Aim :- Creating cross-tabulations and two-way tables using table()

```
> library("dplyr")
> df <- read.csv("ai_automation_risk_dataset.csv", stringsAsFactors = TRUE)
> print("Column names in dataset:")
[1] "Column names in dataset:"
> print(colnames(df))
 [1] "job_role"                   "industry"
 [3] "avg_salary_usd"             "experience_required_years"
 [5] "education_level"            "task_repetition_level"
 [7] "creativity_requirement"     "physical_labor_level"
 [9] "analytical_complexity"      "social_interaction_level"
[11] "ai_tool_availability"       "ai_tool_maturity_score"
[13] "percent_tasks_automatable"  "job_growth_rate"
[15] "skill_complexity_score"     "regulation_strictness_level"
[17] "ethical_risk_level"         "communication_requirement"
[19] "domain_specific_knowledge_level" "team_collaboration_level"
[21] "ai_dependency_current"      "ai_dependency_future"
[23] "training_hours_needed"      "job_demand_index"
[25] "automation_risk_score"
> df <- df %>%
+   filter(
+     !is.na(job_role),
+     !is.na(avg_salary_usd),
+     !is.na(experience_required_years),
+     !is.na(education_level)
+   )
> df$job_role <- as.factor(df$job_role)
> df$education_level <- as.factor(df$education_level)
> df$avg_salary_usd <- as.numeric(df$avg_salary_usd)
> df$experience_required_years <- as.numeric(df$experience_required_years)
> df$Experience_Group <- ifelse(
+   df$experience_required_years < 3, "Low Experience",
+   ifelse(df$experience_required_years <= 7, "Medium Experience", "High Experience")
+ )
> df$Experience_Group <- as.factor(df$Experience_Group)
> print("Experience Group Distribution:")
[1] "Experience Group Distribution:"
> table(df$Experience_Group)

  High Experience    Low Experience Medium Experience
             1423               584               993
> print("Cross-Tabulation: Job Role vs Education Level")
```

```
> print("Cross-Tabulation: Job Role vs Education Level")
[1] "Cross-Tabulation: Job Role vs Education Level"
> job_education_tab <- table(df$job_role, df$education_level)
> print("Rows = Job Role | Columns = Education Level")
[1] "Rows = Job Role | Columns = Education Level"
> print(job_education_tab)

                     Bachelor High School Master PhD
  Accountant               73          34     39   7
  Business Analyst         63          37     38   6
  Civil Engineer           64          44     39   3
  Consultant               67          46     50   6
  Customer Support         82          38     41   8
  Data Analyst             65          50     39   5
  Doctor                   74          35     46   9
  Electrician              59          33     35   5
  Graphic Designer         62          35     32   6
  HR Specialist            72          30     51   9
  Lawyer                   52          31     32   6
  Marketing Specialist     67          39     39   7
  Mechanic                 70          32     35   2
  Nurse                    66          41     31   8
  Plumber                  58          26     44   4
  Product Manager          81          31     46   6
  Sales Manager            65          34     42   5
  Software Engineer        64          37     44  14
  Teacher                  69          44     39   5
  UX Designer              67          31     39  10
> print("Cross-Tabulation: Job Role vs Experience Group")
[1] "Cross-Tabulation: Job Role vs Experience Group"
> job_experience_tab <- table(df$job_role, df$Experience_Group)
> print("Rows = Job Role | Columns = Experience Group")
[1] "Rows = Job Role | Columns = Experience Group"
> print(job_experience_tab)

                     High Experience Low Experience Medium Experience
  Accountant                      74             26                53
  Business Analyst                66             32                46
  Civil Engineer                  67             28                55
  Consultant                      65             36                68
  Customer Support                81             36                52
```

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```
Consultant            65        36        68
Customer Support      81        36        52
Data Analyst          78        33        48
Doctor                70        42        52
Electrician           55        33        44
Graphic Designer      63        21        51
HR Specialist         91        31        40
Lawyer                47        28        46
Marketing Specialist  84        25        43
Mechanic              71        27        41
Nurse                 71        28        47
Plumber               63        26        43
Product Manager       77        34        53
Sales Manager         82        18        46
Software Engineer     76        27        56
Teacher               79        22        56
UX Designer           63        31        53
>
```

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