Todo.py

```python
1   import json
2
3   def load_todos(filepath="todos.json"):
4       """Loads to-do list from JSON file."""
5       try:
6           with open(filepath, "r") as f:
7               return json.load(f)
8       except FileNotFoundError:
9           return []
10      except json.JSONDecodeError:
11          print("Error reading the todo file. Starting with an empty list.")
12          return []
13
14  def save_todos(todos, filepath="todos.json"):
15      """Saves to-do list to JSON file."""
16      try:
17          with open(filepath, "w") as f:
18              json.dump(todos, f)
19      except IOError:
20          print("Error saving the todo file.")
21
22  def add_todo(todos):
23      """Adds new to-do items, up to a maximum of 8."""
24      count = 0
25      while count < 20:
26          description = input("Enter to-do description (or type 'done' to finish): ")
27          if description.lower() == 'done':
28              break
29          todos.append({"description": description, "completed": False})
30          count += 1
31          print("To-do added!")
32
33      if count == 8:
34          print("Maximum of to-dos reached. Returning to the main menu.")
35
36  def list_todos(todos):
37      """Lists all to-do items."""
38      if not todos:
39          print("No to-dos yet!")
40          return
41
42      for index, todo in enumerate(todos):
43          prefix = "[x]" if todo["completed"] else "[ ]"
44          print(f"{index + 1}. {prefix} {todo['description']}")
45
46  def mark_complete(todos):
47      """Marks a to-do item as complete."""
48      try:
49          index = int(input("Enter to-do index to mark complete: ")) - 1
50          if 0 <= index < len(todos):
51              todos[index]["completed"] = True
```

```python
52              print("To-do marked complete!")
53          else:
54              print("Invalid index!")
55      except ValueError:
56          print("Please enter a valid number.")

58  def remove_todo(todos):
59      """Removes a to-do item."""
60      try:
61          index = int(input("Enter to-do index to remove: ")) - 1
62          if 0 <= index < len(todos):
63              del todos[index]
64              print("To-do removed!")
65          else:
66              print("Invalid index!")
67      except ValueError:
68          print("Please enter a valid number.")

70  if __name__ == "__main__":
71      todos = load_todos()

73      while True:
74          print("\nChoose an action:")
75          print("1. Add to-do")
76          print("2. List to-dos")
77          print("3. Mark complete")
78          print("4. Remove to-do")
79          print("5. Exit")

81          choice = input("> ")

83          if choice == "1":
84              add_todo(todos)
85          elif choice == "2":
86              list_todos(todos)
87          elif choice == "3":
88              mark_complete(todos)
89          elif choice == "4":
90              remove_todo(todos)
91          elif choice == "5":
92              break
93          else:
94              print("Invalid choice!")

96      save_todos(todos)
97
```