁺22]. **Predicting**
 [WDK20]. **Prediction** [LLKH18].
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Problem-Solving [Kie09]. **Problems**
 [AANK14, Kie09]. **Procedural** [SSD09].
Process [CK09, HOC17, McG12a].
Processes [RJJ10]. **Processors** [SH10].
Procrastination [PD22]. **Product**
 [ALHR17]. **Productivity** [DSU20].
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Professionals [AJNN20, JNA18].
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 RT15, RVI09, SKM13, UFVI09, HS13].
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 [LBT20]. **Programmed** [WDCT20].
Programmer [MK19, YZC19].
Programmers [ABCD20, CG19].
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 [ASG19, AvdM21, Alb20, AAGH14,
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 IT17, KKLL16, KSCP22, KJH19, Kö110,
 KM16, KLM15, KA16, LLKH18, Lai22,
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 MFCLG19, MCK17, MC19, MS19, NGK11,
 OHR22, PCH09, QL17, RKM20, RJJ10,
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 [FDW19, IT17, LMGVS⁺16, Ric09,
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Project-Based
 [LMGVS⁺16, Ric09, RMNC10]. **Projects**
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 [KFME11]. **Promote** [LR11, OHR22].
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 [BNP11]. **Quantitative** [KLM15]. **Query**
 [TSV18]. **Questions**
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 [VS22]. **Randomized** [DSUP20, DSU20].
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 [RB21]. **Re-Entering** [RB21]. **react** [IT13].
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 [VMAG22]. **Reconfigurable** [SH10].
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 [KKLL16]. **Reference** [MS19, MM12].
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 [ET12]. **Reform** [GM11]. **Regarding**
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 [MC19]. **Replications** [HSI⁺19].
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 [IT13]. **Research** [BVNN22, Bar09, DCW19,
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 [BSCH14]. **Retaining** [HM21]. **Reusing**
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 [Alb20, HCSAz22, HOC17, ILRD20, KJH19,
 LSTA22, LMH21, NJK19, PLF22, PO20,
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 [HAA13]. **Rhine** [KMB⁺15]. **Rigorous**
 [HAG15b]. **Robot** [MC19]. **Robotics**

[LR11, MCK17, WHS⁺17]. **Robots** [McG12b]. **Robust** [CHU⁺09, LZT⁺19, TCK21]. **Roland** [HAG15a]. **Role** [OWK21, PGJS17, RBSS11, SNG⁺22, IT13]. **Rubric** [WCPF20]. **Rules** [DSS21]. **Rural** [TMSA22]. **Russia** [KS14].

Sampler [JK20]. **Scaffolding** [RT15]. **Scalable** [RWK⁺15, SH18a]. **Scale** [BBF⁺21, BA17]. **Scenario** [AAGH14]. **Scenario-Based** [AAGH14]. **Scholarship** [TM10]. **School** [BSS20, CKSS21, DLM11, DBR⁺20, GM11, IIRY17, JNA18, KLS⁺14, KS14, KO22b, MFM⁺16, MSH10, OPC17, RS14, TABA12, WW17, WDK20, WSP⁺11, ZNF⁺20, ZCJR20, ZJWF11]. **Schools** [BDDGT14, BAR14, BLM⁺14, BSCH14, FEC17, Hub12, HAGM14, HAG15b, KV15, RVAN15, RWK⁺15, TM14, TAL17]. **Science** [AZK⁺20, Arm11, BVNN22, BBD⁺10, BB10, BDDGT14, BAR14, BHHMG21, BBG12, Blu22, BJCS21, BWE11, BBF⁺21, BSCH14, BCD10, BSS20, CKSS21, CMSP⁺19, CMSP20, CHP⁺18, DJGIO20, DBR⁺20, EBC⁺21, FPSS22, GES14, GM14, GM11, GMM17, HM22, HHM19, Hub12, HAGM14, HAG15b, IIRY17, IKWR22, JMN⁺22, JK20, KWB20, KS14, KFME11, KMB⁺15, LK19, LZRO21, LD19, MFM⁺16, MHP20, MRG17, MMFR20, MW18, PLF22, PGJS17, Pet19, PS21, RVAN15, RSPB17, RWK⁺15, RHSS20, RV09, Ryo19, SNG⁺22, SA20, TK16, TB16, VMFG17, VFFT16, Wag16, WK10, WW17, WDK20, YB19, ZNF⁺20, ZCJR20, ZJWF11, Zin15, AGEL13, Gri13, LGP13]. **Science-** [WDK20]. **Sciences** [RCS11]. **Scientometric** [SNOT21]. **Scope** [GGH⁺10]. **Scratch** [AMSBA15, FKG17, MRR⁺10, UCK⁺10]. **Script** [Mod21]. **Script-based** [Mod21]. **Seamless** [Kar09]. **Searching** [IDC⁺19]. **Second** [KG18]. **Secondary** [Arm11, BDDGT14, BLM⁺14, Hub12, HAGM14,

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Thinking [FU10a, FEC17, GBB⁺17, KKNL21, KO22b, Lai22, LIG22, RG19, SNOT21, TPQE18, WHS⁺17, WSP⁺11, YMZ⁺14, YR15].
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Threshold [AWW15]. **Thrust** [DSU20].
Tier [Mit14]. **Ties** [MW18]. **TOCE** [Hun16, Hun17, Ko22a, TM15]. **Together** [OPC17]. **Tool** [BL14, DJHGI19, PCH09, SPR12, TSK12].
Tools [BSY⁺10, CDCLK17, NJK19, TM11a, YVQ⁺10]. **Topic** [MW18]. **Topics** [EK17].
Towers [SGHZS19]. **Towson** [TK16].
Tracking [KDV22]. **traditional** [Har21].
Training [ORKH09]. **Trajectory** [Hun16, Hun17, LIG22]. **Transactions** [CB19, TM09]. **Transfer** [LLKH18, LD19].
Transfer-Learning [LLKH18].
Transformative [ETN⁺21, YZC19].
Transition [GHT⁺11, TM15].
Transitioning [SAyC⁺21]. **Transitions** [Shi16]. **Translating** [ORS16]. **Trial** [DSUP20, DSU20]. **Troublesome** [YZC19].
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Underrepresented [MFM⁺16].
Understanding [CGZ⁺20, FKG17, GGT20, Lar16, LZRO21, MHP20, RG19, RP19, Shi16, SPR12, VTB⁺20]. **Unit** [MMFR20].
United [GES14, McG12a]. **Universal** [Bur11]. **University** [BVNN22]. **Unlocking** [GK17]. **Unplugged** [TABA12].
up-in-the-cloud [ZPB13]. **upper** [LGP13].
upper-division [LGP13]. **Usability** [AAGH14]. **Usability-Oriented** [AAGH14].
Use [ASG19, LR11, VMAG22]. **Used** [NJK19]. **User** [PLB⁺12]. **Using** [CMSP⁺19, CDCLK17, DTT16, FEC17, GBB⁺17, HS13, JK20, Kie09, LMGVS⁺16, LSSM19, Mit14, RRKP13, Wan11, DSUP20, RVAN15, RC13]. **Utilize** [BBSPK22].
Utilizing [LRJ14].
- Value** [EBC⁺21, MRG17, MSP21]. **Values** [FDW19, PM09]. **Variation** [TB16]. **Veces** [Vog21]. **VHDL** [d'A10]. **via** [KSCP22].
Viable [DBBR11]. **Views** [GYSH19, TABA12]. **Virtual** [WHS⁺17].
Vision [HB15]. **Visions** [HAGM14]. **Visual** [BS10, LR11]. **Visualization** [MBSBA09, RVI09, RV09, SSD09, SCA⁺10, SKM13, UFVI09, YVQ⁺10].
Visualization-Based [RV09].
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